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Official Journal of the Indian Menopause Society

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Official Journal of the Indian Menopause Society

Volume 17 / Supplement 1 / 2026

CONTENTS

Editorials

Contemporary Guidelines for Menopausal Health

Atul Munshi S1

Micro and Macronutrient Deficiencies and Their Correlation with Menopausal Symptoms

Ruchika Garg S3

Guest Editorials

Message from the President, Indian Menopause Society, 2025-2026

Anita Shah S8

Introduction to Clinical Practice Guidelines for Menopause 2026

Meeta Meeta S9

Clinical Practice Guidelines for Menopause 2026

Clinical Practice Guidelines for Menopause: *An Executive Summary and Recommendations: Indian Menopause Society 2026

Meeta Meeta, M. Anuradha, Asna Beg Ashraf, Kiran Aggarwal, Leela Digumarti, Tanvir Singh S12

Journey of Visionaries

Indian Menopause Society in 2026 and beyond through a Kaleidoscope

Rama Ashok Vaidya S117

Menopause Medicine Comes of Age: A Founder's Message

Wulf Utian S119

Message From The President Elect- The International Menopause Society 2026

Ang Seng Bin S120

A Unified Mission for Menopause Care

Message

Abhijat Sheth, M. Srinivas S121

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- Your patient data remains fully confidential
- The registry is a by-product and does not require any duplication or additional effort from your end

To register write to us at midliferegistry@gmail.com

Contemporary Guidelines for Menopausal Health

Menopausal care has undergone a significant transformation over the past two decades, evolving from a symptom-centric approach to a comprehensive, evidence-based, and individualized model of care. This shift has been driven by advances in clinical research, an enhanced understanding of women's health needs, and a global movement toward personalized patient care. Clinical Practice Guidelines (CPGs) have been central to this progress, emphasizing shared decision-making, risk stratification, and the appropriate timing and route of therapy rather than uniform treatment algorithms. This supplement of the Indian Menopause Society's CPGs aims to translate this evolving evidence into pragmatic care pathways applicable across India's diverse healthcare settings.^[1,2]

Guidelines are rigorously developed, evidence-based statements that guide clinicians and patients toward informed decision-making in specific clinical scenarios. In menopausal care marked by heterogeneity in symptoms, cultural perceptions, and risk profiles, such guidelines offer a dependable, structured, and adaptable framework to support optimal clinical practice.

Medical guidelines ensure quality, consistency, and safety in clinical care. By consolidating available evidence, evaluating benefits and harms, and presenting pragmatic recommendations, guidelines help reduce practice variation and promote high-quality, standardized management. They improve patient outcomes by endorsing effective interventions – such as menopausal hormone therapy (MHT) for vasomotor symptoms and also showing drawbacks. The role of lifestyle medicine is also gaining its due place in the menopause toolkit.^[3]

From a health systems perspective, guidelines contribute to cost-effective care by helping clinicians choose appropriate investigations and treatments. They also provide medicolegal protection by offering rational, research-backed pathways for decision-making. For clinicians, guidelines are an invaluable tool for continuous professional development, particularly in rapidly evolving fields of menopausal medicine.^[4]

Managing menopause is a global issue with local realities. Menopause is a physiological milestone with profound implications for a woman's physical, psychological, and metabolic health. The post-Women's Health Initiative era led to major paradigm shifts in understanding the benefits and risks of MHT, prompting updated guidelines worldwide.^[5]

While international guidelines draw upon evidence from large multicentric cohorts, Indian guidelines contextualize these recommendations to suit the unique demographic, nutritional, and epidemiological landscape of Indian women. Earlier menopause, higher



Dr. Atul Munshi
Editor-in-Chief

metabolic risk, Vitamin D deficiency, and varied access to healthcare necessitate tailored recommendations. Periodical updates improve credential of guidelines.

Let us review major international guidelines.

The North American Menopause Society (NAMS), 2023: The NAMS statement emphasizes individualized therapy, confirming that MHT remains the most effective treatment for vasomotor symptoms. It endorses the timing hypothesis, supports low-dose and transdermal regimens to minimize risk, and highlights nonhormonal alternatives for women with contraindications.^[6]

International Menopause Society, 2024 advocates a holistic approach, integrating lifestyle modifications, cardiovascular risk screening, and shared decision-making. Regular re-evaluation of therapy every 1–2 years is recommended.

National Institute for Health and Care Excellence Guidelines (UK), NG23 Updated 2024: NICE prioritizes patient-centered counseling and risk assessment. Key features include MHT for vasomotor and urogenital symptoms, transdermal preparations for women at venous thromboembolism risk, and no mandatory age-based discontinuation.^[7]

European Menopause and Andropause Society (EMAS), 2023: EMAS focuses on cardiometabolic and bone health, encourages micronized progesterone and nonoral estrogen, and promotes multidisciplinary menopausal care.

European Society of Endocrinology, 2025: The Endocrine Society supports MHT for specific symptomatic patients and for premature ovarian insufficiency until the physiological age of menopause and highlights the protective effects of early initiation.

INDIAN GUIDELINES

Indian Menopause Society, 2019 and 2023: Indian guidelines reflect the reality of earlier menopause (<46 years), high prevalence of Vitamin D deficiency, and increased cardiometabolic burden.^[8]

Key recommendations include:

- Comprehensive metabolic, skeletal, and cardiovascular assessment
- MHT for symptomatic women, ideally initiated <60 years or within 10 years of menopause
- Detailed baseline evaluation before initiating therapy
- Strong emphasis on lifestyle modification and nonhormonal options
- Attention to sarcopenia, Vitamin D deficiency, and metabolic syndrome
- Culturally sensitive counselling to dispel myths
- Use of local estrogen for urogenital symptoms.

Federation of Obstetric and Gynaecological Societies of India (FOGSI), 2023: FOGSI integrates menopause into mainstream women's health care, stressing individualized MHT use, metabolic and bone health screening, judicious use of bioidentical preparations with medical supervision, and training for OBGYNs and primary care physicians in menopause management.^[9]

Indian Council of Medical Research (ICMR), 2022: ICMR highlights research gaps and advocates long-term studies on Indian women's MHT outcomes, national menopause registries, regional epidemiological research to refine guidelines, and policy frameworks for primary-care integration.

PATH AHEAD

- Region-specific algorithms considering nutritional and socioeconomic diversity
- Training programs for primary care physicians specializing in menopausal medicine
- Digital platforms for teleconsultation, symptom tracking, and patient education
- Indian cohort studies on long-term effects of MHT in populations with diabetes, cardiovascular risks, and bone loss
- Integration of menopause into national health policy frameworks
- Role of AI in future menopausal management.^[10,11]

In Conclusion, menopausal health must be guided by robust, context-sensitive clinical guidelines. While international recommendations provide scientific rigor, Indian guidelines ensure that care is culturally relevant, equitable, and aligned with local epidemiology. A hybrid model – global evidence adapted to local needs – remains the cornerstone of optimal menopausal care.

The present supplement of upgraded guidelines by the Indian Menopause Society will be an important document for menopausal medical practice, especially in the Asia-Pacific region.

This commendable initiative reflects the collective dedication of the task force authors and the Indian

Menopause Society toward advancing evidence-based, accessible, and woman-centered care for women in midlife.

Atul Munshi

Editor-in-Chief, Journal of Midlife Health
E-mail: munshiap@gmail.com

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Micro and Macronutrient Deficiencies and Their Correlation with Menopausal Symptoms

INTRODUCTION

Menopausal symptoms arise from estrogen deficiency, neuroinflammation, and metabolic changes. Nutrition, particularly macro- and micronutrients, is crucial during perimenopause and menopause, as estrogen decline alters metabolism, nutrient absorption, and utilization. Deficiencies in these nutrients can amplify symptom severity, whereas a good diet may mitigate them.

MACRONUTRIENT DEFICIENCIES AND MENOPAUSAL SYMPTOMS

Macronutrients – proteins, carbohydrates, and fats – provide structural components essential for hormonal regulation, muscle maintenance, and inflammation control. During menopause, estrogen deficiency promotes sarcopenia (muscle loss), visceral fat accumulation, and insulin resistance, which is worsened by inadequate protein intake.^[1,2]

ICMR 2024 guidelines highlight only 400 mg calcium intake versus 1200 mg RDA, driving parathyroid hormone (PTH) elevation and metabolic syndrome in 70% of cases. Deficiency of magnesium found in 40%–60% women, amplifies neuroinflammation. Postmenopausal women require higher protein intake (1.0–1.2 g/kg body weight daily) to counteract age-related muscle loss and support bone health. Low protein exacerbates menopausal bone and muscle symptoms by mirroring osteoporosis.^[3,4] Postmenopausal women with major depressive disorder in late menopause exhibited lower protein intake, high body mass index, fat mass, and persistent mood swings, although early menopausal women reported more acute VMS despite better protein consumption.^[5] Figure 1 association of protein intake with menopausal symptoms.

Carbohydrate imbalances, often from high refined sugar intake, are linked to glycemic instability and worsened vasomotor symptoms (VMS) [Figure 2].

Macronutrient deficiencies promote metabolic dysregulation, with protein deficiency directly correlating to musculoskeletal symptoms and mood instability, and imbalanced fats/carbs exacerbating VMS and sleep issues.

MICRONUTRIENT DEFICIENCIES AND MENOPAUSAL SYMPTOMS

Micronutrients – vitamins and minerals – act as cofactors in hormone synthesis, antioxidant defense, and neural



Dr. Ruchika Garg
Editor-in-Chief

signaling. Estrogen decline impairs their homeostasis, leading to deficiencies that intensify menopausal symptoms.

Vitamin D deficiency low levels disrupt thermoregulation, prolonging VMS episodes. Critical appraisals confirm severe deficiency worsens menopausal symptomatology, falls, and fractures, although supplementation benefits are inconsistent unless combined with calcium.[Figure 3] In estrogen-deficient models, Vitamin D shortfall delays menopause onset but heightens symptom severity, including heart discomfort.^[6]

MAGNESIUM DEFICIENCY

It drives neuroinflammation through reduced intracellular Mg^{2+} , exacerbated by estrogen loss. In ovariectomized mice, it caused pain hypersensitivity, memory deficits, and depression-like behaviors through nuclear factor kappa B (NF- κ B) activation and elevated tumor necrosis factor-alpha/interleukin-1 beta. Supplementation with magnesium-L-threonate reversed these, suggesting deficiency underlies chronic pain and cognitive fog in 30%–40% of menopausal women. B vitamins, particularly B6, show inverse associations with VMS; higher intake reduces hot flush odds by 8% per 10 μ g/MJ, likely through neurotransmitter modulation. It also contributes to bone health by modulating osteoblast and osteoclast activity and maintaining Vitamin D metabolism.^[7,8]

Menopause accelerates bone resorption. In estrogen-deficient rats, severe calcium restriction elevated PTH, increased visceral fat, downregulated fat oxidation genes, and boosted insulin resistance – hallmarks of metabolic syndrome in menopause. Human data show postmenopausal hypocalcemia correlates with hypertension and depressive symptoms, underscoring its role in

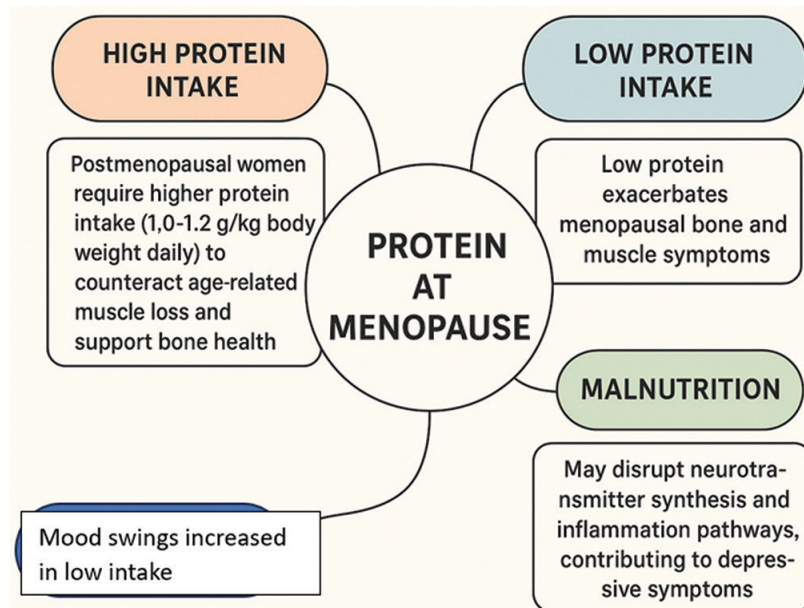


Figure 1: Association of protein intake with menopause

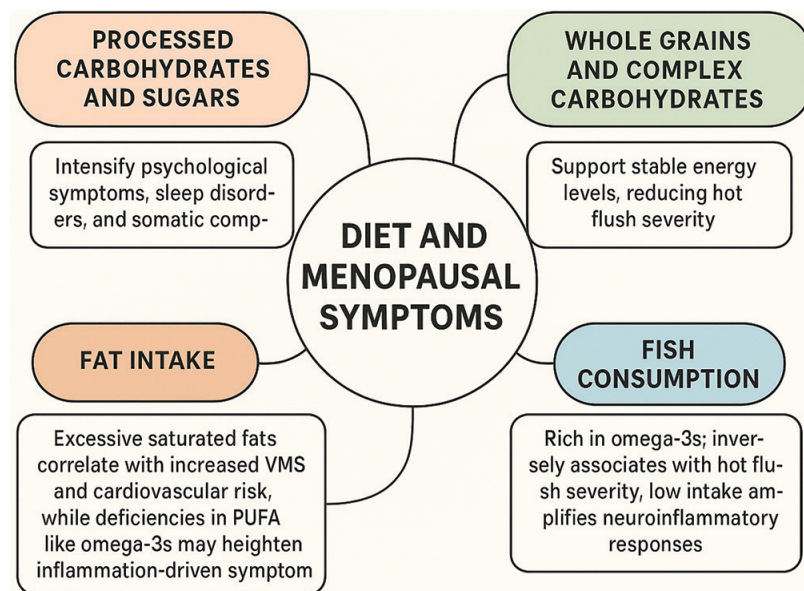


Figure 2: Association of processed carbohydrates with menopausal symptoms

cardiovascular and mood disturbances. Adequate intake (1200 mg/day) with Vitamin D prevents osteoporosis-related pain and fractures.^[9,10]

COGNITIVE AND MOOD REGULATION

Neuroprotective roles of several micronutrients have been documented, pertinent to menopausal mood changes and cognitive decline. B vitamins (B6, B12, folate) are essential for neurotransmitter synthesis and homocysteine regulation; deficiencies are linked to depression and cognitive impairment.

Micronutrient shortfalls in vegetables, fruits, and whole foods amplify urogenital, joint, and skin symptoms, whereas deficiencies in C and B vitamins heighten oxidative stress. Phytoestrogens from soy may partially offset these, reducing VMS modestly.

CARDIOVASCULAR AND METABOLIC HEALTH

Micronutrients impact cardiovascular risk factors and metabolic homeostasis, which become critical concerns postmenopause. Vitamins B6, B12, folic acid, and magnesium regulate homocysteine metabolism,

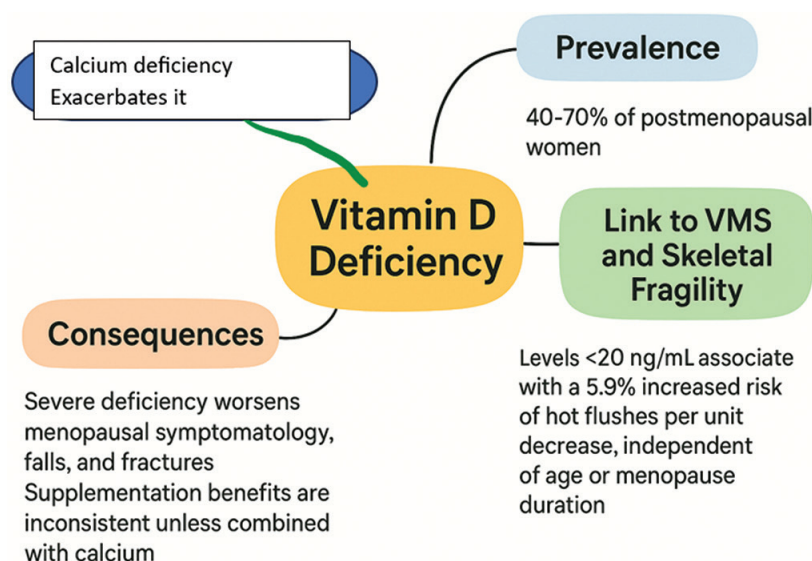


Figure 3: Vitamin deficiency and menopausal symptoms

lipid profiles, and blood pressure. Chromium supports glucose metabolism and insulin sensitivity, reducing diabetes risk. Antioxidant vitamins (C, E), zinc, and selenium combat oxidative stress and inflammation, mitigating vascular injury and metabolic syndrome progression.

INTERPLAY AND CLINICAL IMPLICATIONS

The interplay between macro- and micronutrients is synergistic; protein deficiency impairs Vitamin D activation, whereas low calcium/magnesium intake hinders muscle protein synthesis. Balanced diets rich in Mediterranean patterns – high in vegetables, lean proteins, and omega-3 sources – to alleviate symptoms holistically. Increasing protein and micronutrient-dense foods, improve sleep and mood in 60% of cases, outperforming isolated supplements.

EMERGING BIOACTIVE SUBSTANCES IN MENOPAUSAL SYMPTOM MANAGEMENT

Beyond optimising macro- and micronutrient status, a growing body of research over the past 7 years has highlighted the potential of various nutraceuticals, botanical extracts, and other bioactive compounds to alleviate menopausal symptoms through mechanisms that include phytoestrogenic activity, anti-inflammatory effects, neurotransmitter modulation, and antioxidant protection. These compounds are increasingly considered candidates for inclusion in personalised, multicomponent nutritional strategies.

Notable examples supported by recent clinical and preclinical evidence include:

- Ashwagandha (*Withania somnifera*) root extract, which has demonstrated reductions in stress-related VMS and improvements in sleep quality and sexual function in perimenopausal women^[11]

Collagen Peptides Improve Bone Mineral Density and Bone Markers in Postmenopausal Women according to results of a randomized controlled study^[12]

- Alpinia galanga and Citrus bergamia (bergamot) polyphenols, which exhibit vasorelaxant and mood-stabilizing properties
- Phytoestrogenic herbs such as red clover isoflavones, maca (*Lepidium meyenii*), dong quai (*Angelica sinensis*), chasteberry (*Vitex agnus-castus*), and hops (*Humulus lupulus*) are effective in reducing hot flush frequency and severity in randomised trials
- Curcumin, resveratrol, quercetin, and green tea catechins (e.g., epigallocatechin-3-gallate [EGCG]) exhibit strong anti-inflammatory and antioxidant properties that reduce neuroinflammation through NF-κB pathway inhibition and alleviate endothelial dysfunction by lowering ROS and enhancing nitric oxide bioavailability, potentially stabilizing VMS^[13-15]
- Pomegranate ellagitannins and lycopene support cardiovascular and urogenital health through nitric oxide modulation and reduction of oxidative stress
- Valerian root and lemon balm combinations, as well as kava (*Piper methysticum*) and licorice (*Glycyrrhiza glabra*), are noted for anxiolytic and sleep-promoting effects^[16]
- Mineral cofactors such as zinc and iron, which, when deficient, exacerbate fatigue, cognitive complaints, and mood disturbances commonly reported during

the menopausal transition. A one-size-fits-all approach is unlikely to be optimal. Personalised combination supplements tailored to each woman's symptoms, biomarker profile (e.g., Vitamin D or magnesium status, inflammatory markers) are recommended as these enhance efficacy, minimize adverse effects, and improve long-term adherence compared with generic multivitamin or single-herb preparations.

In conclusion, integrating evidence-based bioactive compounds with targeted macro- and micronutrient repletion offers a promising, holistic framework for managing menopausal symptoms. Ongoing and future randomized controlled trials should prioritize multiingredient formulations designed through a personalised lens to establish optimal dosing, synergy, and long-term safety.

CONCLUSION

Micro- and macronutrient deficiencies significantly correlate with intensified menopausal symptoms, from VMS to osteoporosis. Protein deficiency (<1.0 g/kg/day) accelerates sarcopenia and osteoporosis, whereas calcium, Vitamin D, magnesium, and B6 gaps intensify VMS, pain hypersensitivity, and cognitive fog through disrupted thermoregulation, NF- κ B activation, and homocysteine elevation. Human cohort studies confirm that late-postmenopausal women with major depression exhibit macronutrient deficits correlating with higher BMI and persistent mood instability.

Emerging nutraceuticals – ashwagandha (300 mg BID), collagen peptides (5 g/day), phytoestrogens (red clover 80 mg), and polyphenol combinations (curcumin/resveratrol/EGCG) – offer synergistic relief through adaptogenic, anti-inflammatory, and phytoestrogenic mechanisms, reducing MRS scores by 20%–47% in randomized controlled trials (RCTs) without hormonal risks.

For Indian women facing Vitamin D deficiency in 70%–90%, protein deficiency (65%) and metabolic syndrome, nutrition represents a cornerstone of nonpharmacological menopausal care.^[17] Adopting nutrient-rich diets during perimenopause can mitigate these, emphasizing prevention.^[18] Future RCTs should explore combined interventions for personalized care.

Ruchika Garg

Department Obstetrics and Gynaecology, SN Medocal College,
Agra, Uttar Pradesh, India
E-mail: ruchikagargjsafog@gmail.com

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Message from the President, Indian Menopause Society, 2025–2026

Dear Colleagues,

Warm greetings.

Today, in the era of science and technology, a woman's lifespan has increased. So, a woman passes more than one-third of her life in the menopausal age group. A woman is considered the pivot of the family. So, her health is of utmost importance for the betterment of a family and so of society and ultimately for the betterment of the nation. Today, the Indian Menopause Society (IMS) is rocking at the national and international levels. The main mission of the IMS is to help a midlife woman lead a healthy, happy life.

Of course, today, everyone is interested in endoscopy and infertility, but at the same time, the proper knowledge of menopause management is also a need of the hour.

I am so lucky that, in 2020, when I was the Secretary General of the IMS, the Clinical Practice Guidelines (CPGs) were updated. This year, as the President of the IMS, we will launch the Updated CPGs 2026.

It gives me great pleasure to share with you the Clinical Practice Guidelines on Menopause (CPG-M 2026), developed under the aegis of the IMS. These guidelines represent a landmark effort to advance evidence-based, context-specific, and holistic care for women during the menopausal transition and postmenopause.

Menopause is no longer viewed merely as a physiological event requiring treatment only when symptoms become troublesome. Contemporary evidence clearly identifies this life stage as a critical window for preventive health interventions, early risk assessment, and long-term well-being. The newly released CPG-M reframes menopause care by integrating global scientific evidence with Indian data and expert consensus, thereby ensuring relevance, feasibility, and scientific rigor for real-world clinical practice in our country.

Recognizing the diversity of healthcare delivery models and population characteristics in India, the CPG-M offers country-specific recommendations that cannot be directly extrapolated from Western guidelines. A major strength of this document is its structured, three-tier healthcare approach and its emphasis on multidisciplinary care, involving gynecologists, physicians, endocrinologists, cardiologists, oncologists, psychologists, nutritionists, physiotherapists, and policymakers.

Key objectives of the guidelines are as follows:

- Systematic assessment, diagnosis, risk stratification, and individualized management of menopausal women
- Supporting primary care physicians with clear referral pathways
- Integrating menopausal health into national noncommunicable disease strategies
- Promoting the establishment of structured menopause clinics across levels of care
- Stimulating research in menopausal medicine, especially in the Indian context.

The document has been developed using a rigorous methodology, including the PICOTS framework, systematic literature searches, expert appraisal, and internal and external peer review.

Recommendations are graded using the GRADE system, ensuring transparency and reliability.

Importantly, the guidelines reflect a balanced and evidence-based approach to menopausal hormone therapy, emphasizing individualized risk–benefit assessment, shared decision-making, and ongoing review.

By adopting these guidelines, healthcare professionals can significantly improve quality of care, facilitate early detection of chronic diseases, strengthen preventive health strategies, and contribute to healthy aging in women. Despite gaps in Indian research data, the CPG-M lays a strong foundation for future studies and policy initiatives.

I strongly encourage all clinicians and stakeholders involved in women's health to read, use, and widely disseminate these guidelines, so that together we can move closer to the IMS vision: **“Fit @ Forty, Strong @ Sixty, and Independent @ Eighty,”** which I have elaborated.

**“Fit @ 40, Fancy @ 50, Strong @ 60, Sexy @ 70,
Independent @ 80, Naughty @ 90, and Healthy @ 100.”**

With best wishes,
Dr. Anita Shah

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Introduction to Clinical Practice Guidelines for Menopause 2026

INTRODUCTION

As early as 1959, Simpson articulated a prevailing view of menopause as a physiological state requiring treatment only when symptoms interfered with daily functioning.^[1] While progressive for its time, this perspective predates contemporary evidence recognizing the menopausal transition as a biological window for preventive and holistic health interventions.

In everyday clinical practice, physicians are guided by the principle of “working with what is available, where we are, rather than with what we wish for, to deliver the best possible care to patients.”

Guidelines, unlike prescriptive protocols, support clinician judgment and informed decision-making. Do we need country-specific guidelines? Yes. Healthcare delivery models, population characteristics, and contextual realities vary widely across countries and cannot be readily extrapolated from one setting to another.

The Clinical Practice Guidelines for Menopause (CPG M), developed under the aegis of the Indian Menopause Society (IMS), provide a comprehensive overview of the complexities of the menopausal transition, timely risk assessment, preventive interventions, and shared decision-making. These guidelines reframe menopause care by providing clear, evidence-based definitions of symptoms and their management and by proposing a structured three-tier healthcare system and a multidisciplinary approach to improve menopausal health outcomes. These guidelines aim to bridge the gap between evidence-based and experience-based practice by integrating robust global scientific literature with published and unpublished Indian data and informed expert consensus, thereby ensuring relevance, feasibility, and scientific rigor in real-world clinical care.

The U.S. Food and Drug Administration’s removal of the black box warning in November 2025 marks a pivotal shift in menopause medicine from fear-driven messaging to evidence-based, individualized risk–benefit assessment and informed choice. Nevertheless, the clinician’s role remains one of balance, ensuring that menopausal hormone therapy is offered judiciously, with careful patient selection, counseling, and ongoing review.

TARGET AUDIENCE

The target audience for the guidelines includes adult women, IMS members, gynecologists, physicians, endocrinologists, oncologists, cardiologists, psychologists,

nutritionists, physiotherapists, and policymakers involved in women’s health and midlife care.

OBJECTIVES

- The monogram of this executive summary serves as the core reference for the Credentialed IMS Menopause Practitioner (CIMP) examination held annually
- To guide health-care practitioners in the systematic clinical assessment, diagnosis, risk stratification, and individualized management of women during the menopause transition and postmenopause
- To aid primary care physicians in understanding the basics of menopausal health and enable appropriate and timely referral to specialists, as required
- To inform and support health policy formulation by providing an evidence-based framework for integrating menopausal health into national noncommunicable disease (NCD) strategies, primary healthcare services, and women’s health programs
- To raise awareness among health professionals and policymakers of the health priorities of the aging woman and to promote the establishment of structured menopause clinics across levels of care
- To stimulate interest in research across all aspects of menopausal medicine.

METHODS

The 2026 CPG M builds on earlier IMS guideline documents released in 1998, 2002, 2008, 2010, 2012, and 2020. The methodology underpinning guideline development was detailed in the 2012 editorial and has been updated and expanded for the current edition.^[2] Planning and execution of the 2026 guidelines spanned over 1 year. Key clinical questions were structured using the PICOTS framework, specifying the *population, intervention, comparator, outcomes, timing, and setting*, to inform systematic evidence identification and review.^[3] Evidence was sourced through systematic searches of electronic databases, including PubMed, MEDLINE, and the Cochrane Database of Systematic Reviews, as well as from published international and national guidelines, consensus statements, and standard reference textbooks on menopause management. The document also incorporates relevant abstracts from oral and poster presentations at national IMS scientific meetings, along with structured expert opinion where high-quality evidence was limited.

The Core Guideline Committee (Chair and Co-Chairs) conducted multiple online meetings to critically

appraise evidence and review, refine, and finalize each recommendation. The draft guidelines underwent internal review by the IMS Peer Review Task Force, followed by external review by National and International Review Boards comprising multidisciplinary medical experts, patient advocates, and ethicists.

SYSTEM FOR GRADING: EVIDENCE USED IN THE DOCUMENT

The quality of evidence and the level of recommendation were done using the Grades of Recommendation, Assessment, Development, and Evaluation system.^[3] Recommendations are based on strong evidence and suggestions on experience-based evidence.^[4]

DISSEMINATION OF THE GUIDELINE

To facilitate wide dissemination and accessibility, the Executive Summary and Recommendations of the Guideline are available on the Indian Menopause Society (IMS) website (www.indianmenopausesociety.org) and are published in the Journal of Mid-Life Health. To maximize reach and implementation, the guidelines will be disseminated through IMS-accredited CME programs, national and regional conferences, webinars, and structured training initiatives, including the CIMP examination. Additional dissemination strategies include open-access digital, mobile-friendly resources distributed through IMS platforms; engagement with professional bodies, academic institutions, and policymakers; and the use of simplified patient-facing materials in regional languages through the IMS 35-Plus Committee.

BENEFITS OF USING THE GUIDELINES

The benefits of using these guidelines are as follows: (i) improved quality of care; (ii) early detection and management of NCDs; (iii) recognition of the urgent need for preventive health programs by all stakeholders related to women's health; and (iv) given the significant lacunae in Indian data, it is hoped that the guidelines will stimulate interest in research into various aspects of menopause.

LIMITATIONS AND RESEARCH GAPS

The guideline is undoubtedly limited by the paucity of robust research evidence on pharmacological management in India, but the effort has been directed toward tailoring the recommendations to the diverse Indian context using the best available evidence. Future research priorities identified by the guidelines include longitudinal studies following women through the menopausal transition, qualitative research exploring women's experiences and preferences, and intervention studies evaluating the effectiveness of various treatment approaches in Indian populations.

CONCLUSION

The responsibility for developing specialty menopause clinics, modeled on antenatal clinics, in both the private and public sectors, and for advancing menopause management as a medical specialty, lies with the government and nongovernmental organizations. Meanwhile, the guideline aims to provide a resource book to support the busy clinician in delivering optimal care to the aging woman. Equally important, when women are informed and supported, self-care becomes a powerful and enduring contributor to healthy aging.

REVISION OF THE GUIDELINE

The recommendations are to update the guidelines every 5 years.

“Serving as Chair for three consecutive revisions of the Executive Summary and the Monograph of the CPG M has been an enriching and deeply fulfilling journey. It has been a privilege to contribute to the evolution of these guidelines, and I now hand over the responsibility for the next revision with confidence, assured that it is entrusted to the capable and committed hands of my Co-Chairs.”

EDITORIAL INDEPENDENCE

The views expressed in this guideline are independent of any external influences.

Disclosures

No conflicts of interest relevant to this document were declared. Artificial intelligence tools were used solely as adjuncts to support drafting, editing, and summarising the manuscript. All clinical interpretations, recommendations, and final decisions were independently reviewed, validated, and approved by the guideline development committee.

Acknowledgment

I extend my heartfelt thanks to all the experts who generously contributed their time to this guideline on menopause management in India. A special word of appreciation to Professor Martha Hickey for her exemplary role as a reviewer and for her proactive, rigorous, and constructive feedback, which significantly strengthened the guideline's quality. I am deeply grateful to my coauthors Anuradha M, Asna A B, Leela D, Kiran A, and Tanvir S for their sustained commitment, scholarly rigor, and collaborative spirit throughout the guideline development process.

This is one of the endeavors of the IMS to work toward the slogan,

“Fit @ Forty Strong @ Sixty, and Independent @ Eighty”.

Meeta Meeta

Co-Director and Chief Gynaecologist, Tanvir Hospital, Hyderabad, Telangana, India
E-mail: drmeeta919@gmail.com

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Clinical Practice Guidelines for Menopause: *An Executive Summary and Recommendations: Indian Menopause Society 2026

Meeta Meeta¹, M. Anuradha², Asna Beg Ashraf³, Kiran Aggarwal⁴, Leela Digumarti⁵, Tanvir Singh⁶

¹Co-director, Lead Gynaecologist, Department of Obstetrics and Gynaecology, ²Lead Gynaecological Surgeon, Urogynaecology, Tanvir Hospital, Hyderabad, Telangana, India, ³Gynaecological Oncologist, St Theresa's Hospital and Asvins Hospitals, Hyderabad, Telangana, India, ⁴Director, Professor of Obygn, Lady Hardinge Medical College, New Delhi, India, ⁵Consultant Obygn and Director, Ujala Medical Centre, Lucknow, Uttar Pradesh, India, ⁶Professor and HOD, SRM Medical College, SRM Institute of Science and Technology, Chennai, Tamil Nadu, India

Address for correspondence: Dr. Meeta Meeta,

Department of Obstetrics and Gynaecology, Tanvir Hospital, Kamalapuri Colony, Hyderabad, Telangana, India.

E-mail: drmeeta919@gmail.com

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RESOURCE FACULTY

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SECTION 1

GENERAL CONSIDERATIONS

Definition and biosociocultural aspects of menopause

1. Menopause is a dynamic physiological transition from the reproductive to the nonreproductive stage of a woman's life. It involves systemic physiological adaptations affecting the neuroendocrine, cardiovascular, metabolic, musculoskeletal, genitourinary, and immune systems.^[1,2]
2. Each woman experiences menopause uniquely, with distinct symptom trajectories varying in timing, severity, and duration. This individualized nature of the menopausal experience underscores the need for personalized care and understanding.^[3,4]
3. All mammals undergo reproductive senescence and oopause, the irreversible depletion of ovarian follicles, and typically progress until the end of life, but only humans and a few cetaceans experience true menopause, the loss of fertility decades before death (<0.1% of mammals). Menopause continues to raise important evolutionary and biological questions.^[5,6]
4. In India's classical Ayurvedic tradition, menopause is described as Rajonivrtti, a normal physiological transition. The text suggests that it typically occurs around the age of fifty. This unique cultural perspective on menopause in India adds a distinct layer to the understanding of menopause.^[7,8]

Medicalization of menopause

5. The basis of the debate on menopause medicalization gained significance in the 1930s and 40s, in response to the popularization of menopause as a hormone deficiency state, with the isolation of estrogen and the rise of hormone replacement therapy (HRT) as an “elixir of youth”.^[9,10] Meyer's 2001 analysis documented how menopause is in the process of becoming medicalized, with midlife women being told that “natural menopause is a deficiency condition requiring replacement hormones.”^[11]
6. However, substantial scientific evidence supports the view of menopause as a biological change with significant pathological potential, paralleling other life transitions such as puberty and pregnancy.^[12,13]
7. **Bell's three models of menopause care:** biological (physiological changes helped by hormone therapy), psychological (women's inherent personalities relieved by cognitive behavioral therapy), and environmental (self-help) form the basis for guiding medical practice.^[14]
8. Hickey *et al.* well described the final word on this debate in The Lancet 2024 that for most women, menopause should be viewed as a part of healthy aging rather than “framing this natural period of transition as a disease of estrogen deficiency” and prevent “overmedicalization” by promoting hormone therapy as empowerment.^[15]
9. Rama Vaidya, Founder, President of the Indian Menopause Society (IMS), envisaged that the menopause society should work toward a holistic approach to menopausal health and not restrict research and implementation of menopausal health to medication (personal communication).

Menopause and the aging continuum

10. Menopause is associated with menopause symptoms and diverse physiological changes affecting multiple organ systems and metabolic processes, setting the stage for aging and increasing susceptibility to noncommunicable diseases (NCDs).^[16]
11. Menopausal and age-related biological changes overlap substantially, making it challenging to distinguish menopause-specific effects from those of chronological aging.^[17]

Early screening and preventive health

12. The menopause transition (MT) constitutes a biological window for preventive intervention, as highlighted by longitudinal studies and systematic reviews demonstrating that cardiovascular and metabolic risk trajectories accelerate around the final menstrual period (FMP) (Grade A).^[18,19]
13. **Suggested screening threshold for NCDs:** In India, the “Start at 35” (awareness from age 35 and universal screening from 40 years) approach is based on the relatively early age at natural menopause (ANM) and the sharp rise in the prevalence of hypertension, diabetes, and low bone mass (Grade C).^[20]
14. This recommendation is supported by national surveys, such as the National Family Health Survey, Round 5 (2019–21) (NFHS-5)^[21] and the Longitudinal Ageing Study in India, Wave 1 (2017–18) (LASI),^[22] and the Women's Health Initiative (WHI; USA randomized clinical trial [RCT] program),^[23] as well as large international cohorts, including the Study of Women's Health Across the Nation (SWAN; USA longitudinal cohort).^[24] Multiple meta-analyses and global studies have also demonstrated the early onset and higher burden of cardiometabolic risk factors in South Asian populations; however, prospective RCT evidence in Indian women remains limited.^[25-27]
15. IMS “Club 35” initiative, active since 2007, is a nationwide public awareness program that promotes preventive midlife health among women aged ≥ 35 years. It emphasizes early screening, lifestyle changes, and health empowerment before menopause.^[28]

Policy gaps and advocacy priorities

16. Menopause remains a critically underrepresented area in both undergraduate and postgraduate medical curricula and receives insufficient attention from policymakers.
17. This gap highlights the urgent need for structured sensitization and formal training of healthcare professionals in menopause medicine.^[29,30]
18. Currently, there are no dedicated national health programs addressing the needs of women aged 40–60 years, highlighting a critical opportunity for policy integration within ongoing women's health and NCD initiatives.^[31]

Multidisciplinary models of menopause care

19. Establishing a structured three-tier healthcare system spanning primary, secondary, and tertiary levels of care would significantly reduce disability and improve the quality of life (QOL) in India's growing aging population (Grade C).^[27]
20. Menopausal health extends beyond obstetrics and gynecology and requires an integrated, multidisciplinary approach.
21. Hence, care should involve not only gynecologists but also dietitians, physiotherapists, psychologists, psychiatrists, physicians, cardiologists, endocrinologists, gynecologic oncologists, and orthopedic specialists, supported by an effective referral system.^[4,32-35]

Proposed three-tier model of care

22. **Level I:** Primary care unit – First-contact care, screening, lifestyle counseling, basic management, and referral when indicated.
23. **Level II:** Primary gynecological unit – Comprehensive gynecological evaluation, initiation of hormonal and nonhormonal therapies, and management of gynecological comorbidities.
24. **Level III:** Menopause specialist and multidisciplinary unit – Advanced, risk-stratified care by menopause specialists in collaboration with multidisciplinary teams, including cross-specialty referrals.

TERMINOLOGY AND DIAGNOSIS

25. **Natural or spontaneous menopause** is recognized to have occurred after 12 months of amenorrhea, for which there are no obvious pathological causes. It occurs due to the depletion of ovarian follicles, resulting in near-complete but natural diminution of ovarian hormone secretion.^[36,37] The ovary is among the first organs in the human body to undergo aging, owing to its finite, nonrenewable follicular pool and high metabolic demand.
26. The estimated average ANM of 46.6 years in India is supported by large, representative, and consistent data; however, its precision is constrained by recall bias, lack of hormonal confirmation, and regional variation. Robust longitudinal population-based studies are required to validate these cutoffs. Therefore, it should be interpreted as a population-level approximation, not an exact biological constant.^[38-41]
27. The diagnosis of natural menopause should be based primarily on clinical history, including menstrual patterns, age, and symptoms. Menopause is diagnosed retrospectively after 12 consecutive months of amenorrhea following the last menstrual period in women aged ≥ 45 years, which is not attributable to other causes. Menstrual cycle irregularity is an objective marker of MT (Grade A).^[42-44]
28. Biochemical markers such as follicle-stimulating hormone (FSH), 17 β -estradiol (E2), and anti-Müllerian hormone are not recommended for the diagnosis of natural menopause (Grade A).^[45]
29. Biochemical markers for the diagnosis of menopause are preferably restricted for use in special situations such as premature ovarian insufficiency (POI), decision on hysterectomy at MT, uncertain menstrual history, fertility counseling, or for research (Grade C).^[46]
30. FSH levels > 10 IU/L indicate a decline in ovarian function. FSH > 35 –40 IU/L and E2 < 20 pg/mL are diagnostic of menopause (Grade C).^[42,43,45-47]
31. **Premenopause** refers to the entire reproductive period, up to the FMP.^[36]
32. **Perimenopause:** A broader clinical term covering the MT and the first 12 months following the FMP.^[36,37]
33. **MT:** A term defined by the Stages of Reproductive Ageing Workshop (STRAW + 10), representing the progression from the onset of variable cycle length (≥ 7 -day difference from normal) to the FMP. Clinically, MT is characterized by erratic menstruation, anovulatory cycles, reduced fertility, and the onset of symptoms affecting QOL. It typically lasts a median of 4 years but may extend for 8–10 years.
34. **MT** comprises early transition, characterized by persistent cycle variability (≥ 7 -day difference), and late transition, defined by skipped cycles (≥ 60 days of amenorrhea) and increased vasomotor symptoms. Late MT is increasingly recognized as a critical physiological window, a period when accelerated biological and metabolic changes emerge. This window could potentially serve as a biomarker for chronic disease risk and a target for preventive health interventions.^[42,44,48-50]

35. Climacteric literally means “rung of a ladder” and is often used interchangeably with perimenopause or MT. When accompanied by symptoms, it is referred to as climacteric syndrome. However, this term is not preferred in contemporary scientific literature.^[37]
36. **Postmenopause:** This refers to the period of life beginning from the FMP onward, irrespective of whether menopause occurs spontaneously or is iatrogenic.^[37]
37. **POI:** amenorrhea due to loss of ovarian function before the age of 40 years. Given the lower average ANM of 46 years, the statistical cutoff would correspond to <38 years; however, a <40 years definition is recommended for clinical consistency and global alignment.^[19,51] POI is a state of female hypergonadotropic hypogonadism that can manifest as primary amenorrhea with onset before menarche or secondary amenorrhea.^[19,51]
38. An FSH level >25 IU/L, measured on any day of the cycle, together with amenorrhea or irregular menstrual cycles for ≥4 months (after excluding secondary causes), is a reliable biochemical marker for the diagnosis of POI in women aged <40 years.^[19,51] In cases of diagnostic uncertainty, FSH measurement should be repeated after 4–6 weeks to confirm the diagnosis.^[51]
39. **Early menopause (EM):** The term EM (40–45 years) was introduced by the International Menopause Society and later endorsed by the North American Menopause Society (2014 and 2022) and the European Menopause and Andropause Society (2019 and 2022) to distinguish it from POI and ANM. In India, the statistical cutoff corresponds to <42 years, although the clinical definition remains <45 years for clinical consistency and global alignment.
40. Women with EM or POI (≤45 years) have an increased risk of cardiovascular disease (CVD), type 2 diabetes (T2DM), osteoporosis, fractures, and all-cause mortality (Grade B).^[18,52-57] The long-term risk of cognitive impairment or dementia in women who undergo oophorectomy before natural menopause is approximately doubled; however, this risk is effectively mitigated when estrogen therapy is initiated soon after surgery and continued until at least the average ANM (Grade B).^[58] For other associated health risks in women with EM, evidence for their prevention or mitigation through HRT remains limited, underscoring the need for further longitudinal and interventional studies (Grade C).^[57,59,60]
41. EM is associated with reduced muscle mass, while POI is associated with reduced muscle strength and performance compared to the normal menopausal age. While large prospective Indian data are lacking, small cross-sectional studies suggest a similar pattern (Grade C).^[61-64]
42. **Late-onset or delayed menopause:** It is typically defined as menopause occurring at or beyond 55 years; it lacks a uniform goal standard but clinically aligns with this threshold.^[18,36] Late-onset menopause is associated with a higher risk of estrogen-dependent malignancies, including breast, endometrial, and specific ovarian cancers, due to prolonged estrogen exposure.^[65-71] Conversely, delayed menopause is associated with a lower risk of osteoporosis and fractures, possibly favorable vascular aging, and reduced cardiovascular risk.^[18,72-74]
43. **Induced menopause:** The cessation of menstruation follows bilateral oophorectomy or iatrogenic ablation of ovarian function.^[37,75]
44. **Transient ovarian failure:** In rare cases, ovarian function may recover after an apparent period of failure due to reversible suppression of the HPO axis or survival of residual follicles. This can occur after chemotherapy, radiotherapy, autoimmune oophoritis, or severe stress.^[43]
45. Recovery depends on age, type, and dose of gonadotoxic exposure and the residual follicular reserve. Even when menses resume, the ovarian reserve remains diminished, and the risk of EM persists (Grade C).^[75]
46. **Postmenopausal bleeding (PMB):** PMB is clinically defined as any vaginal bleeding occurring ≥12 months after the FMP in women not taking HRT (Grade A).^[76,77]
47. **Genitourinary Syndrome of Menopause (GSM)**^[78]: Refer to Section 2.
48. **Musculoskeletal health at menopause:** The proposed “musculoskeletal syndrome of menopause” highlights the frequent coexistence of arthralgia, sarcopenia, bone loss, and osteoarthritis during MT; however, it remains a conceptual construct, not an established diagnostic entity.^[79] Randomized evidence from the WHI shows that estrogen therapy modestly reduced joint pain and stiffness during active treatment. However, these benefits disappear or reverse after discontinuation, indicating symptomatic rather than structural relief.^[80,81]
49. **Staging system:** The staging system of a physiological event improves the comparability of strategies and facilitates clinical decision-making.
50. In 1996, Anklesaria published a simple clinical method for staging menopause to understand and deal with the problems of the transition phase and beyond.^[82] The IMS adopted Anklesaria’s staging of menopause after modification.^[83]
51. The STRAW aimed to classify women’s lives into three phases (2001): reproductive, MT, and postmenopause, based on the menstrual cycle, endocrine parameters, and ovarian reserve markers. However, this applied only to healthy women.^[48]
52. The 2011 STRAW + 10 provides greater clarity for menstrual patterns and applies to most women, except those with POI.^[42]

53. **Midlife:** Generally defined as the period between ages 40 and 64, although this term is not used in the scientific literature.
54. **Classifying older adults:** The World Health Organization uses age-based cutoff points to classify older adults and considers 60-plus years as elderly, 80-plus years as the oldest old, 100-plus years as centenarians, and 110-plus years as super-centenarians.^[37]
55. Medical professionals commonly use a four-tier system to classify adults over 45 years. Middle-aged: 45–64, young-old: 65–74, middle-old: 75–84, and the oldest-old: 85 years and above.^[84,85]
56. **Superagers:** Superagers are individuals aged 80 or older whose memory and cognitive performance match or exceed that of people 30 years younger, typically those in their 50s or early 60s.^[86–88]

DEMOGRAPHICS AND EPIDEMIOLOGY

57. The current population of India is 1,465,796,710 as of Sunday, October 19, 2025, based on Worldometer's elaboration of the latest United Nations data.^[89] This number is expected to increase to 1,679,589,259 by 2050.^[89]
58. The life expectancy of Indian women has increased from 40.4 years in 1950 to approximately 73.6 years in 2023. Although India's life expectancy has been increasing, it has generally remained below the global average.^[90–92]
59. According to the UN World Population Prospects 2024 Revision (medium variant), India had approximately 46 million women aged 45–49 years in 2024 and is projected to have approximately 57 million in 2050, compared with 30 million in 2011.^[89] Rising trends between 2005 and 2021 suggest an increasing burden of early ovarian aging in Indian women.^[93–95]
60. Population-based Indian data (NFHS 3–5) show that the prevalence of POI is 1.5%–3% of women, while EM affects 8%–16%, with the national mean age at menopause as 46 years.^[94] When surgical menopause is included, state-level data suggest an overall POI (natural + induced) prevalence of 8.7% in Telangana and 8.2% in Andhra Pradesh.^[95] Regional prevalence is higher in southern and eastern states and among women with lower education, rural residence, poor nutrition, or prior tubal sterilization.^[96,97]

Age at menopause: Determinants and health system implications

61. The estimated mean ANM in India is 46.6 years, approximately 4–5 years earlier than that in Caucasian women, whose mean ANM averages around 51 years.^[40,41,98,99]
62. ANM is largely genetically determined (50%); smoking advances its onset by approximately 1–2 years in a dose-dependent manner (Grade A).^[100,101] Undernutrition, reproductive factors (nulliparity, irregular cycles, or short cycles), and lower socioeconomic or educational status are consistently associated with earlier menopause in large cohort and pooled analyses (Grade B).^[102–104]

Medical challenges

63. From the available Indian data, it is hypothesized that ANM predisposes women to chronic health disorders a decade earlier than Caucasian women. This earlier onset is attributed to a combination of genetic predisposition, higher central adiposity at a lower BMI, lifestyle factors, and possibly lower disease awareness, delayed diagnosis, and early ANM in women.^[95,105,106]
64. **Multimorbidity:** It refers to having multiple chronic conditions, which also emerges earlier, with many women developing two or more chronic diseases by their mid-30s to mid-40s.^[107–109]
65. **NCDs:** South Asian women, including those in India, experience myocardial infarction approximately a decade earlier than European women, reflecting the earlier onset and higher lifetime burden of atherosclerotic CVD in this population.^[110] In India, the prevalence of CVD among adults is estimated at 11% (95% CI: 9%–12%), with markedly higher rates in urban and middle-aged women than in rural populations.^[111]
66. **Hypertension:** The overall prevalence of hypertension in India is currently estimated at 22.6% among adults aged ≥15 years, with a higher prevalence in urban (25%) than in rural areas (21.4%).^[112] Longitudinal data also indicate a rising trend, with rural prevalence increasing from approximately 34% to over 40% over a decade. Despite this, awareness, treatment, and control rates remain suboptimal, with less than one-third of individuals on treatment in most reports.^[113]
67. **T2DM** in India shows a prevalence of 6.1% in adults aged ≥15 years, rising to nearly 20% among those aged 45 plus, and evidence suggests that Indians develop T2DM on average over a decade earlier than Caucasian populations.^[114,115] The migrant population from the Indian subcontinent in the UK is known to be at a significantly higher risk of developing diabetes and CVD.^[116]
68. Indian data consistently demonstrate that fragility fractures, particularly hip fractures, occur approximately a decade earlier (mean age 65–71 years) than in Western populations (>75–80 years).^[117–120]
69. **Cancers:** Breast cancer occurs at younger ages in India: Indian hospital- and registry-based studies indicate that a large proportion of breast cancer cases in India occur in women aged 45–50 years, earlier than in the West, where the peak incidence tends to be in the 60–65 age group.^[121–124]

70. In India, the median age at cervical cancer diagnosis is 55 years (range: 45–60), which is comparable to or slightly older than that in the U.S., where the median age is 50 years. This conclusion is supported by India's Population-based Cancer Registers (PBCRs) and the U.S. Surveillance, Epidemiology, and End Results Program (SEER).^[125]
71. In the U.S., the median age at endometrial cancer diagnosis is 64 years,^[126] whereas Indian data indicate diagnosis in the mid-50s to early-60s. Nationwide PBCR-pooled figures are lacking, with available estimates from tertiary or regional registries.^[126,127]
72. Ovarian cancer in rural central India: In the PBCR of Central Rural India (2010–2016), the age-standardized incidence rate of ovarian cancer was 4.61 per 100,000, with the majority of Indian cases (most ovarian malignancies) occurring in women aged 41–50 years. The above suggests a somewhat earlier onset age than Western populations, where the median age at diagnosis is 63 years.^[128]
73. **Obesity:** The prevalence of obesity in India is 24%–28% among adults and is lower than that in Western populations ($\geq 40\%$) in the United States.^[20,129-131] However, related metabolic risks appear 5–10 years earlier than in Western populations and at lower BMI thresholds (≥ 23 for overweight and ≥ 25 for obesity), with NCDs such as T2DM and CVD emerging from the mid-30s onward.^[20,129-131]
74. **Health-seeking behavior:** Few Indian studies on health-seeking behavior have limitations of geographical bias, sample size, and lack of cost analysis; yet, the influence of sociocultural factors is well demonstrated. Rural women demonstrate substantially lower healthcare utilization rates (25%–30%) than urban women (42%–48%). This disparity is attributed to multiple factors, including distance to healthcare facilities, financial constraints, and cultural barriers.^[132]
75. **Policy:** Unlike the UK and Australia, India does not have a dedicated national policy on menopause. There is also limited government funding and policies for menopause-related research and program evaluations, gaps in the implementation of the National Program for Health Care of the Elderly, and a shortage of trained personnel in menopausal and geriatric medicine.^[133-135]
76. **Nongovernmental organizations**, such as the IMS, are leading the charge in championing midlife health. IMS publishes and conducts regular community workshops, wellness camps, and public awareness programs for consumers under the “Club 35 Plus.”^[136] The Federation of Obstetric and Gynecological Societies of India addresses this issue by focusing on the midlife committee.^[137]
77. **Social challenges:** In India, key social challenges include an increasing aging population, erosion of traditional family support structures, rise of nuclear families, rural-to-urban and international migration, and a growing burden of NCDs and degenerative diseases.^[138,139]
78. There is a need to retain and revive Eastern cultural strengths while integrating elements of the Scandinavian model, which emphasizes gender equity, preventive health, and state-supported well-being.^[140,141]

Menopause and the workplace

79. Estimates indicate that approximately 9–11.6 million women aged ≥ 40 years work in India, with roughly 3–3.6 million in the government sector and 6–8 million in the private sector. This highlights their significant yet under-recognized contribution to the national workforce.^[142,143] Barriers in the workforce include age–gender bias, career re-entry challenges, limited networking, work–life imbalance, and overrepresentation in informal, low-paid sectors, especially rural agriculture.^[144]
80. Survey data show that nearly 82% of Indian women believe menopause impacts workplace well-being and career, while 18%–26% work through symptoms or take time off without disclosure.^[145] A recent systematic review found that cognitive behavioral therapy, Raja Yoga, healthy lifestyle support, and menopause awareness interventions improve the well-being of menopausal women, and individuals or organizations can combine and tailor them to their needs.^[146,147]

Transgender individuals and menopause

81. As the first generation of transgender women who initiated gender-affirming hormone therapy (GAHT) in adulthood reaches midlife and beyond, unique clinical considerations emerge, particularly regarding menopause and optimal hormone management strategies for aging transgender individuals.^[148,149] Unlike cisgender women who experience natural menopause with declining estrogen levels, transgender women undergoing GAHT maintain exogenous hormone supplementation, creating distinct clinical scenarios that require specialized medical guidance.^[148-150]
82. **Living will:** A step toward dignified death: In India, the “right to die with dignity” concept has gained legal and ethical validation. In a landmark 2023 ruling, the Supreme Court of India revised the 2018 guidelines on end-of-life care and legalized the use of “living wills” or advance medical directives.^[151]

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SECTION 2

MENOPAUSE TRANSITION: “A WINDOW OF OPPORTUNITY”

1. Commonly recognized menopausal symptoms are thought to arise from neuroendocrine sensitivity to estrogen withdrawal, moderated and shaped by psychosocial stressors, coping capacity, and social determinants (Grade B).^[1,2]
2. The decline in estrogen at menopause shifts the autonomic nervous system toward sympathetic dominance and reduced parasympathetic activity, contributing beyond vasomotor symptoms (VMSs) to increased cardiometabolic risk, hypertension, sleep disorders, urinary dysfunction, and chronic pain (Grade B).^[3-5]
3. The menopause transition (MT), characterized by declining estrogen and relative androgen excess, is a well-established physiological process, and in genetically or metabolically predisposed women, it may accelerate the onset of noncommunicable diseases (NCDs), particularly cardiometabolic and musculoskeletal disorders (Grade B).^[6,7] It must be recognized that NCDs are multifactorial in origin; alterations in different types of endogenous or exogenous estrogen exposure are neither primary causes nor definitive remedies, but act as system-specific, additive modulators of disease risk and management.

TIMING MATTERS: THE CRITICAL PHASE FOR MENOPAUSE CARE

4. **Theories:** The timing hypothesis proposes that menopause hormone therapy (MHT) is most effective when initiated during the late MT or early postmenopausal years, whereas delayed initiation beyond this window may offer diminished benefit or even adverse cardiovascular outcomes.^[8]
5. This concept is supported by the Early versus Late Intervention Trial with Estradiol (ELITE) and builds upon Clarkson’s “timing hypothesis” derived from animal models and Hodis’ subsequent clinical translations.^[9-11]
6. Analyses of robust pre-Women’s Health Initiative (WHI) and reanalysis of WHI data supported by the Danish Osteoporosis Study (DOPS) reinforced the understanding of the “critical window of opportunity.”^[12-15]
7. Brinton’s “healthy cell bias” theory proposes that estrogen exerts protective and reparative effects only in metabolically healthy and functionally competent cells. In contrast, estrogen signaling may become ineffective or even detrimental in aged or metabolically compromised tissues.^[16,17]
8. The timing hypothesis and Brinton’s healthy cell bias theory explain the variability in MHT outcomes across cardiovascular, neurological, musculoskeletal, and metabolic domains.
9. These models emphasize that both the timing of initiation and the metabolic health of target tissues determine estrogen’s benefit–risk profile, refining the understanding of its context-dependent actions and guiding individualized therapeutic decisions.^[18-20]
10. **MHT:** Initiating MHT within 10 years of menopause or before the age of 60 years is associated with reduced all-cause mortality and cardiovascular events, supporting a “window of opportunity” effect; this benefit is not observed with later initiation (Grade A).^[21-24]
11. **Therapeutic lifestyle management (TLM):** Adopting healthy lifestyle measures can enhance the benefits of HT, mitigate metabolic, cardiovascular, and cognitive risks, and may extend the “window of opportunity” by maintaining cell health and reducing end-organ vulnerability (Grade B).^[25-28]
12. **Education:** Interventions, including structured therapeutic lifestyle programs, menopausal education, and coping skills training, significantly reduce symptom burden, improve quality of life (QOL), and enhance adaptation, serving as effective adjuncts to MHT (Grade B).^[29,30]

SYMPTOMS OF MENOPAUSE

13. Menopausal symptoms are multidimensional, spanning vasomotor, somatic, neuropsychiatric, and genitourinary domains as captured by validated tools such as the Menopause Rating Scale.^[31]
14. Strong hormone-linked evidence exists for VMS and genitourinary syndrome of menopause (GSM; Grade A),^[32] moderate for sleep and mood disturbances (Grade B).^[2,32-35]
15. Somatic complaints such as musculoskeletal pain, fatigue, and headache are common during the MT and may coincide with measurable declines in physical performance. Evidence from longitudinal cohorts such as SWAN suggests that these reflect the combined effects of estrogen deficiency, changes in body composition (BC), and psychosocial and metabolic stressors rather than hormonal change alone (Grade B).^[36-39]
16. **VMS:** Global data demonstrate that VMSs are most prevalent in Western and African populations, whereas somatic complaints such as joint and muscle pain predominate in Asian regions, including India, Nepal, and China. This cultural and biological heterogeneity underscores the need for context-specific assessment and management strategies in Indian women (Grade B).^[40]

17. There is a high overall prevalence of menopausal symptoms (70%–96.6%), with somatic complaints (mean: 73.7%) predominating, followed by psychological symptoms (63.0%), whereas urogenital symptoms were the less common (51.4%). The prevalence of VMSs showed wide regional variation (16.5%–88%), highlighting the need for standardized definitions and reporting criteria in future Indian studies.^[41-43]
18. A 2023 global meta-analysis reported a pooled prevalence of sleep problems of 51.6% (95% confidence interval: 44.6%–58.5%) among postmenopausal women. Indian data confirm that the incidence of sleep problems increases from 16% to 42% in premenopause to 39%–47% at perimenopause and 35%–60% in postmenopause.^[44]
19. VMSs include hot flushes, cold sweats, and night sweats, which may be accompanied by palpitations, anxiety, dizziness, headache, insomnia, or poor-quality sleep due to recurrent night sweats, leading to daytime fatigue.
20. VMS may impact the QOL by causing impaired concentration with mood swings, irritability, reduced work performance, anxiety, and embarrassment in social/professional settings and impaired sexual well-being if sweating/hot flushes interrupt intimacy.^[45,46]
21. Typically, VMSs begin in the late MT, coincide with rapid estradiol decline and follicle-stimulating hormone (FSH) surge, may persist for 7–10 years on average, and generally peak and reach their maximum intensity during the first 2 years postmenopause.^[47,48]
22. Recent pooled and cohort studies report that VMSs in midlife women are strongly associated with tobacco use, anxiety, menopause stage, and obesity.^[47,49]
23. Moderate evidence supports the association with poor cardiorespiratory fitness, overweight, high fasting glucose, depressive symptoms, lower education, and African American ethnicity (Grade B).^[47,50-52]
24. Genetic variants, particularly in the *TACR3* gene, are modestly associated with VMSs in midlife women, with reported odds ratios of around 0.78–1.3, suggesting a small but significant contribution to symptom risk.^[53]
25. Grading of VMS is important to plan management, follow-up, and research. The grades of hot flushes are classified as mild, feeling of heat without sweating; moderate, feeling of heat with sweating; and severe, feeling of heat with sweating and palpitation that disrupts usual activity.^[54]
26. We need to exclude other causes of flushing before planning treatment.^[55-58]
27. MHT: The most effective treatment for VMS is MHT (Grade A),^[59,60] and low-dose combined oral contraceptives (COCs) may be used when contraception is needed (Grade C).^[61-63] Other options are TLM, complementary and alternative therapies, cognitive behavioral therapy (CBT), hypnosis, and nonhormonal prescription therapies. Refer to Section 6.
28. **Somatic symptoms:** Begin in the early-to-late transition, paralleling fluctuating estrogen and psychosocial stress, and may persist into the early postmenopausal years; musculoskeletal pain can continue chronically due to sarcopenia, obesity, and inflammation of aging.^[36,37,64]
29. Somatic symptoms are to be evaluated and managed when they are frequent, persistent, or sufficiently distressing to interfere with activities of daily living. Before attributing such symptoms to menopause, clinicians should exclude alternative medical causes such as Vitamin D deficiency, anemia, thyroid dysfunction, autoimmune disorders, or osteoarthritis.
30. Management: First-line management includes TLM and supportive measures such as exercise, sleep hygiene, balanced diet, weight management, analgesics, and physiotherapy for musculoskeletal symptoms.^[65-68]
31. MHT may benefit women experiencing both vasomotor and somatic complaints; however, its effectiveness for isolated musculoskeletal or somatic symptoms is limited and inconsistent. The benefit appears modest, likely mediated by improved sleep, mood, and systemic inflammation rather than direct musculoskeletal effects.
32. **Psychological symptoms** include changes in mood, anxiety, irritability, emotional lability, sleep disturbance, and depressive features.
33. Mood and anxiety symptoms typically follow a bell-shaped trajectory: they begin to rise in the early perimenopausal stage, peak during the late transition, and tend to improve within 1 or 2 years after the final menstrual period (FMP).
34. These changes are influenced by fluctuating estrogen levels, psychosocial stressors, and individual coping capacity. Sleep disturbance and VMSs often exacerbate mood instability, while a prior history of depression or anxiety increases vulnerability.^[69]
35. **Cognitive complaints** commonly described as “brain fog,” encompass difficulties with attention, memory retrieval for names, words, or numbers, and concentration rather than objective cognitive decline.^[70]
36. Importantly, brain fog is transient, nonprogressive, and reversible, distinguishing it from pathological cognitive disorders such as mild cognitive impairment or dementia, which are characterized by progressive neurodegeneration and sustained cognitive loss.^[71]
37. The etiology is multifactorial, involving the hormonal changes of the MT (especially estrogen decline), fragmented or poor-quality sleep, mood disturbances (anxiety/depression), vasomotor instability (hot flashes/night sweats), and psychosocial stressors (Grade B).^[72-74]

38. Longitudinal studies, including the SWAN, demonstrate that cognitive performance may decline during perimenopause, particularly in verbal memory and processing speed, with gradual recovery within 1–2 years after menopause in early postmenopause (Grade A).^[19,74,75]
39. Management: Screen for cognitive impairment using validated tools like short-form Montreal Cognitive Assessment, as needed.
40. Correct modifiable factors, including sleep, mood, vascular health, and social determinants, by lifestyle measures, including physical activity, cognitive training, adequate sleep, and vasomotor and mood symptoms management, to support mental health (Grade B).^[76-78]
41. Current evidence does not support the routine use of MHT solely for the prevention of cognitive decline or dementia (Grade A).^[19,79,80] MHT is safe for symptom management in healthy, recently postmenopausal women, but does not enhance or preserve cognition.^[81] MHT initiated after 65 years may increase the risk of probable dementia.^[82,83]
42. **Depression:** increased during the MT, when estradiol variability is most significant and remained elevated in the early postmenopause.^[34,84-86]
43. Robust longitudinal and randomized trial evidence shows an increased risk of new-onset or recurrent depressive symptoms during the transition, independent of age or prior psychiatric history. The risk is most significant in the late reproductive and early MT phases, coinciding with unstable estradiol levels and irregular cycles.^[69]
44. Precipitating factors include VMS, disturbed sleep, and psychosocial stressors such as caregiving, occupational pressures, and midlife role transitions. These factors interact with fluctuating estrogen and serotonin dopamine modulation, further predisposing to mood dysregulation.^[87]
45. Mood symptoms are typically transient or moderate. However, they need treatment if symptoms persist beyond 2–4 weeks, impair daily functioning or interpersonal relationships, or exacerbate underlying anxiety or depressive disorders, and a primary major depressive disorder is ruled out.^[85]
46. Management: Emphasize TLM, counseling, stress reduction techniques (Grade B), and CBT (Grade A).^[76,88]
47. Antidepressants: Selective serotonin reuptake inhibitors (SSRIs) and serotonin–norepinephrine reuptake inhibitors (SNRIs) are effective and well-tolerated for moderate-to-severe or persistent depressive disorders in midlife women. They are also helpful for coexisting VMS and sleep disturbance and enhance the outcomes when given along with MHT. Refer to Section 6.^[89,90]
48. MHT: Judicious, individualized MHT may be considered when mood symptoms are temporally linked to estrogen fluctuation and other contraindications are excluded. The best response is seen in women at early MT, where estrogen stabilization alleviates both vasomotor and affective symptoms. Treatment response becomes less predictable when initiated more than 5 years after menopause, likely reflecting long-standing neural adaptation to hypoestrogenism.^[91,92]
49. **Sleep disorders:** follow a plateau–peak pattern, often beginning before the onset of VMSs, reaching maximum intensity around the FMP, and showing partial resolution in the later postmenopausal years. However, chronic insomnia may persist in predisposed women.^[93,94]
50. These sleep problems are multifactorial in origin, arising from the combined effects of VMSs, mood and anxiety disorders, sleep-disordered breathing, circadian rhythm changes related to aging, and coexisting sleep conditions such as obstructive sleep apnea (OSA) and restless legs syndrome (RLS).^[95]
51. Strong longitudinal evidence, including the SWAN, demonstrates that the MT is independently associated with increased risk of sleep complaints (Grade B).^[94]
52. Sleep deprivation contributes to impaired mood, reduced work performance, increased musculoskeletal pain, and a higher risk of cardiovascular disease (CVD).^[96]
53. Sleep health should be routinely evaluated in menopausal women. Where indicated, validated sleep questionnaires or sleep diaries should be used.^[97]
54. Lifestyle factors such as caffeine, alcohol intake, irregular schedules, excessive gadget use, social stressors, and medical comorbidities should be identified and corrected (Grade C).^[97,98]
55. When insomnia is present, secondary causes, including psychiatric illness, thyroid dysfunction, chronic pain, and medication effects, must be excluded and appropriately managed. Diagnosis and treatment of primary sleep disorders (OSA and RLS) are strongly recommended, as untreated comorbid sleep disorders exacerbate overall health risks and QOL impairment (Grade B).^[98,99]
56. Neurological or respiratory disorders suspected on history or examination should prompt further investigations and specialist referral (Grade B).^[96,97,100]
57. Sleep hygiene measures – Refer to Section 6.

58. CBT: According to the American-European clinical practice guidelines, CBT for insomnia is the first-line treatment for chronic insomnia and should also be considered in menopausal women (Grade A).^[88,100,101]
59. Estrogens: All standard formulations are effective; however, transdermal preparations may be preferred for their ability to maintain stable serum estrogen levels and improve sleep quality among women with significant VMS (Grade B).^[92,102] Micronized progesterone may have an additional benefit. MHT is not indicated as a primary therapy for insomnia (Grade B).^[103]
60. Nonhormonal agents: SSRIs, SNRIs, and gabapentin (preferred) have demonstrated moderate efficacy in improving sleep and reducing nocturnal vasomotor events (Grade B).^[89,90] Refer to Section 6.
61. Pharmacologic hypnotic therapy including benzodiazepines such as lorazepam (0.5–2 mg) or diazepam (2–5 mg) and nonbenzodiazepine GABA-A receptor agonists such as zolpidem (5–10 mg) should be reserved for short-term treatment of severe insomnia that is unresponsive to behavioral and nonhormonal measures. Treatment should generally be limited to 2–4 weeks and not exceed 3 months without specialist review. Therapy should employ the lowest effective dose, with regular reassessment, and consider intermittent or alternate-night dosing for maintenance, in order to minimize dependence, tolerance, and cognitive adverse effects (Grade A).^[104,105]
62. Dual orexin receptor antagonists: Lemborexant, daridorexant, and suvorexant have favorable safety profiles and are potential future options for insomnia in midlife women; they can be continued long term with monitoring (Grade B).^[106]
63. Melatonin and melatonin receptor agonists, such as ramelteon, may be considered for up to 3–6 months in selected women, with a structured follow-up every 3–6 months. Long-term, open-ended use >12 months lacks robust data and should only continue with periodic clinical review (Grade B).^[107]
64. Current evidence for herbal or alternative remedies remains insufficient. Mind–body therapies such as yoga and tai chi have some evidence but need further rigorous studies to prove their effectiveness (Grade D).^[101,108]
65. **GSM:** Previously known as vaginal atrophy, vulvovaginal atrophy (VVA), urogenital atrophy, or atrophic vaginitis, is defined as a collection of symptoms and signs caused by hypoestrogenic changes to the labia majora/minora, clitoris, vestibule/introitus, vagina, urethra, and bladder that occur in menopausal women. The syndrome may include, but is not limited to, genital symptoms of dryness, burning, and irritation; sexual symptoms of lack of lubrication, discomfort or pain, and impaired function; and urinary symptoms of urgency, frequency, dysuria, and recurrent urinary tract infections (UTIs).^[109]
66. GSM is chronic, progressive, and persistent unless treated and increases with years since menopause.^[109] Indian studies report GSM prevalence ranging from 31% to 79%, with vaginal dryness and lower urinary tract symptoms most frequent, increasing significantly across menopausal stages.^[110–112]
67. Although GSM significantly affects QOL, many women do not volunteer these complaints; therefore, clinicians should actively ask targeted, suggestive questions during history-taking.^[113] Symptomatic women may present with any of the above symptoms, which bother them (Grade A).^[114]
68. Physical signs of GSM are variable and include reduced vulval fat, reduced vaginal rugae, and blood flow, leading to a pale appearance; a change from a normal moderately acidic range (pH: 3.5–5.0) to a neutral range (pH: 6.0–8.0) in the vaginal pH (measured by vaginal pH applicator strips); there is a shift in the Vaginal Maturation Index (VMI) to parabasal cells.^[115,116]
69. Diagnosis: No universally accepted diagnostic criteria exist for GSM. For research purposes, the U.S. Food and Drug Administration mandates a standardized assessment using three core parameters: vaginal pH measurement, VMI, and identification of the patient's most bothersome symptom. However, routine clinical practice often lacks access to pH measurement tools or VMI assessment capabilities, necessitating a practical minimum diagnostic approach.^[117]
70. Physical examination has a strong clinical rationale and is essential for excluding alternative diagnoses, individualizing treatment, and monitoring therapeutic response (Grade B).^[110]
71. Based on available evidence, we suggest the following criteria for diagnosing GSM:
 - Criterion 1: At least two genital or urinary bothersome symptoms (rate their severity on a four-point scale) after excluding nonestrogen deficiency causes.^[110]
 - Criterion 2: One symptom accompanied by vaginal pH of >5 and/or Vaginal Health Index (VHI) score ≤15.^[118]
72. Exclude other causes, particularly infectious etiologies, vulvar dermatitis, vulvovaginal lichen planus and sclerosis, malignancy, and other etiologies of recurrent UTI.^[119,120]
73. Management: The management of GSM is fundamentally patient-centered, aiming to relieve symptoms and, where possible, restore urogenital physiology. Clinical signs of urogenital atrophy often do not correlate directly with the symptoms reported by women, underscoring the need for individualized, need-based management, shared decision-making, and regular reassessment. The cornerstone of management is local estrogen therapy (LET).

74. It is essential to counsel patients that GSM is a chronic and progressive condition; unlike VMSs, it does not resolve spontaneously and typically requires ongoing, long-term treatment strategies (Grade B).^[121,122]
75. Indications of LET in women with symptoms of GSM: LET is the most effective treatment for GSM.^[123,124] It increases the blood flow and peripheral neuronal function, restores the VMI, and improves the VHI score. The details of LET are given below.
76. Systemic HT may cause urinary incontinence (UI) or worsen existing urinary symptoms.^[125] Systemic estrogen therapy, prescribed primarily for VMS, also helps prevent or reduce the progression of GSM in many women.^[126] However, some women on systemic HT may continue to experience urogenital symptoms and require additional LET for optimal control (Grade A).^[127,128]
77. **Sexual function:** LET improves sexual function in postmenopausal women with GSM.^[126]
78. Managing dyspareunia at penetration in women with GSM: apply a pea-sized amount of estradiol cream directly to the vulvar vestibule, combined with the use of a precoital silicone-based lubricant (Grade B).^[129]
79. **Recurrent UTI:** LET is recommended to prevent recurrent UTI in postmenopausal women (Grade A).^[123,124] Systemic estrogen therapy is not recommended (Grade B).^[130-134]
80. Nonhormonal adjuncts, including cranberry extract, D-mannose (where available), and probiotics, may be considered before or alongside antibiotic therapy in uncomplicated recurrent UTI (Grade C).^[135,136] We do not recommend routine antibiotic treatment for asymptomatic bacteriuria in postmenopausal women (Grade A).^[136-138]
81. **Urge incontinence:** LET is recommended for postmenopausal women with urge UI or overactive bladder symptoms (OABs) associated with GSM (Grade A).^[123,124] In postmenopausal women with idiopathic OAB or urge UI without GSM, evidence supports its use only as an adjunct to standard pharmacological or behavioral therapy, rather than as primary treatment (Grade B).^[139-141]
82. **Mixed UI:** LET may be used as adjunctive therapy for mixed UI, particularly when GSM is present (Grade B). Systemic HT is not recommended for UI.^[125,142]
83. **Pelvic organ prolapse:** In women with pelvic organ prolapse or UI, LET has uncertain benefit as a primary treatment, but it is recommended to prevent vaginal abrasions in those using pessaries (Grade B).^[143,144]
84. Indications of LET in women without symptoms of GSM: Prior to vulvovaginal surgery, short preoperative courses improve vaginal vascularity and epithelial thickness, thereby facilitating surgical dissection and wound healing in vulvovaginal procedures (Grade B).^[145,146]
85. Before performing a Pap smear in postmenopausal women with clinical atrophy or prior unsatisfactory/abnormal results, a short course of vaginal estrogen is reasonable to optimize epithelial maturity and specimen quality (Grade B).^[147] This helps in false-positive or indeterminate cytologic interpretations that may arise from atrophic changes secondary to GSM, thereby preventing misdiagnosis of dysplasia.^[147]
86. Long-term sequelae: Evidence indicates that untreated and worsening GSM leads to long-term sequelae like labial agglutination and introital narrowing which may need surgical correction along with LET.^[148,149]
87. Follow-up: Clinical effectiveness is typically observed after 2 or more weeks, with maximal symptomatic improvement evident after 4–12 weeks of therapy. Follow-up visits are scheduled after 1 and 3 months. If, in 3 months, there is no improvement in signs and symptoms, stop the treatment and look for other causes.^[126]

LOCAL ESTROGEN THERAPY IN GENITOURINARY SYNDROME OF MENOPAUSE: EVIDENCE, DOSING STRATEGIES, AND CLINICAL CONSIDERATIONS

88. LET includes a range of vaginally administered estrogen products approved with the indication to treat GSM.^[150]
89. Comparative trials have also demonstrated that vaginal estrogen achieves a superior local effect with lower systemic absorption than oral preparations.^[126]
90. A Cochrane systematic review confirmed that all licensed local estrogen preparations are equally effective in improving the symptoms and signs of VVA compared with placebo, with no significant difference in the overall efficacy among formulations (Grade A).^[123] However, 17 β -estradiol appears to provide greater improvement in patient-reported symptoms. In contrast, conjugated equine estrogen (CEE) produces more marked cytological changes and a slightly higher increase in serum estradiol levels,^[151] with no clinically meaningful differences in overall efficacy. Estriol (E3) is a low-potency estrogen that is not converted to 17 β estradiol (E2) and has modest efficacy (Grade B).^[152]
91. Doses: The various doses of LET are shown in Table 1.
92. The doses for LET include CEEs 0.3–1.25 mg/day, estradiol 25 μ g/day, and estriol cream 0.5 mg/day, depending on the severity of GSM (Grade A).^[153]
93. A randomized study showed that ultra-low-dose E2 (4–10 μ g) significantly improved vaginal maturation, restored vaginal pH, and reduced symptoms compared with placebo (Grade B).^[154]

Table 1: Doses of local estrogen therapy

Component	Ultra-low-dose	Low-dose	Standard-dose
Estradiol	4–10 µg	≤50 µg	>100 µg
Conjugated estrogens		≤0.3 mg	0.625–1.25 mg
Estriol	0.03 mg	0.5 mg	

94. Regimen: The recommended regimen for LET consists of daily application to the lower vagina for 2–4 weeks, followed by a maintenance schedule of two to three applications per week for 2–6 months (Grade A).^[150]
95. Absolute contraindications: are undiagnosed vaginal bleeding and active, untreated estrogen-sensitive malignancy (Grade A).^[155-157]
96. Avoid: Hypersensitivity reactions to menopausal estrogen therapy are infrequent, with most documented cases including contact dermatitis, cyclical vulvitis, and drug eruptions.^[158,159] Life-threatening events, including anaphylaxis, are infrequent and are primarily described in isolated case reports or hormone allergy reviews.^[160]
97. Relative contraindications: Evidence supports a risk-stratified approach, with breast cancer survivors requiring mandatory oncology consultation, while patients with CVD or venous thromboembolism (VTE) history need individualized assessment (Grade B/C).^[161-165]
98. General principles of LET use: Treatment should be started early to prevent irreversible atrophic changes (Grade B).^[165-167]
99. Clinical consensus supports indefinite use when needed, based on longitudinal observational studies. However, robust safety data beyond 1 year of continuous use are limited for all available vaginal preparations (Grade B).^[155,167-171]
100. A systematic review found no evidence of endometrial proliferation after 6–24 months of low-dose LET use (Grade A).^[161] Transvaginal ultrasonography (TVS) and endometrial biopsy (EB) (Grade A) should be used to investigate unscheduled bleeding.^[167] Progesterone supplement for endometrial protection is not needed along with the use of LET (Grade A).^[165,168]

OTHER TREATMENT MODALITIES FOR GENITOURINARY SYNDROME OF MENOPAUSE

101. Tibolone: Significantly improved vaginal atrophy and cytology in comparison with placebo.^[172]
102. Selective estrogen receptor modulators (SERMs): Ospemifene is currently the only approved oral treatment for GSM, with agonist activity on the vaginal epithelium and antagonist activity in breast and endometrial tissue (Grade A).^[173,174]
103. Significantly, unlike other SERMs, ospemifene has not been associated with an increased risk of breast or endometrial cancer (EC), and available safety data suggest no excess risk of VTE.^[175] Ospemifene may, therefore, be considered in women with a history of breast or EC, provided active treatment is complete and decisions are individualized.^[176,177]
104. Postmenopausal women with GSM reported higher satisfaction and adherence for ospemifene compared to vaginal estrogen therapy, besides a lower number of missed doses in the treatment of moderate to severe GSM.^[178]
105. Dehydroepiandrosterone (DHEA): is administered intravaginally once daily at bedtime. Within the vaginal mucosa, DHEA is locally converted into both estrogens and androgens (testosterone, androstenedione, and dihydrotestosterone), thereby improving epithelial maturation, vaginal pH, lubrication, and sexual function (Grade A).^[179]
106. Lifestyle modifications such as smoking cessation, regular sexual activity, and pelvic floor exercises may help maintain urogenital health and reduce GSM severity (Grade B).^[180]
107. Nonhormonal options are for women with mild GSM and/or willing to avoid HT or in high-risk individuals with a history of hormone-sensitive malignancy, such as breast cancer or EC.
108. Nonhormonal treatments, including vaginal moisturizers, lubricants, hyaluronic acid preparations, physical therapy, and energy-based therapies like laser, have demonstrated varying degrees of efficacy in symptom relief and QOL improvement.^[181]
109. Vaginal lubricants can be recommended for the subjective symptom improvement of dyspareunia (Grade B).^[182,183] Vaginal moisturizers can be offered for vaginal dryness and dyspareunia (Grade B).^[184] Use vaginal lubricants, moisturizers, and hygiene products with physiologic pH and low osmolality (≤380 mOsm/kg); avoid high-osmolality products that exceed World Health Organization (WHO) recommendations, as they may irritate the epithelium and increase the infection risk (Grade B).^[185]
110. Intravaginal phytoestrogens (isoflavone/genistein gels) may be considered a short-term, effective alternative to vaginal estrogen for GSM symptom relief (Grade B).^[186-188]
111. Laser therapy: High-quality randomized trials are still required to provide definitive guidance on the efficacy and safety of vaginal laser therapy for various gynecological conditions (Grade C).^[189-193]
112. Conclusion on management of GSM: LET, vaginal DHEA, vaginal moisturizers, and oral ospemifene have demonstrated efficacy in improving symptoms of GSM (Grade A).^[193]

113. For women with contraindications to regular dose LET, effective nonhormonal alternatives, including hyaluronic acid and ultra-low-dose local estriol, are safe and beneficial (Grade B).^[194,195]
114. Current evidence does not support the efficacy of energy-based therapies, vaginal or systemic testosterone, vaginal oxytocin, or oral SERMs such as raloxifene or bazedoxifene for the treatment of GSM (Grade C/D).^[193]

URINARY INCONTINENCE

115. UI, an involuntary urine leakage, affects >50% of postmenopausal women and is a significant social problem.
116. There are five types of UI: stress, urge, mixed, overflow, and functional incontinence. Urge and mixed incontinence predominate in the older population.^[196-198]
117. Diagnosis: Initial evaluation and diagnosis of a woman with UI can be based on symptoms alone to initiate conservative treatment.^[198]
118. Urodynamics is not routinely recommended and is reserved for complicated UI requiring surgery to rule out mixed causes of voiding dysfunction (Grade A).^[140,199,200]
119. Routine renal/bladder imaging or cystoscopy is not indicated in the initial evaluation of uncomplicated UI or overactive bladder. These investigations should be performed only in refractory, recurrent, or complex cases (Grade A).^[201-203]
120. Management: Pelvic floor muscle training (PFMT), whether supervised or home-based, is recommended as first-line therapy for stress UI (SUI) and mixed incontinence (Grade B).^[204,205]
121. All types of pelvic floor therapy are effective for SUI. At this point, no single therapy is superior to another (Grade B).^[204]
122. Available interventions are PFMT, vaginal cone, biofeedback, electrical muscle stimulation, radiofrequency, and electroacupuncture.^[204]

SEXUAL DYSFUNCTION

123. Sexual dysfunction affects 40%–60% of midlife women globally and is even more prevalent in India (66%–80%) (Grade B), with common issues being low desire, dyspareunia, and arousal difficulties.^[206]
124. Cultural factors, stigma, and lack of awareness further contribute to underreporting in India.^[207,208]
125. Sexual dysfunction is multifactorial and needs to be addressed accordingly. The biological factors are hypoestrogenism, chronic disease, and iatrogenic effects. The psychological factors are depression, anxiety, and body image concerns. Relationship factors are partner dysfunction, poor intimacy, and sociocultural barriers: myths, stigma, and low prioritization of sexual well-being (Grade B).^[209-211]
126. Clinicians can play a pivotal role in addressing sexual health during midlife consultations by creating a safe, confidential, and nonjudgmental environment, normalizing discussion of sexuality, using open-ended questions, applying validated tools such as the Female Sexual Function Index (Refer to section 6), screening for medical and psychosocial comorbidities, and involving the partner when appropriate to enhance communication and shared decision-making.^[211]
127. Management of sexual dysfunction in midlife women requires a multimodal approach.
128. Lifestyle and nonpharmacological strategies (Grade B), including regular physical activity, pelvic floor exercises, yoga, stress management, use of physiologic lubricants/moisturizers, and psychosocial interventions such as CBT, mindfulness, and sex therapy, improve body image, intimacy, and relationship satisfaction.^[88,212]
129. Pharmacological therapies (Grade A) include local vaginal estrogen, vaginal DHEA, and oral ospemifene for GSM, while systemic MHT may be considered when vasomotor or bone indications coexist (Grade A).^[213,214]
130. Tibolone: According to the 2023 Cochrane review, evidence for tibolone's effect on sexual function is of low certainty and does not demonstrate a significant benefit over placebo or standard MHT (Grade C).^[214]
131. Hypoactive sexual desire disorder (HSDD): HSDD, a non-GSM sexual dysfunction, requires a holistic approach. Management involves identification and treatment of contributory psychological, relational, and medical factors.
132. Pharmacological options may include bupropion, flibanserin, or selected SSRIs/SNRIs as adjuncts (Grade B).^[215-217]

BODY COMPOSITION (BC), SKIN, AND METABOLIC CHANGES

133. **BC:** Overall, midlife weight and adiposity gain are driven mainly by aging and lifestyle rather than menopause (Grade C).^[218,219]
134. However, the MT independently promotes adverse fat redistribution, with increased visceral and pericardial/epicardial fat beyond aging effects, contributing to metabolic syndrome and greater cardiometabolic risk after menopause.^[220,221]
135. During the MT, estrogen deficiency accelerates bone loss (Grade A)^[222] and reduces muscle mass and strength (Grade B),^[223] while aging further impairs bone quality and muscle regeneration. Together, these processes especially in POI and early menopause increase the risk of osteoporosis, sarcopenia, and frailty.^[224] Early lifestyle measures and, where appropriate, therapeutic interventions are essential to preserve bone and muscle health in midlife women and prevent adiposity (Grade B).^[225-227]
136. **Skin changes:** Estrogen deficiency during and after the MT reduces collagen content in both skin and bone.^[228] Loss of cutaneous collagen accelerates skin aging, wrinkling, and decreased elasticity (Grade B).^[229] At the same time, hormonal

imbalance with relative androgen excess after menopause may contribute to frontal balding and hirsutism in some women (Grade B).^[230]

137. **Metabolic changes:** Refer to Section 3.

FERTILITY

138. Fertility: In women aged >40 years who fail to conceive after 1–2 cycles of controlled ovarian stimulation, *in vitro* fertilization (IVF) should be considered early, as success with conventional stimulation is poor (Grade B).^[231,232]
139. The only effective treatment for ovarian aging with markedly reduced reserve is oocyte (donor egg) IVF, which yields pregnancy rates far superior to stimulation with autologous oocytes (Grade A).^[233,234]
140. Counsel women aged ≥40 years about the exponential increase in chromosomal abnormalities, miscarriage, and mosaic embryos; offer individualized Preimplantation Genetic Testing for Aneuploidy (PGT-A) counseling and interpretation in collaboration with reproductive specialists (Grade A).^[235,236]
141. Preconception counseling should emphasize weight optimization, control of hypertension, diabetes, thyroid disease, and identification of obstetric risks. Women aged >40 years require individualized counseling regarding maternal and perinatal complications (Grade B).^[237,238]
142. Fertility preservation should be offered to women at risk of premature or treatment-induced menopause. Oocyte and embryo cryopreservation using vitrification is an established, effective, and safe technique (Grade A).^[239,240]
143. Elective oocyte freezing may be considered before the age of 38 years after individualized counseling (Grade B).^[241,242]

CONTRACEPTION

144. Contraceptive needs and choices during the MT should be individualized, taking into account a woman's contraceptive requirements, menopausal symptoms, abnormal uterine bleeding (AUB), and presence or risk of comorbidities.^[243,244]
145. Pregnancies in older women (>35 years) are associated with higher maternal and perinatal morbidity and mortality. Across all age groups, the annual risk of death associated with not using any method of contraception is substantially higher than the risk associated with using any contraceptive method.^[245-247]
146. Reproductive autonomy is supported by shared decision-making between women and healthcare providers, using a person-centered approach to contraceptive choice (Grade A).^[248]
147. Sterilization is a highly effective permanent method. Female tubal sterilization carries a very low mortality risk in well-controlled settings (1–2/100,000).^[249]
148. Patients who are willing for a permanent method of contraception and who are at high risk for ovarian cancer may be counseled for bilateral salpingectomy at the time of permanent sterilization with the understanding that there is no scope for reversal (Grade C).^[250-252]
149. Oral contraceptive pills (OCPs) are practical, easy to use, and reversible in healthy women. Low-dose OCPs have noncontraceptive health benefits with an increased safety profile (Grade A).^[62,253-255]
150. The strength of association of increased breast cancer with OCP use is low (Grade B).^[256] Estrogen-containing OCPs increase the risk of VTE by 2–4 times.^[257]
151. For women aged over 35 years, careful personal and family history, accurate measurement of blood pressure (BP), breast examination, screening for diabetes, and lipid profile should be performed.^[243,254,258]
152. For women aged 45–50 years and on combined hormonal contraception (CHC), if menopausal symptoms are present, consider transitioning to MHT for symptom relief. We recommend clinical age-based switching (without biomarker tests) due to increased risks of VTE with ethinyl estradiol (EE) (Grade B).^[259-261]
153. For ongoing contraceptive needs, switch to a progestogen-only contraception (POP) method, pill, levonorgestrel-releasing intrauterine system (LNG-IUS), implant or a nonhormonal method like barrier methods, copper intrauterine contraceptive device (IUCD), or sterilization (Grade A).^[262]
154. In women aged 50 years or older who are using progestogen-only pills (POP) and have no periods, menopause can be supported by two blood tests showing FSH levels ≥30 IU/L, taken at least 6 weeks apart.^[263]
155. Diagnosis of menopause for women aged ≥50 years using COC: Discontinue hormones for 6 weeks, then measure serum FSH twice, 6 weeks apart; menopause is diagnosed if both FSH values are >35–40 IU/L (Grade C).^[264,265] FSH/E2 testing when on CHCs is unreliable, since they suppress gonadotropins and estradiol (Grade A).^[264,265]
156. For major surgery with prolonged immobilization (>30 min), COCs should ideally be discontinued 4–6 weeks before surgery to reduce the risk of VTE. If continued, appropriate perioperative VTE prophylaxis should be provided (Grade B).^[243]
157. For minor or day-care surgery without prolonged immobilization, COCs may be safely continued (Grade A).^[266,267]

158. Long-acting reversible contraception (LARC): Preinsertion assessment for IUCD insertion in a healthy woman, including body mass index, BP, cervical inspection, and bimanual examination, is a prerequisite. An opportunistic breast examination before initiating hormone-based LARC is advisable.
159. Management of irregular bleeding on LARC: Treatment may be repeated as needed. Options include antifibrinolytic agents (tranexamic acid), 5 days nonsteroidal anti-inflammatory drugs (NSAIDs) (e.g., mefenamic acid and celecoxib), 5–7 days, hormonal treatment (20–30 µg EE COCs or estrogen), short course. SERMs (e.g., tamoxifen 10 mg twice daily, 7–10 days).^[243,259,268-272]
160. Progesterone-only contraceptives are ideal for women with a history of VTE and gallstones. Limitations are erratic and scanty periods. LNG-IUS, apart from being used as a contraception, is an effective HT for heavy menstrual bleeding (Grade A)^[259,273,274] and for treating bleeding disturbances associated with endometrial hyperplasia (EH) (Grade B).^[259,273,274]
161. Copper IUCD is a highly effective long-acting reversible contraceptive. However, it may be associated with increased menstrual bleeding and dysmenorrhea, particularly in the initial months after insertion (Grade B).^[275-277]
162. Emergency contraception is an effective backup method, but it is less effective and less consistent than ongoing contraceptive use.^[259]
163. The copper IUCD when inserted within 5 days of unprotected intercourse, has a failure rate <0.1% and is the most effective method of emergency contraception, while also providing ongoing protection for up to 10 years (Grade A).^[259,278]

ABNORMAL UTERINE BLEEDING

164. PALM-COEIN: Use of the FIGO AUB System 2, derived from the PALM–COEIN classification, is recommended for the standardized categorization of AUB across reproductive and perimenopausal years (Grade A).^[279]
165. The most common etiologies of AUB include anovulatory bleeding (43%), leiomyomas (15%), endometrial polyps (15%), endometrial hyperplasia (EH) (20%–30%), endometrial intraepithelial neoplasia (EIN) (3%–5%), and endometrial carcinoma (4%–6%; Grade B).^[280,281]
166. Investigations: Endometrial biopsy (EB) is recommended in all women aged ≥40 years presenting with AUB. Given the high prevalence of EH (25%) and carcinoma (4%–6%) among Indian women aged ≥40 years presenting with AUB, routine EB is justified in this group. The diagnostic yield (one premalignant lesion per four biopsies; one carcinoma per 20–25 biopsies) meets the threshold for cost-effective evaluation in symptomatic population (Grade B).^[282-285]
167. EB is recommended in younger women (<40 years) with persistent symptoms, failed medical therapy, or risk factors for unopposed estrogen exposure, obesity, polycystic ovary syndrome (PCOS), and diabetes (Grade C).^[286]
168. Transvaginal ultrasonography (TVS) is the first-line investigation for perimenopausal AUB, providing assessment of the uterus, adnexa, and pelvic pathology.^[287]
169. When endometrial visualization is suboptimal or a suspected focal lesion is present, saline infusion sonography (SIS) improves diagnostic accuracy (Grade A).^[287-290]
170. If TVS shows no structural lesion, outpatient suction sampling (Pipelle biopsy) is performed as the first-line diagnostic test. It is a safe, quick, cost-effective, minimally invasive procedure with high diagnostic accuracy, providing >90% sensitivity and 100% specificity for detecting atypical EH or endometrial carcinoma (Grade A).^[291-293]
171. Inadequate or nondiagnostic Pipelle samples (10%–15%) should be followed by hysteroscopy-guided EB for direct visualization and targeted sampling (Grade A).^[291,294]
172. Hysteroscopy is the gold standard for diagnosing and treating intrauterine structural lesions.^[295] If ultrasound identifies a focal or structural abnormality, hysteroscopy should be the first-line diagnostic and therapeutic procedure (Grade A).^[296,297]
173. When hysteroscopy is unavailable, Pipelle EB, dilatation and curettage (D and C) are acceptable alternatives for endometrial sampling. These methods provide adequate diagnostic yield for hyperplasia and carcinoma, though they are less sensitive for focal lesions (Grade B).^[298]
174. A benign or insufficient sample does not reliably exclude (pre) cancer or focal pathology, particularly in high-risk women, those aged ≥45 years, with persistent or intermenstrual bleeding, obesity, PCOS, diabetes, or tamoxifen use, or when imaging suggests a focal lesion. Such women should undergo targeted evaluation with outpatient hysteroscopy and directed biopsy ± SIS (Grade A).^[291]
175. Pelvic magnetic resonance imaging (MRI) may be considered when hysteroscopy or SIS is inconclusive, or when deep myometrial, junctional-zone, or adnexal involvement is suspected (adenomyosis, endometrial carcinoma, or atypical hyperplasia with indeterminate ultrasound findings) (Grade B).^[287,299]
176. Management in women with nonstructural benign AUB medical therapy is recommended as the first-line management (Grade A).^[279,286]

177. Preferred options include the LNG-IUS, COCs, or oral/cyclic progestins (Grade A).^[300-302] LNG-IUS is the first-line treatment to reduce menstrual blood loss in women with nonstructural AUB-O/AUB-E.^[300] LNG-IUS is superior to oral medical therapies, including COCs, tranexamic acid, and oral progestins, in short and medium-term outcomes for blood loss reduction, symptom control, compliance, and patient satisfaction (Grade A).^[301]
178. 17 β -estradiol plus progesterone or COC may be used in perimenopausal women with AUB who also suffer from VMS, provided there are no contraindications to OCP use (Grade B).^[302-304]
179. Nonhormonal therapies such as tranexamic acid or NSAIDs may be offered as second-line or adjunct options, especially in those with contraindications to hormonal agents (Grade A).^[305]
180. Tranexamic acid is recommended for the management of heavy menstrual bleeding (HMB), leading to an average 40%–50% reduction in menstrual blood loss per cycle. It is most effective when taken only during active bleeding (1 g orally three times daily), typically up to 4–5 days per menstrual cycle, beginning on the 1st day of bleeding (Grade C).^[306]
181. A Cochrane review and subsequent clinical trials found no significant increase in thromboembolic events in the general population (Grade A). Tranexamic acid should be used with caution in women with a personal history or active risk of venous or arterial thrombosis (Grade C).^[305] It is contraindicated in women with current or past VTE/arterial thromboembolism or known thrombophilia (e.g., Factor V Leiden and antiphospholipid syndrome) (Grade B).^[305]
182. NSAIDs (mefenamic acid, ibuprofen, naproxen) are recommended for women with HMB and no contraindications, reducing menstrual blood loss by 20%–50% and relieving dysmenorrhea when taken from the onset of menses for 3–5 days; use with caution in peptic ulcer disease, renal impairment, or platelet dysfunction (Grade B).^[306]
183. Ethamsylate is an alternative for HMB when antifibrinolytics are contraindicated or unavailable. Taken from the onset of menses for 4–5 days, it provides a modest 20%–30% reduction in blood loss by improving platelet adhesiveness and capillary stability. However, it is less effective than tranexamic acid (Grade C).^[307,308]
184. Transcervical endometrial ablation may be considered for recurrent bleeding with benign histopathology in women who have completed childbearing.^[309,310]
185. Hysterectomy is reserved for refractory cases after failed medical or conservative surgical management, or for premalignant endometrial lesions (Grade B).^[311]
186. Women with structural causes of AUB, such as endometrial polyps or submucous fibroids, should be managed with hysteroscopic removal, which allows simultaneous diagnosis and treatment with high success rates and low morbidity.^[296] Moreover, it improves menstrual regularity, fertility outcomes, and QOL, and is superior to blind curettage for focal pathology (Grade A).^[312]
187. Medical management of AUB-L, AUB-A, and endometriosis: The options are COCs, progesterones, tranexamic acid, gonadotropin-releasing hormone (GnRH) analogs, mifepristone, and restricted use of ulipristal for women who want to preserve fertility when waiting for surgery and as a transitional therapy when transitioning from MT to menopause. They have potential adverse effects that limit long-term use.
188. GnRH agonists: leuprolide, goserelin, and triptorelin may be used short term, ≤ 6 months, to achieve rapid reduction of uterine, fibroid, or adenomyotic volume and control bleeding, or for preoperative optimization/surgical deferral (Grade B).^[313-315]
189. GnRH agonists are effective for endometriosis-associated pain; when used with concurrent add-back therapy, low-dose estrogen with progestogen to prevent bone loss, vasomotor, and urogenital symptoms without compromising efficacy. The 6–12 month courses are appropriate (Grade A).^[313-315]
190. Oral GnRH antagonist: Elagolix may be offered for rapid control of bleeding and pain in women with fibroids or endometriosis (Grade A).^[316,317] Elagolix improves hemoglobin and QOL and may allow surgical deferral. It causes rapid suppression of gonadotropins and ovarian sex hormones, inducing hypoestrogenism and amenorrhea (Grade B).^[318-320]
191. Elagolix, when used with add-back therapy (estradiol 1 mg + norethindrone acetate 0.5 mg daily), is safe and well-tolerated for up to 24 months in women treated for endometriosis-or fibroid-associated symptoms (Grade A).^[318-320] Concurrent low-dose estradiol plus progestogens are recommended to prevent bone loss, vasomotor and urogenital symptoms, without substantially compromising efficacy.^[320]
192. Elagolix is contraindicated in women with osteoporosis, severe hepatic impairment, or hormone-dependent malignancy.^[321] Obtain baseline and 12-month bone mineral density (BMD) when elagolix is used beyond short courses or when osteoporosis risk factors are present; ensure calcium/Vitamin D, weight-bearing exercise, and other bone-protective lifestyle measures (Grade A).^[318,320,321]
193. Oral relugolix combination therapy (relugolix 40 mg + estradiol 1 mg + norethindrone acetate 0.5 mg once daily) is recommended for fibroid-associated heavy menstrual bleeding. It can be safely given up to 24 months (Grade A).^[322,323]

Routine monitoring of BMD is not recommended when on relugolix combination therapy given for <24 months (Grade B).^[323,323]

194. Ulipristal acetate 5 mg daily for up to 3 months effectively reduces fibroid size and bleeding. However, its use is restricted due to the risk of severe liver injury; it may be considered only where liver function monitoring is feasible and regulatory approval exists (Grade B).^[324-327]
195. Mifepristone: 25 mg daily for 3–6 months is a cost-effective selective progesterone receptor modulator (SPRM) shown to reduce bleeding, pain, and fibroid volume by 40%–50%, with improvement in hemoglobin and QOL; recurrence occurs after discontinuation (Grade B).^[328,329]

POSTMENOPAUSAL BLEEDING

196. Definition (Refer to Section 1). The incidence of postmenopausal bleeding (PMB) is 10%. Women <50 years of age with PMB have a <1% chance of having EC, which increases to 24% in women more than 80 years.^[330,331]
197. About 90% of the women with EC present with PMB. Therefore, all women with PMB should undergo prompt evaluation (Grade A).^[330,332,333]
198. About 60%–80% of women presenting with PMB will have atrophic changes of the endometrium and/or the vaginal-urogenital tract.^[334,335]
199. A detailed clinical and drug history should be obtained, as several over-the-counter herbal agents such as ginseng, soy, and red clover may induce vaginal bleeding due to phytoestrogenic effects (Grade C).^[336]
200. A thorough general, pelvic, and rectovaginal examination should be performed to exclude nonuterine causes of bleeding, such as cervical, vaginal, vulval, urinary, or anal pathology, as well as atrophic vaginitis (Grade C).^[337]
201. Women presenting with PMB should undergo TVS as the first-line investigation.^[338,339]
202. TVS should include double-layer endometrial thickness (ET) measured as the maximum anteroposterior thickness of the double endometrial echo in the long axis (sagittal). Assess morphology by the echotexture (homogeneous vs. heterogeneous), focal or cystic areas, regularity of the endometrial–myometrial junction, and endocavitary fluid. Power Doppler mapping to evaluate the endometrial and sub-endometrial vascular pattern.^[339]
203. Three-dimensional TVS is adjunctive and only provides moderate accuracy in assessing endometrial volume and focal abnormalities, but shows no consistent advantage over standard two-dimensional TVS for predicting EC (Grade B).^[340,341]
204. SIS is complementary and offers high diagnostic accuracy for detecting focal intrauterine lesions, such as polyps and submucous fibroids, in women with PMB; however, it does not replace TVS-based ET triage for endometrial carcinoma and cannot substitute for histologic sampling for definitive diagnosis.^[342]
205. In women presenting with PMB and no other high-risk factors, a TVS with an ET threshold between 3 and 5 mm provides a high negative predictive value for endometrial malignancy. However, assessment should include endometrial morphology, Doppler findings, and individual risk factors (Grade B).^[336,337-340]
206. In women with p53-abnormal (p53abn) molecular subtype endometrial carcinoma, reliance on the standard ET cutoff ≤ 4 mm may lead to missed diagnoses, with false-negative rates reported up to 25% (Grade B).^[343]
207. Women presenting with a first episode of PMB who have any of the following risk factors should undergo both TVS and endometrial sampling: obesity, diabetes, hypertension, tamoxifen use, increasing years since menopause, history of polyps, smoking, family history of EC, poor image definition, focal echogenicity, diffuse heterogeneity, or persistent bleeding (Grade B).^[338,344]
208. Low-risk women (ET ≤ 3 –4 mm, clearly defined homogeneous echo pattern, normal morphology and color Doppler, and good image quality) whose bleeding has ceased may be managed conservatively with shared decision-making and repeat TVS or biopsy only if bleeding recurs (Grade B).^[339,344]
209. All women should receive documented counseling regarding the need for follow-up and to promptly report red-flag symptoms such as recurrent bleeding, abnormal discharge, pelvic pain, or unexplained weight loss (Grade A).^[339,345]
210. In postmenopausal women at low risk for EC, presenting with global (nonfocal) endometrial pathology on imaging, an outpatient endometrial sampling using a suction device (e.g., Pipelle) (unless cervical stenosis or patient noncooperative) is an acceptable, low-cost, first-line diagnostic tool (Grade B).^[346,347]
211. Office/outpatient, hysteroscopy-directed biopsy is a gold standard for diagnosing endometrial lesions.^[348]
212. Hysteroscopy may be offered as the preferred diagnostic test in postmenopausal women with persistent or recurrent bleeding, focal/heterogeneous endometrial pathology on ultrasound, inadequate or nonrepresentative Pipelle/aspiration sampling, or poor-quality/uninterpretable TVS diagnostic accuracy over blind sampling (Grade B).^[296,349]
213. It reduces unnecessary major surgery; this is especially relevant in India, where (i) endometrial polyps account for a large share of recurrent PMB and (ii) outpatient hysteroscopy is increasingly feasible in tertiary and many secondary centers at low cost without general anesthesia (Grade B).^[296]

214. When the histopathology report from endometrial sampling is inconclusive, inadequate, or nonrepresentative, the woman should be re-evaluated with transvaginal TVS to assess ET and morphology (Grade A).^[339,350]
215. If subsequent TVS reveals a thin endometrial stripe and the vaginal bleeding has ceased, no further invasive evaluation is necessary; a close follow-up strategy is advised (Grade B).^[337]
216. Persistent bleeding or an unsatisfactory/poor-quality TVS necessitates further evaluation by pelvic MRI when malignancy is still suspected (Grade B) and an outpatient hysteroscopic evaluation if not done as the primary procedure (Grade B).^[337]
217. Recurrent PMB is defined as any episode of vaginal bleeding occurring ≥ 6 weeks after the resolution of an initial episode of PMB (Grade C).^[351] Reassessment is warranted, as up to 4%–5% may subsequently reveal EC or premalignant pathology. Endometrial polyps account for approximately one in four cases of PMB.
218. In women with recurrent PMB after an initial negative evaluation, a first-line investigation should focus on tests with high accuracy for focal intrauterine disease (such as outpatient hysteroscopy) because up to 20% may have endometrial polyps, and up to 4%–5% may reveal EC or premalignant pathology (Grade B).^[337,352,353]
219. Asymptomatic postmenopausal women with thick endometrium: There is currently no clear ET threshold that can predict the risk of malignant transformation.^[354-356]
220. Postmenopausal women without bleeding, no additional risk factors, and global endometrial thickening ≤ 11 mm on transvaginal ultrasonography do not require invasive endometrial investigation (Grade B).^[335,355] In asymptomatic postmenopausal women, an ET > 11 mm should prompt an EB (Grade B).^[355] In an asymptomatic woman, the decision to biopsy if the ET is between 3/4 and 11 mm should depend on the patient's individual risk factors, endometrial morphology, and power Doppler findings (Grade C).^[355,356]
221. Women with or without PMB who are at increased risk for EC should be educated about early symptoms such as abnormal or recurrent vaginal bleeding, discharge, pelvic pain, or weight loss, and the importance of long-term follow-up even after a negative initial evaluation (Grade B).^[356]
222. PMB in tamoxifen users – Refer to Section 5.
223. PMB in MHT users – Refer to Section 6.

QUALITY OF LIFE

224. The WHO defines QOL as “an individual's perception of their position in life in the context of the culture and value system in which they live and in relation to their goals, expectations, standards, and concerns.” It encompasses various aspects of well-being, including physical, mental, emotional, social, and material health, as well as capabilities and the ability to participate in life events (Grade A).^[357]
225. Validated tools to evaluate QOL: General– Global QOL is for a broad assessment of an individual's overall well-being, including physical, psychological, social, cultural, and environmental dimensions. Moreover, health-related QOL (HRQOL) focuses on the impact of health status, disease, or treatment on physical, mental, and social functioning (Grade A).^[358,359]
226. Work-related tools: Work Productivity and Activity Impairment (WPAI) for workplace productivity and Work Ability Index as occupational functioning tools (Grade B).^[360,361]
227. When evaluating drug therapies, in addition to safety and efficacy, it is essential to assess the drug's effect on QOL (Grade A).^[362-364]
228. Moderate-to-severe VMSs (hot flashes and night sweats) are among the strongest determinants of reduced HRQOL in midlife women, affecting sleep quality, emotional well-being, daily functioning, and sexual health (Grade A).^[365,366]
229. Sleep disturbance and psychological well-being are consistently reported as the most affected domains, followed by work productivity and sexual function (Grade A).^[365-367]
230. The QOL domain most affected by bothersome vulvovaginal symptoms is sexual function, impacting 40% of women (Grade A).^[368,369]
231. Metabolic diseases, CVD, cancers, fractures, and UI can severely impair QOL, affecting physical, psychological, and social domains.^[370-373]
232. Studies using the WPAI scale have shown that hot flashes and night sweats impair daily activities more than working activities (Grade B).^[374,375]
233. Indian studies consistently show that menopausal symptoms significantly impair HRQOL in both rural and urban women, affecting physical, psychological, vasomotor, and urogenital domains (Grade B).^[376-384]
234. Menopause health education improves QOL and symptom control in menopausal women. Trusted educational programs facilitate emotional and physical well-being (Grade A).^[381,385] Lifestyle changes such as exercise and yoga improve QOL. Exercise has been shown to reduce VMS severity and enhance QOL, although future rigorous randomized controlled trials are needed to establish optimal exercise prescription principles (Grade A).^[61,386-388]

235. PFMT significantly improves HRQOL in women with GSM, with benefits for urinary symptoms, sexual health, and overall well-being (Grade A).^[389]
236. MHT improves QOL in symptomatic menopausal women, mainly through relief of VMS, sleep, and psychological well-being (Grade A).^[24,390-393]
237. Low-dose MHT significantly improves QOL in symptomatic women. In contrast, the HERS trial showed mixed effects among older women, and the WHI trial found no clinically meaningful improvement in HRQOL with estrogen plus progestin (Grade A).^[394-396] An Indian study demonstrated that tibolone therapy improves HRQOL in menopausal women (Grade B).^[397]

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SECTION 3

BIDIRECTIONAL INTERPLAY BETWEEN MENOPAUSE AND SYSTEMIC HEALTH

1. Noncommunicable diseases are multifactorial, and menopause represents a biologically systemic phase during which declining ovarian hormones influence metabolic, vascular, immune, musculoskeletal, and neurocognitive function. Conversely, preexisting systemic disorders and their treatments may modify the timing of menopause, pattern of symptom expression, and long-term health outcomes of menopause.^[1-3]
2. This bidirectional relationship underscores menopause as both a marker and a modulator of overall systemic health, warranting integrative, targeted screening and management across organ systems.

NERVOUS SYSTEM

3. Menopause is associated with changes in mood, sleep, migraine pattern, and cognitive complaints, but it does not cause the onset of major neurological or psychiatric disorders. Preexisting neurological conditions such as migraine with aura (MA) and epilepsy require specific consideration when selecting a menopause hormone therapy (MHT) regimen (Grade B).^[1-3]
4. **Neuropsychiatric symptoms:** Refer to Section 2.
5. **Sleep:** Refer to Section 2.
6. **Migraine without Aura (MO):** It is more sensitive to estrogen fluctuations, may worsen during perimenopause, and is not associated with an increased risk of ischemic stroke or vascular events.
7. MO does not independently contraindicate MHT use. The decision to give MHT is guided by vascular risk assessment based on comorbidities rather than migraine status itself. Transdermal and low-dose continuous regimens are preferred to minimize hormonal fluctuations at menopause transition (MT).^[2,4,5]
8. MA is a strong independent risk factor for ischemic stroke, and systemic estrogen therapy should be used with caution or avoided.
9. When MHT is considered in women with MA, best practice includes a thorough vascular risk assessment, use of lower-dose estrogen preference for transdermal delivery, a continuous regimen to minimize hormonal fluctuations, and close follow-up in the initial months of therapy (Grade C).^[4,6,7]
10. **Epilepsy:** Estrogen has proconvulsant effects, while progesterone has anticonvulsant effects. Hormonal fluctuations at MT can alter seizure thresholds, with variable improvement or worsening postmenopause (Grade B).^[8,9] Women with epilepsy are at increased risk of early menopause (EM) and osteoporosis.^[10,11]
11. Antiepileptic drugs (AEDs): enzyme inducers such as carbamazepine, phenytoin, phenobarbital, primidone, topiramate, and oxcarbazepine accelerate Vitamin D and sex steroid metabolism, increasing bone loss and fracture risk in postmenopausal women (Grade A).^[10-13] Noninducing AEDs such as levetiracetam, lamotrigine, and gabapentin have a safer bone profile.
12. MHT: Oral conjugated equine estrogens (CEE) plus medroxyprogesterone acetate (MPA) therapy has been associated with increased seizure frequency in postmenopausal women with epilepsy (Grade C).^[14,15] Modern regimens using low-dose transdermal estradiol and micronized progesterone are preferred for their anticonvulsant and favorable neuroprofile (Grade B).^[14,15]
13. **Multiple sclerosis (MS):** Menopause may accelerate MS progression and neurodegeneration, with symptoms such as fatigue and cognitive dysfunction worsening postmenopause (Grade C).^[16] MHT can be used safely for symptom management, with preliminary but inconclusive evidence for disease modification (Grade C).^[17]
14. **Parkinson's Disease (PD):** Estrogen decline after premenopausal oophorectomy has been linked to an increased risk of Parkinsonism. The physiological changes and pathological mechanisms involved in PD neurodegeneration may differ at different stages of the menopausal process; further research is needed to clarify the association.^[18,19] Evidence on whether MHT modifies outcomes in established PD remains sparse and inconsistent (Grade C).^[20-22]
15. **Chronic pain syndrome:** Estrogen and progesterone modulate pain processing via neuroendocrine pathways, and at menopause, there is an increased prevalence and severity of fibromyalgia, temporomandibular pain, migraine, and musculoskeletal pain (Grade B).^[23-25] Evidence does not support prescribing MHT for the treatment or prevention of chronic musculoskeletal, fibromyalgia-type, or neuropathic pain.^[26-28]
16. **Dementia:** Although the Diagnostic and Statistical Manual of Mental Disorders, fifth edition, uses the term “major neurocognitive disorder,” the evidence regarding menopause and MHT relates specifically to dementia as traditionally defined in clinical and research settings. Therefore, we use the term “dementia” for clarity and consistency with the literature.^[29]
17. India currently has an estimated 8.8–9.5 million people living with dementia in 2025, projected to rise to nearly 16 million by 2050. Community-based studies report dementia prevalence ranging from 1.5% to 5% in individuals aged >60 years.^[30-34]
18. **Alzheimer's disease (AD):** In India, AD is the leading cause of dementia (50%–60%), followed by vascular dementia (15%–25%), often as mixed dementia. Lewy body and frontotemporal dementias account for a smaller proportion (5%–10%).

Reversible causes such as Vitamin B12 deficiency, hypothyroidism, and postinfective sequelae remain relevant in the Indian context.^[30,35,36]

19. Prevalence is consistently higher in women than in men, partly attributable to longer life expectancy and hormonal influences.^[30,35,36] The total societal cost of dementia is approximately rupees 14,700 crore and is expected to more than triple by 2030.^[37,38]
20. Menopause: Dementia develops only when multiple risk factors interact over decades. Estrogen decline may affect vulnerability windows, but genetics, especially APOE ϵ 4, vascular risk, education, lifestyle, and aging biology play a far larger role. Thus, most postmenopausal women do not develop dementia despite universal estrogen decline.^[39,40]
21. Women with prodromal cognitive impairment or APOE4 genotype report worse sleep, mood instability, and vasomotor symptoms (VMSs), which amplify menopausal distress.^[41]
22. Diagnosis of AD relies on clinical assessment supported by cognitive testing, neuroimaging, and biomarkers.^[42]
23. Biomarker testing for AD is now available in India at approximately Rs. 12,000–15,000, primarily through cerebrospinal fluid assays (amyloid beta 42 [A β 42], total tau, and phosphorylated tau). Emerging blood-based biomarkers (plasma p-tau, A β 42/40 ratio, neurofilament light, and glial fibrillary acidic protein) are not yet routinely available in clinical practice.^[43,44]
24. Biomarker testing should be considered in cases of early-onset dementia, atypical or mixed presentations, and mild cognitive impairment where confirmation of AD pathology would influence management or trial eligibility. Still, it is not recommended for population screening.^[45]
25. Aggressive cardiovascular risk control, adoption of a healthy lifestyle, and engagement in cognitive stimulation are associated with reduced risk of dementia and should be emphasized as preventive strategies (Grade A).^[46,47]
26. Introduction of accessible diagnostic and early-stage dementia care services, including memory clinics, is recommended in India to reduce the diagnostic gap and enable timely management (Grade B).^[48,49]
27. MHT is not recommended for the prevention of dementia at any age or for slowing the progression of established AD (Grade A).^[50] Initiating CEE with or without MPA in women aged ≥ 65 years was associated with an increased risk of dementia and did not improve cognitive outcomes (Grade A).^[50-55]

SKELTOMUSCULAR SYSTEM

Postmenopausal osteoporosis and fragility fractures

28. Postmenopausal osteoporosis (PMO) is often termed a “silent” disease and carries a high lifetime risk of fragility fractures. Such fractures are associated with significant mortality, loss of independence, and substantial social and economic burden.^[56]
29. Global estimates suggest that up to 1 in 2 women over the age of 50 may experience an osteoporosis-related fracture during their remaining lifetime, with India reporting the highest disability-adjusted life years rates.^[57]
30. Indian data consistently demonstrate that fragility fractures, particularly hip fractures (HFs), occur about a decade earlier (mean age 65–71 years) than in Western populations (>75 –80 years). However, most available datasets included both men and women; hence, these studies provide robust evidence of earlier fracture onset in the Indian population, but they may underestimate the sex-specific burden and predictors of PMO.^[58-60]
31. In a tertiary-care hospital-based study of perimenopausal women (40–49 years), nearly one in five had vertebral fractures, and these women had lower anti-müllerian hormone levels, suggesting that declining ovarian reserve may parallel skeletal fragility.^[61]
32. This earlier onset aligns with epidemiological evidence showing that approximately 1 in 3 postmenopausal women has osteoporosis and nearly 1 in 2 has osteopenia, often manifesting in the 50s–60s (Grade A).^[62-66]
33. The burden of fragility fractures is rising steeply due to demographic aging and nutritional factors. In particular, hypovitaminosis D and low dietary calcium intake beginning in childhood contribute to reduced peak bone mass (PBM) and the earlier onset of osteoporosis (Grade B).^[62,66,67]
34. Hospital and community-based studies further implicate low body mass index (BMI), poor sleep, elevated triglycerides, increased C-reactive protein (CRP), and EM as significant risk factors (Grade B).^[65,68-71]
35. Nutritional deficits are widespread: about 3 in 4 women consume less calcium than the recommended dietary allowance (RDA) and 2 in 3 women are Vitamin D deficient. These “twin nutrient deficiencies,” compounded by demographic aging and lifestyle risk factors, contribute to the earlier onset of osteoporosis and fragility fractures in Indian women.^[72-74]
36. Over 70% of Indian women and many clinicians have poor awareness of PMO, significantly limiting prevention and treatment efforts (Grade C).^[75-77]
37. The Indian Menopause Society (IMS) 2020 clinical practice guidelines on PMO recognize PMO as a significant national concern and urge early screening, lifestyle counselling, and timely preventive strategies tailored to Indian women.^[78]

38. Gynecologists are the first line of defense for skeletal and musculoskeletal health in midlife women. Routine gynecological visits should integrate bone health assessment, lifestyle counseling, and timely preventive or therapeutic interventions.^[79]

Definitions and types of osteoporosis

39. **Osteoporosis:** It is a systemic skeletal disease characterized by low bone mass and microarchitectural deterioration of bone tissue, resulting in increased fragility and fracture risk as measured by dual-energy X-ray absorptiometry (DXA) black.^[80] Bone mass is calculated as bone mineral density (BMD) from DXA, and microarchitectural deterioration of bone tissue is quantified indirectly using trabecular bone score (TBS) derived from DXA, and more precisely by high-resolution peripheral quantitative computed tomography or histomorphometry.^[81,82]
40. **Primary osteoporosis type I (PMO):** It occurs in women after menopause due to estrogen deficiency. It predominantly affects trabecular bone, with accelerated bone loss of 1%–2% (up to 5%) annually in the first 5–7 years postmenopause.
41. **Primary osteoporosis type II (senile osteoporosis):** Age-related bone loss at 1% per year, affecting both cortical and trabecular bone in men and women.^[78]
42. **Secondary osteoporosis:** It results from identifiable secondary causes, such as endocrine disorders (e.g., hyperthyroidism, hyperparathyroidism, Cushing's), medication use (especially glucocorticoids), chronic systemic illnesses, and malabsorption syndromes that impair bone metabolism or limit PBM acquisition.^[83,84]
43. **Premenopausal osteoporosis:** It is defined by a low BMD (Z-score < -2.0) with or without fragility fractures in women before menopause (Grade A).^[85-87] The majority of cases are secondary linked to gynecologic, endocrine, metabolic, or systemic causes and therefore warrant thorough evaluation before pharmacologic treatment. Drug therapy is considered only for women with recurrent fractures, progressive bone loss, or irreversible secondary causes (Grade A).^[85-87]
44. **Idiopathic premenopausal osteoporosis:** It is a rare diagnosis, established only when no secondary cause of low bone mass or fragility fracture can be identified after comprehensive evaluation. Its pathogenesis remains incompletely understood, likely reflecting heterogeneous mechanisms, including genetic predisposition, impaired bone formation, altered bone microarchitecture, and intrinsic skeletal factors (Grade C).^[88-90]
45. **Fragility fractures:** Fragility fractures most commonly involve the hip, vertebrae, and distal radius, though other sites such as the humerus, pelvis, ribs, and pubic rami may also be affected following minimal trauma (Grade A).^[56,91]
46. Causes of fragility fractures: Fragility fractures are caused by both BMD-related and non-BMD-related factors, resulting from a complex interplay of osteoporosis, sarcopenia, frailty, nutritional deficits, comorbidities, and falls (Grade A).^[92,93]
47. **Osteomalacia:** It is defined as a condition in which there is impaired mineralization of the bone matrix (osteoid) in mature skeletons, most commonly due to Vitamin D deficiency or disordered phosphate metabolism, leading to bone pain, muscle weakness, and increased fracture risk, particularly Looser's zones (pseudo fractures).

Risk factors for postmenopausal osteoporosis and fragility fractures

48. **Major risk factors:** defined by the World Health Organization (WHO) (Grade A): Advancing age, Low BMI, history of a fracture, parental history of HF, smoking, alcohol, use of glucocorticoids, and rheumatoid arthritis.^[94]
49. **Environmental factors:** nutrition (calcium intake using the quick dietary calculator and protein), physical activity, sunlight exposure, and risk of falling are important modifiable risk factors (Grade B).^[94,95]
50. **PBM:** It is the highest level of bone mass achieved as result of normal growth. It is an important predictor of the onset of primary osteoporosis. It is influenced by genetic, hormonal, racial, nutritional, and lifestyle factors as well as physical activity. Environmental factors modulate the genetic potential in achieving PBM.^[96,97]
51. Age, sex, and genetics are key nonmodifiable risk factors for osteoporosis. PBM is attained by 25–30 years, with 40%–50% achieved by age 18. Women reach skeletal maturity with 10%–15% lower bone mass than men. Asian Indians have significantly lower PBM compared to some other races.^[98-101]
52. **Barker's theory:** Barker's developmental origins of health and disease (DOHaD) framework is relevant to postmenopausal outcomes, highlighting that prevention begins before conception and continues across the life course.^[102]

Diagnosis of postmenopausal osteoporosis

53. Table 1 shows the WHO classification of osteoporosis for BMD-based categories with and without fractures.^[103]
54. **BMD:** The current gold standard for BMD assessment is DXA. BMD values are expressed as T-scores (standard deviation [SD] difference from young adult mean) or Z-scores (SD difference from age- and sex-matched mean).^[103]
55. The reference range for calculating the T-score in postmenopausal women is based on the NHANES III Caucasian female reference database (age 20–29 years).^[103]
56. Global organizations, including the World Health Organization (WHO), the International Osteoporosis Foundation (IOF), the International Society for Clinical Densitometry (ISCD), and the National Osteoporosis Foundation (NOF), as well as Indian

Table 1: Diagnosis of postmenopausal osteoporosis with and without fractures (World Health Organization categories for diagnosis of osteoporosis)

Diagnosis	T-score (SD)
Normal	Equal to -1.0 or higher
Low bone mass (osteopenia)	Between -1.0 and -2.5
Osteoporosis	Equal to -2.5 or lower
Severe osteoporosis	Equal to -2.5 or lower with fracture

SD: Standard deviation

professional bodies such as the Indian Menopause Society (IMS) and the Indian Society for Bone and Mineral Research (ISBMR), currently recommend using the NHANES III Caucasian female reference database for T-score calculation.^[56,78,91,103-105]

57. However, this reference standard may overestimate the prevalence of osteoporosis in Indian women. The ETHNICA 2025 study demonstrated that when Indian normative (Indian Council of Medical Research [ICMR]) reference data were applied instead of Caucasian values, the estimated prevalence of osteoporosis declined from 26.6% to 18%, highlighting substantial ethnic calibration bias.^[106]
58. This finding underscores the urgent need for nationally validated BMD reference standards correlated with fracture outcomes, to serve as the scientific basis for diagnostic thresholds and treatment eligibility criteria in Indian women (Grade B).^[56,78,91,103,105,107]
59. **Diagnosis and categorization of osteoporosis by IOF and WHO:** In postmenopausal women, osteoporosis is diagnosed by the presence of a fragility fracture (clinical or radiological), irrespective of BMD, and/or by a BMD T-score ≤ -2.5 measured at the lumbar spine, total hip, or femoral neck. For diagnostic purposes, the lowest valid T-score among these skeletal sites should be used (Grade A).^[103]
60. The ISCD diagnostic criteria for osteoporosis in postmenopausal women and in men aged 50 and older are if the T-score of the lumbar spine, total hip, or femoral neck is -2.5 or less. In certain circumstances (hyperparathyroidism, gross obesity, or degenerative spine disease, when hip/spine are not interpretable), the 33% radius (also called 1/3 radius) may be utilized.^[108]
61. Z-score: This indicates how many SDs an individual's BMD differs from the mean for age and sex. Primarily used in children, adolescents, and premenopausal women. A Z-score < -2 is considered "low for age."^[108]
62. **Diagnosis of fragility fractures:** Clinical recognition is essential since many patients first present with fracture rather than low BMD.

Screening of postmenopausal osteoporosis (for women without fragility fractures) from ≥ 40 years of age

63. **Principle:** Primary osteoporosis is a silent disease, often undetected until a fracture occurs (Grade A).^[78,91]
64. Early detection is vital to prevent morbidity and mortality and reduce the economic and societal burden (Grade A).^[109]
65. In India, population-wide DXA-based screening is not cost-effective, instead a targeted case-finding approach using risk factors with DXA where available is recommended (Grade B).^[78,91]
66. **Rationale:** Risk factors are derived from history and clinical examination. Distinguish between factors that reduce bone mass and those that increase fracture risk independent of BMD (e.g., falls risk).
67. Fracture risk should be calculated ideally using BMD together with clinical risk factors, not T-scores alone (Grade A).^[56]

Fracture risk assessment: Risk-assessment tools for Indian women

World Health Organization Fracture Risk Assessment Tool (FRAX®)

68. Fracture Risk Assessment Tool (FRAX) integrates key clinical risk factors with or without BMD to estimate the 10-year probability of HF and major osteoporotic fractures (MOF). The absolute risk of fracture depends upon age, life expectancy, and the current relative risk. FRAX is an internationally validated model used in over 100 countries, offering population-specific calibration and valuable fracture-probability estimates.
69. It has an online and offline format. FRAX is the preferred first-line tool for assessing fracture risk and provides the interventional threshold (IT) and very high-risk thresholds to guide treatment decisions, with and without BMD (Grade A).^[56,110,111]
70. FRAX is country-specific, and an Indian FRAX model is available online (www.shef.ac.uk/FRAX).^[112] The Indian FRAX® model, derived from a small North-Indian cohort, lacks nationwide calibration and likely underestimates true fracture risk; it omits falls risk, lumbar-spine BMD, and regional skeletal variation and requires online access, limiting applicability in rural settings (Grade C).^[58,113]
71. After calculating the 10-year probabilities of MOF and HP risk using FRAX without BMD, the woman is categorized into low-risk, high-risk, and very high-risk categories.

72. **FRAXplus:** an upgrade to the widely used FRAX, developed to address several limitations of the original model (<https://www.fraxplus.org/frax-plus>).

The osteoporosis self-assessment tool for Asians

73. The osteoporosis self-assessment tool for Asians (OSTA) is a simple, non-BMD screening tool that uses only age and weight. It stratifies women into low, moderate, and high-risk categories; it has been validated in Indian and other Asian populations [Figure 1].
74. OSTA is practical for community and primary-care screening where DXA is unavailable and has a high negative predictive value (NPV) for excluding severe osteoporosis (Grade B).^[114]
75. As OSTA cannot estimate fracture probability or guide precise treatment thresholds, it should be used for an initial triage.^[114]
76. **Proposed Strategy for using OSTA and FRAX India:** A stepwise, resource-sensitive framework combining OSTA and FRAX enables rational, tiered risk assessment in Indian practice
77. **Screening at primary care centers - OSTA:** It is a low-cost community screening tool, easily applied by paramedical staff or frontline health workers in primary-care and outreach settings to identify women at potential risk. It requires only age and weight, making it practical where DXA or Internet access is unavailable and suitable for busy clinical environments with limited physician time.
78. **Screening at secondary or tertiary care centers - FRAX without BMD:** Categorizes women as low, high, or very high risk for fracture. However, detailed data requirements may limit use in high-volume practices.
79. **Definitive risk quantification - FRAX with BMD using DXA:** Remains the definitive risk quantifier for individualized treatment planning and establishing pharmacologic intervention thresholds, ideally performed in secondary or tertiary care centers with standardized DXA facilities.
80. **Assess BMD and TBS for fracture risk by DXA (Gold standard)**

Dual X-ray absorptiometry

81. **Indications for Dual-Energy X-ray Absorptiometry (DXA) (Grade B)**^[78]
- All postmenopausal women >5 years since menopause
 - Postmenopausal women <5 years since menopause who have additional clinical risk factors for osteoporosis
 - Women in the menopausal transition with secondary causes of bone loss (e.g., endocrine, metabolic, or medication related)
 - Presence of radiological osteopenia or vertebral compression fracture
 - Women with fragility fractures confirmed by radiology or DXA
 - To establish a diagnostic and therapeutic baseline, before initiating pharmacotherapy for osteoporosis
 - Emerging indication: Assessment of total body composition (fat and lean mass) for metabolic and sarcopenic risk evaluation.
82. The Indian-specific basis for these recommendations is discussed in *Clinical Practice Guidelines on Postmenopausal Osteoporosis: An Executive Summary and Recommendations. J Midlife Health. 2020.*^[78]
83. For each SD decrease in BMD, there is a doubling of fracture risk. For monitoring treatment and comparing DXA results, accurate comparisons can only be made when the scans have been done using the same machine and when comparing the values generated from the same sites.

Weight (kg)	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-84	85-89	90-94
(lbs)	88-98	99-109	110-119	120-130	131-141	142-152	153-164	165-174	175-185	186-196	197-208
Age											
40-44											
45-49											
50-54											
55-59											
60-64											
65-69											
70-74											
75-79											
80-84											
85-89											
90-94											
95-99											

Figure 1: Osteoporosis self-assessment tool for Asians^[114]

84. To monitor therapy, the interval to the next DXA should depend on the calculated individual risk and would mostly be scheduled between 1 and 5 years later (Grade B).^[108]

Categorizing women into risks for fracture based on fracture risk assessment tool/osteoporosis self-assessment tool for Asians/DXA

85. Based on FRAX with and without BMD, the chart gives a 10-year probability of MOF and suggests an IT to guide treatment decisions. (*NOGG-UK clinical guideline for the prevention and treatment of osteoporosis/Celia L. Gregson et al/Archives of Osteoporosis (2022) 17: 58/https://doi.org/10.1007/s11657-022-01061-5/CC BY*).
86. **OSTA:** The risk of osteoporosis in the high-, medium-, and low-risk categories was found to be 61%, 15% and 3%, respectively.
High-risk patients: to measure BMD, if possible, and consider drug treatment even if BMD is not available (About 61% of individuals in the high-risk group have osteoporosis)
Moderate-risk patients: to measure BMD and consider drug treatment if BMD is low (About 15% of individuals in the moderate-risk group have osteoporosis)
Low-risk patients: not to measure BMD unless other risk factors are present.
87. **Precautions:** Calculation assumes no other risk factors for osteoporosis. Significantly increased risks are associated with rheumatoid arthritis, fracture of the wrist, hip, or rib after age 45, and other risks such as low-trauma related fractures or long-term corticosteroids.^[115-117]
88. Categorizing PMO for fracture risk based on FRAX/OSTA/DXA [Table 2].

Clinical evaluation

89. **Women without fractures:** Categorize as captured in the clinical risk factor assessment and DXA [Table 2].
Women with fractures: Typical presentations include sudden severe pain following low-energy trauma, groin/lateral hip pain with inability to bear weight, and possible limb shortening (hip). Distal forearm pain with swelling and deformity after falling on an outstretched hand (wrist). Sudden severe mid-back pain after minimal trauma or insidious chronic mid-back discomfort that may radiate around the abdomen should prompt spine imaging.
90. **Related symptoms:** Generalized bone pain should raise suspicion of osteomalacia or skeletal metastasis (Grade B).^[115,116]
91. **Vitamin D deficiency symptoms:** proximal muscle weakness, difficulty with squatting, climbing stairs, and rising from low chairs. Tenderness may be elicited on the pretibial region and sternum.^[78,117]
92. **Calcium deficiency symptoms:** Muscle spasms, twitches, cramps, numbness, or tingling in the fingers, toes, or around the mouth.^[78]
93. **Sarcopenia and frailty share many symptoms,** most notably muscle weakness, slowness, fatigue, and weight loss, but frailty also encompasses broader issues such as exhaustion, cognitive decline, and increased vulnerability to stressors. Early recognition of these symptoms is crucial for intervention and prevention of further decline.^[118]
94. **Fall risk assessment:** a multifactorial evaluation is recommended.^[119]
95. **Physical examination:** Annual height and weight measurement, assessment of balance and gait (including the Get-Up-and-Go test), and routine dental evaluation.
96. A prospective height loss of ≥ 4 cm from peak adult height, or a current–previous height difference of ≥ 2 cm accompanied by other risk factors (such as kyphosis, back pain, or glucocorticoid use), should prompt evaluation for vertebral fracture or underlying osteoporosis (Grade B).^[78,120]

Table 2: Categorizing fracture risk based on results from the fracture risk assessment tool/osteoporosis self-assessment tool for Asians and bone mineral density by dual-energy X-ray absorptiometry

Classification	t-score (SD)	FRAX/OSTA	Fracture risk
Normal	Equal to -1.0 or higher	FRAX-low OSTA-low	Low risk
Low bone mass (osteopenia)	Between -1.0 and -2.5	FRAX - $<20\%$ MOF or $<3\%$ HPF OSTA-Moderate	Upper or lower percentile of low risk
Low bone mass	Between -1.0 and -2.5	FRAX $>20\%$ MOF or $>3\%$ HPF OSTA-High	High risk
Osteoporosis	Equal to -2.5 or lower	FRAX $>20\%$ MOF or $>3\%$ HPF OSTA-High	High risk
Severe osteoporosis	Equal to -3 or lower, with fracture	FRAX - $>30\%$ MOF or $>4.5\%$ HPF	Very high risk

MOF: Major osteoporotic fracture, HPF: Hip fracture, FRAX: Fracture risk assessment tool, OSTA: Osteoporosis self-assessment tool for Asians, SD: Standard deviation

97. Inability to touch the occiput to the wall while standing (thoracic fracture); inability to insinuate the four fingers between the lowest rib and iliac crest (lumbar fracture); kyphosis and Dowager's hump are seen in the late stage of osteoporosis (Grade A).^[78,120]

Investigations

98. **Laboratory tests:** to rule out secondary causes. Complete blood picture, erythrocyte sedimentation rate, CRP, blood sugar, serum calcium, serum creatinine, serum albumin, alkaline phosphatase, thyroid-stimulating hormone (TSH), 25-hydroxy Vitamin D, preferably fasting serum phosphorus, parathyroid hormone (PTH) (based on clinical judgment).^[78,121]
99. **TBS:** The TBS derived from lumbar spine DXA images is an adjunct tool for evaluating bone microarchitecture and fracture risk independent of BMD in postmenopausal women with discordance between BMD and clinical fracture risk, type 2 diabetes, glucocorticoid use, or secondary osteoporosis (Grade B).^[81,122]
- TBS >1.310: normal microarchitecture, low fracture risk
 - TBS 1.23–1.31: partially degraded microarchitecture
 - TBS <1.230: degraded microarchitecture, high fracture risk.
100. **Peripheral DXA (X-ray based):** May be used as a mass screening tool because of its high NPV (Grade C).^[123]
101. **Quantitative ultrasound (QUS):** Is a portable, inexpensive, and radiation-free tool with utility in community and rural India for preliminary osteoporosis screening, cannot be used for diagnosis or monitoring therapy (Grade B).^[124,125] In Taiwanese postmenopausal women, QUS outperformed OSTA in those aged 45–65, while OSTA outperformed QUS in those aged 66–80 years.^[126]
102. **X-ray thoracolumbar spine:** X-ray abnormalities usually indicate advanced bone disease; hence, plain X-rays are recommended in all diagnostic protocols for osteoporosis. The lateral view of the thoracolumbar spine is the preferred position for detecting altered vertebral architecture.^[78]
103. Bone turnover markers (BTMs) are not recommended as part of routine tests for the clinical diagnosis of osteoporosis (Grade B).^[78,121] Their primary role is in monitoring therapy to assess compliance and efficacy of therapy (Grade B).^[78,121]

Management of postmenopausal osteoporosis

104. Osteoporosis is a long-term condition for which there is currently no cure; therefore, lifelong treatment and monitoring to prevent fractures are often required.
105. Table 3 gives a comprehensive management plan based on the outcomes of the assessment of BMD/FRAX/OSTA.

Universal recommendations

106. **Therapeutic lifestyle management (TLM):** It includes a balanced diet, adequate physical activity, exposure to sunlight, and avoidance of bone-depleting agents. Balanced diet: Daily salt intake should not exceed 5 g (1 tsp). Protein should be 1 g/kg body weight. Decrease caffeine intake (<3 cups/day), limit alcohol, and avoid tobacco use. Maintain good oral hygiene and receive routine dental checkups (Grade B).^[78]
107. **Calcium:** Assess total calcium intake from dietary sources using the NOF. Calcium Calculator. Washington, DC: NOF; c2020–2024. Available from: <https://www.nof.org/patients/treatment/calcium-calculator> [Table 4].
108. Encourage achieving the recommended calcium intake primarily through daily foods [Table 2], emphasizing that this is an achievable target for every Indian through simple, locally available options.^[127]
109. Adequate calcium intake (>800 mg/day) can be achieved through culturally appropriate, affordable Indian diets without routine supplementation.

Table 3: Treatment recommendation based on bone mineral density/fracture risk assessment tool/osteoporosis self-assessment tool for Asians

BMD	Fracture risk BMD + CRF/ CRF by FRAX and or OSTA	Treatment decision	Choice of therapy
Low bone mass	Low	TLM/reassess after 5 years	TLM
Low bone mass	Upper percentile of low risk	Treat if risk with or without BMD is above IT	Early PM-MHT, BP Late PM-BP
Osteoporosis	High	Treat	Early PM-MHT, BP, DU Late PM-BP, DU, TER, RZ
Severe osteoporosis	Very high risk	Refer to specialist	Early PM-BP, DU, TER, RZ Late PM-BP, DU, TER, RZ

BMD: Bone mineral density, CRF: Clinical risk factors, TLM: Therapeutic lifestyle management, PM: Postmenopause, MHT: Menopause hormone therapy, BP: Bisphosphonates, DU: Denosumab, TER: Teriparatide, RZ: Romosozumab, IT: Interventional threshold, FRAX: Fracture Risk Assessment Tool, OSTA: Osteoporosis self-assessment tool for Asians

110. Aim for 3–4 calcium sources daily, for example, 1 glass milk + 1 Katori greens + 1 tbsp sesame + 1 dal = 800 mg calcium. Add sesame/curry leaf/mint/coriander/chutney. Dairy foods also add 6–8 g of protein per serving, supporting bone and muscle strength
111. **Enhance calcium intake:** Resource-limited diets with ragi, pulses, leafy greens, and sesame/curry leaves chutney can meet daily needs (Grade B).^[128] Mixed diets with milk, curd, greens, dal, peanuts, and small fish (sardines with bones) yield similar adequacy (Grade B).^[128] Affluent/health-conscious diets that include fortified milk, paneer, sesame, nuts, and diverse greens easily meet RDA goals (Grade A).^[128,129] Table 5 for Indian foods with calcium-rich contents.

Calcium requirements in Indian postmenopausal women: Discrepancies and evolving guidelines, recommended dietary allowance of calcium

112. **The ICMR RDA (2010):** Recommended 600 mg/day of calcium for postmenopausal women. This value was based on a sound factorial approach: obligatory urinary/fecal/dermal losses, balance studies, limited Indian absorption data, and adaptation of FAO/WHO/UNU norms with adjustments for Indian dietary bioavailability. This aligned with global practice, in which calcium RDAs are derived from balance studies rather than fracture outcome data (Grade B).^[130-133]
113. Importantly, calcium requirements vary with ethnicity, habitual protein intake, Vitamin D status, and other confounders, underscoring the need for population-specific recommendations (Grade C).^[130]
114. Average intake in India remains around 400 mg/day, which is well below both global and Indian targets.
115. **The ICMR 2020** expert group revised the RDA upward to 1200 mg/day for women >50 years, using updated factorial modelling and population distribution (estimated average requirement + RDA framework). While biologically reasonable, this threshold would necessitate near-universal supplementation, which may not be practical or cost-effective in the Indian setting (Grade C).^[134]

Table 4: Adapted and an approximate quick dietary calcium assessment chart

Source	Calcium (mg)*	Number of servings	Total calcium (mg)
Dairy source	300–525/1 glass	x	
	300/1 katori curds	x	
Non dairy	200–300	x	

*Approximate estimates. Total intake of calcium in mg. Calculate the total daily dietary intake by entering the sources and the number of servings from dairy and nondairy sources before supplementation

Table 5: Indian foods with calcium-rich contents

Dietary product	Serving	Calcium (mg)
Milk/curd (buffalo)	1 glass (250 mL)	520
Milk/curd (cow)	1 glass (250 mL)	300
Milk/curd (low fat)	1 glass (250 mL)	300
Khoa	100 g	600
Paneer	100 g	320
Cheese slice	20 g	160
Ragi	100 g	360
Horse gram whole/Rajma	100 g	280
Soyabean	100 g	240
Moth bean/Bengal gram (whole)	100 g	200
Red/Green/Black gram/chickpeas	100 g (whole)	100–120
Drumstick leaves	100 g	300
Radish leaves/Methi leaves	100 g	270
Mint/parsley	100 g	200
Okra (BHINDI)	100 g	85
Cabbage	100 g	60
Dried figs	5 whole	95
Almonds	1 handful 25 g	60
Sesmae seeds (til)	15 g, 1 tablespoon	90
Cumin	6 g 0.4 tablespoon	60
Orange	1 medium size	50
Fish Rohu	25 g	160

Adapted from Longvah T, Ananthan R, Bhaskarachary K, Venkaiah K. Indian Food Composition. Hyderabad: National Institute of Nutrition, Indian Council of Medical Research; 2017

116. **IMS 2020 guideline:** Adopted ≥ 800 mg/day as a pragmatic recommendation achievable through food-based sources with selective supplementation (Grade B)^[78,127] [Table 2].

Vitamin D

117. The recommended daily intake of Vitamin D for Indian adults is 1000–2000 IU, aligning with Endocrine Society and Indian (ICMR, ESI, IMS) guidance, which target serum 25-hydroxyvitamin D (25(OH)D) ≥ 30 ng/mL; lower institute of medicine values (600–800 IU/day) may be inadequate in India due to widespread deficiency and limited sunlight exposure (Grade A).^[78,134–138]
118. Individuals with obesity, HIV infection, or those receiving glucocorticoids, anticonvulsants, antifungal, or antiviral therapy may require higher doses to achieve sufficiency. A desirable serum 25(OH)D range is 30–60 ng/mL. Levels up to 100 ng/mL are generally considered safe and unlikely to cause toxicity.
119. In contrast, in conditions such as granulomatous disorders (e.g., sarcoidosis and tuberculosis), it is prudent to maintain serum 25(OH)D just above 30 ng/mL, avoiding higher levels due to an increased risk of hypercalcemia.^[137]
120. Sunlight is the preferred natural source of Vitamin D. Exposure of 15%–30% of body surface area (face, neck, arms, and forearms) without sunscreen for about 30 min between 10 am and 3 pm, depending on season, latitude, altitude, air pollution, and skin pigmentation, can maintain adequate Vitamin D synthesis. This exposure is roughly equivalent to an oral intake of 340–490 IU/day, given that 100 IU increases serum 25(OH)D by 1 ng/mL (Grade A).^[73,139,140]

Physical activity/exercise

121. Appropriate resistance, weight-bearing aerobics, and core-stabilizing exercises are needed to maintain bone health (Grade A).^[141,142]
122. Brisk walking 4–5 times/week for 30 min is healthy but on its own not sufficient for bone health (Grade A).^[143,144]
123. Patients with severe osteoporosis should avoid forward flexion exercises, heavy weightlifting, and side-bending exercises, as these activities exert compressive forces on the spine that may lead to fractures (Grade A).^[145–147]
124. **Prevention of falls:** Balance exercises are essential. A multifactorial risk assessment and intervention is the most consistently effective strategy to prevent falls (Grade A).^[148,149]

NUTRITIONAL PHARMACOLOGICAL MANAGEMENT

125. **Nutritional supplementation:** Combined calcium + Vitamin D supplementation (1000–1200 mg Ca + 800–1000 IU D₃/day) reduces hip and total fracture risk in older adults (Grade A).^[150–153]
126. **Calcium:** Supplements are used to correct calcium and Vitamin D deficiency and form an integral part of established osteoporosis management to achieve a total of 1000–1200 mg/day (Grade A).^[154] The risk of cardiovascular events, including calculi, is not observed with the recommended doses of calcium (Grade A).^[155,156]
127. Calcium supplements should be individualized, limited to ≤ 500 mg per dose, 800–1200 mg/day total, and spaced from interfering nutrients or drugs. Dietary restriction is not advised, and excessive intake (>2500 mg/day) should be avoided (Grade A).^[56,150]
128. **Vitamin D:** Vitamin D deficiency is widespread across India, with prevalence estimates around 20%–100%, higher among women and residents of northern and eastern zones due to limited sun exposure and cultural clothing practices (Grade A).^[157,158]
129. Vitamin D is obtained from sunlight, fortified foods, and supplements, but most Indians receive inadequate sun exposure, and current food fortification levels are insufficient to meet the RDA.
130. According to ICMR-NIN (2024) and Food Safety and Standards Authority of India standards, fortified edible oil provides approximately 110–160 IU/day, while fortified milk provides 200 IU/day, assuming average adult intake of 25–30 g oil + 250 mL milk/day, together covering only about two-thirds of the RDA.^[157,159,160] Hence, supplementation is advisable in high-risk groups (indoor workers, elderly, obese, or malabsorptive states).
131. Gupta's review underlines that even apparently healthy Indians show low serum 25(OH)D levels, supporting universal supplementation, initial correction followed by maintenance dosing until widespread and effective food fortification becomes a reality (Grade B).^[157,161]
132. Measurement of serum 25(OH)D is recommended in individuals at risk of Vitamin D deficiency, including those with osteoporosis, fragility fractures, malabsorption, chronic kidney or liver disease, obesity, or limited sun exposure. Routine screening of the general population is not recommended (Grade A).^[134,135]
133. Cholecalciferol is preferred for the correction and maintenance of Vitamin D deficiency; aim for a serum 25(OH)D level of 40–60 ng/mL. Doses ≤ 4000 IU/day are safe; toxicity occurs with $>10,000$ IU/day (Grade B).^[162,163]
134. Cholecalciferol (Vitamin D₃) is available in oral tablets, capsules, granules, nanoemulsions, and spray forms, typically in doses of 1000 IU, 2000 IU, and 60,000 IU.
135. Intramuscular preparations (300,000–600,000 IU per ampoule) are cost-effective and particularly useful in patients with malabsorption, poor adherence, or intolerance to oral therapy. However, they may cause injection-site discomfort and yield variable serum 25(OH)D levels.

136. The choice between daily and bolus dosing remains debated. The Endocrine Society (USA) recommends daily dosing for physiological mimicry, yet adherence challenges are common with long-term daily use.^[135]
137. Bolus regimens, weekly or monthly, are supported by Vitamin D's long half-life and comparable ability to sustain 25(OH)D and PTH levels over time, as excess Vitamin D is stored in adipose tissue and released gradually.
138. Thus, daily, weekly, or monthly schedules may be selected based on patient preference, likelihood of adherence, and clinical context, provided the cumulative dose remains within recommended limits.^[135,137,164]

Management

139. **Vitamin D deficiency (<20 ng/ml/<50 nmol/L):** cholecalciferol (Vitamin D3), 60,000 IU/orally once a week for 12 weeks, preferably with milk or 2000 IU/day.
140. **Vitamin D insufficiency (20–30 ng/ml/50–75 nmol/L):** cholecalciferol (Vitamin D3), 60,000 IU/orally once a week for 8 weeks, preferably with milk or 2000 IU/day.
141. One IM injection of 600,000 IU is given to correct the deficiency (not to be repeated for 3 months and may be given after confirmation of persistent low Vitamin D levels).
142. **Caution:** Always combine with adequate calcium intake (dietary or supplemental) for bone benefits. Higher doses may be required in obesity, malabsorption, and chronic kidney disease.
143. **All regimes are to be followed by maintenance therapy.**
144. **Maintenance therapy:** Cholecalciferol 60,000 IU once a month in summer or twice a month in winter. Vitamin D supplements of 2000 IU/day, or Injection of Cholecalciferol 300,000 IU IM, twice a year or 600,000 IU IM once a year,^[78,136,165] or exposure to sunlight in the recommended time and duration.
145. Calcitriol (0.25–0.5 µg/day) and Alfacalcidol are indicated only in chronic renal or hepatic disease with impaired Vitamin D activation. Their use mandates monitoring of calcium and renal function due to the risk of hypercalcemia, hypercalciuria, and nephrocalcinosis (Grade A).^[166,167]
146. **Vitamin K supplementation:** 180–350 µg/day of Vitamin K2-7 may be considered along with calcium, magnesium, Vitamin D, and a balanced diet. The current RDA (WHO/FAO) of 65–80 µg/day is considered inadequate. Suggested intake is ≥100 µg/day throughout life, with higher doses when indicated. Vitamin K supports both bone health and cardiovascular health in women with osteoporosis (Grade C).^[168]

Pharmacological management of postmenopausal osteoporosis: Prevention versus treatment

147. Prevention refers to interventions aimed at halting or slowing bone loss in postmenopausal women with low bone mass (T-score between –1.0 and –2.5) and increased fracture risk. Treatment refers to the use of pharmacological agents to reduce fracture risk in women with established osteoporosis (T-score <–2.5 or presence of a fragility fracture).^[78]

Indications for pharmacotherapy

The clear indications for pharmacotherapy are a history of fragility fractures, osteoporosis defined by DXA, and low bone mass with 10-year HF probability >3% OR a 10-year major OP fracture probability >20% (FRAX).

148. **Categorization according to risk of fracture:** Management is based on the concept of stratifying women into low, intermediate, high, or very high-risk categories according to BMD and clinical risk factors [Table 3].
149. **In the absence of DXA:** Treatment decisions are based on the outcomes of FRAX and OSTA [Table 3].
150. **Choice of medication:** depends on fracture risk level, drug-related (risk-benefit), patient profile (age, years since menopause, symptoms, and comorbidities), and environment-related factors (economics and social).
151. Patients should be educated about PMO and its treatment and empowered to participate in shared decision-making to improve adherence. Oral health and the warning signs of atypical femoral fractures are discussed.
152. Calcium and Vitamin D cotherapy is mandatory to optimize outcomes (Grade A).^[78,169]
153. There are no direct head-to-head randomized trials comparing the fracture-reduction efficacy of different osteoporosis drugs; available evidence is derived primarily from placebo-controlled studies and indirect comparisons. Details of individual drug efficacy, safety, and indications are summarized in the accompanying tables (Grade B).^[121]
154. **Refer to endocrinologist/specialist:** Special groups such as the premenopausal woman, breast cancer survivors on endocrine therapy, those with secondary causes of osteoporosis, very high risk for fracture, and nonresponders to treatment.

Options of pharmacotherapy

155. **Very high risk for fracture:** specialist referral should be considered. The indications are the presence of single but essential clinical risk factors, such as a recent vertebral fracture (within the last 2 years), ≥2 vertebral fractures (whenever they have occurred), BMD T-score ≤–3.5, and treatment with high-dose glucocorticoids (≥7.5 mg/day of prednisolone or equivalent over 3 months).

156. Refer urgently given rapid loss in bone post initiation of glucocorticoids; while waiting, offer intravenous zoledronate as a first-line treatment option following a HF (Grade A).^[169,170]
157. Teriparatide, abaloparatide, or romosozumab are first-line treatment options in postmenopausal women at very high fracture risk, particularly in those with vertebral fractures (Grade A).^[121,133,171,172]
158. **High risk for fracture:** In EM (within 10 years of menopause) – first line of management is MHT/or bisphosphonates/denosumab. The second line includes teriparatide, abaloparatide, or romosozumab, particularly in those at risk for vertebral fractures. In late menopause (>10 years postmenopause), the first-line management is bisphosphonates/denosumab. The second line includes teriparatide, abaloparatide, or romosozumab, particularly in those at risk for vertebral fractures.
159. **Intermediate risk for fracture:** In EM (within 10 years of menopause) – first line of management is MHT/or bisphosphonates. In case of contraindications, intolerance, or patient preference for ease and compliance, denosumab may be offered. In late menopause (>10 years postmenopause), bisphosphonates is preferred. In cases of contraindications, intolerance/treatment failure, or patient preference for ease and compliance, denosumab may be offered.
160. **Low risk of fracture:** TLM

Follow-up, monitoring, and duration

161. **Follow-up:** Patients should be monitored every 3–6 months initially for 2–3 visits, and thereafter annually for clinical assessment, evaluation of adherence, and monitoring of adverse effects.
162. Monitoring should include symptom review, assessment of compliance, health status, and fall risk, secondary causes, maintain calcium and Vitamin D status/drug-specific laboratory investigations, and periodic BMD measurement every 1–2 years where feasible (Grade A).^[133]
163. During bisphosphonate or denosumab therapy report any oral symptoms such as dental mobility, pain, or swelling any unexplained thigh, groin, or hip pain, and if such symptoms develop, the femur should be imaged.
164. **Investigations during therapy**
 - **Teriparatide:** Serum calcium and creatinine at 1 month and every 6 months
 - **Denosumab:** Serum calcium and 25-hydroxy-Vitamin D before each 6-monthly injection
 - **Zoledronic acid:** Renal function and calcium before each annual infusion
 - **Alendronate:** Symptom review and adherence every 6–12 months.^[121]
165. **Bone turnover markers:** In selected clinical situations and research settings, markers of bone turnover may be used to monitor treatment response and adherence. Recommended markers include serum C-terminal telopeptide (CTX) for bone resorption and serum procollagen type I N-terminal propeptide (PINP) for bone formation.^[133]
Use markers for bone resorption when on antiresorptives and use bone formation markers when on anabolic agents.
After baseline, for resorption markers repeat at three or 6 months and for formation markers at 6 months after treatment has been initiated.
Timing of sample: morning (before 9 am) after an overnight fast for CTX and anytime for PINP.
166. We suggest that DXA should be repeated on the same machine to monitor the response to osteoporosis therapy. Interpretation of serial BMD results must account for measurement precision and least significant change (LSC) to distinguish true change from random variation (Grade B).^[173]
167. The lumbar spine (L1–L4) is the preferred primary site for BMD monitoring, with the hip (total hip and femoral neck) serving as the secondary site. Both sides should be measured routinely for comprehensive treatment monitoring.^[173]
168. Most established osteoporosis therapies produce only modest increases in BMD, and their antifracture efficacy is only partly explained by these changes. Stabilization of BMD without further decline is a marker of effective treatment and reflects reduced bone turnover and fracture risk (Grade A).^[133]
169. Nonresponse to osteoporosis therapy may result from poor adherence, inadequate calcium or Vitamin D status, unrecognized secondary osteoporosis, interfering medications, or suboptimal drug selection and monitoring strategies. Identification and correction of these factors are essential before changing therapy (Grade C).^[133]
170. Duration of therapy has to be individualized depending on the patient's profile, drug used, and response to treatment. Oral bisphosphonates (alendronate, ibandronate, and risedronate) for at least 5 years, zoledronate for at least 3 years, and then reassess fracture risk. Longer durations of treatment, for at least 10 years with oral and 6 years with zoledronate, in special situations. Teriparatide for 24 months (can be given only once in a lifetime), abaloparatide for 18 months, and romosozumab for 12 months.
Denosumab safety and efficacy have been established for 10 years. For MHT: shared decision-making for an extended period of use.

Sequential osteoporosis therapies

171. Sequential therapy in osteoporosis involves strategically transitioning between different classes of medications to optimize bone health outcomes throughout a patient's treatment journey.
172. The optimal sequential therapy approach requires individualized assessment based on fracture risk, prior treatment history, patient factors, and long-term treatment goals, with anabolic-first strategies providing the strongest evidence base for maximizing bone health outcomes.^[174]
173. **Anabolic to antiresorptive sequences (preferred):** an anabolic agent (teriparatide or romosozumab) followed by an antiresorptive (bisphosphonate or denosumab) to maintain BMD gains and ensure long-term fracture protection (Grade B).^[121,175]
174. **Antiresorptive to antiresorptive sequences: Bisphosphonate to denosumab transition**
175. **Denosumab discontinuation is most critical:** requires mandatory sequential therapy due to rapid bone loss, delay/lack of an alternate treatment 6 months after the last denosumab dose, and rebound fracture risk. Denosumab must always be followed by a bisphosphonate, either zoledronate or alendronate, in patients with adequate renal function.^[176-178]
176. **Hormone-based sequential approaches:** Estrogen/MHT/raloxifene-to-bisphosphonate transitions when HRT is discontinued due to age or contraindications.
177. **Between-anabolic agent transitions:** Recent evidence suggests superior efficacy with the teriparatide to romosozumab sequence.
178. **Combination regimens** are typically reserved for very high-risk patients (e.g., multiple prior fractures, extremely low BMD, and imminent fracture risk).
179. **Duration of concurrent therapy varies;** anabolic agents are limited to 12–24 months, while antiresorptives continue per standard maintenance protocols. Monitor for hypercalcemia, orthostatic hypotension (with PTH analogues), and ensure strict adherence to dosing intervals.
180. Tailoring combination therapy requires multidisciplinary assessment, balancing fracture risk reduction with cost, safety, and patient preferences.^[179] Teriparatide + Denosumab Combination.^[180] Hormone Replacement + Bisphosphonate Combinations.^[181]

Menopause hormone therapy

181. MHT may be considered as a first-line treatment in younger postmenopausal women (<60 years or within 10 years of menopause) who are at intermediate and high fracture risk after full risk assessment, provided there are no contraindications (Grade A).^[182-188]
182. Continued use after 60 years is a shared decision based on an individual risk–benefit analysis.^[182-188]
183. Tibolone may be preferable to MHT in symptomatic menopausal women with mammographically dense breast tissue (Grade A).^[189,190]
184. MHT should not be started solely for bone protection after 10 years of menopause (Grade B).^[191,192]
185. Raloxifene is a selective estrogen receptor modulator approved for the prevention and treatment of PMO, mainly with evidence for vertebral fracture and/or breast cancer, especially where bisphosphonates or other agents are unsuitable. No benefit for HF reduction.^[193]
186. **Primary ovarian insufficiency (POI) and EM:** HT should be offered to women with POI and EM, and it can be recommended until the age of natural menopause (Grade B).^[194-196]

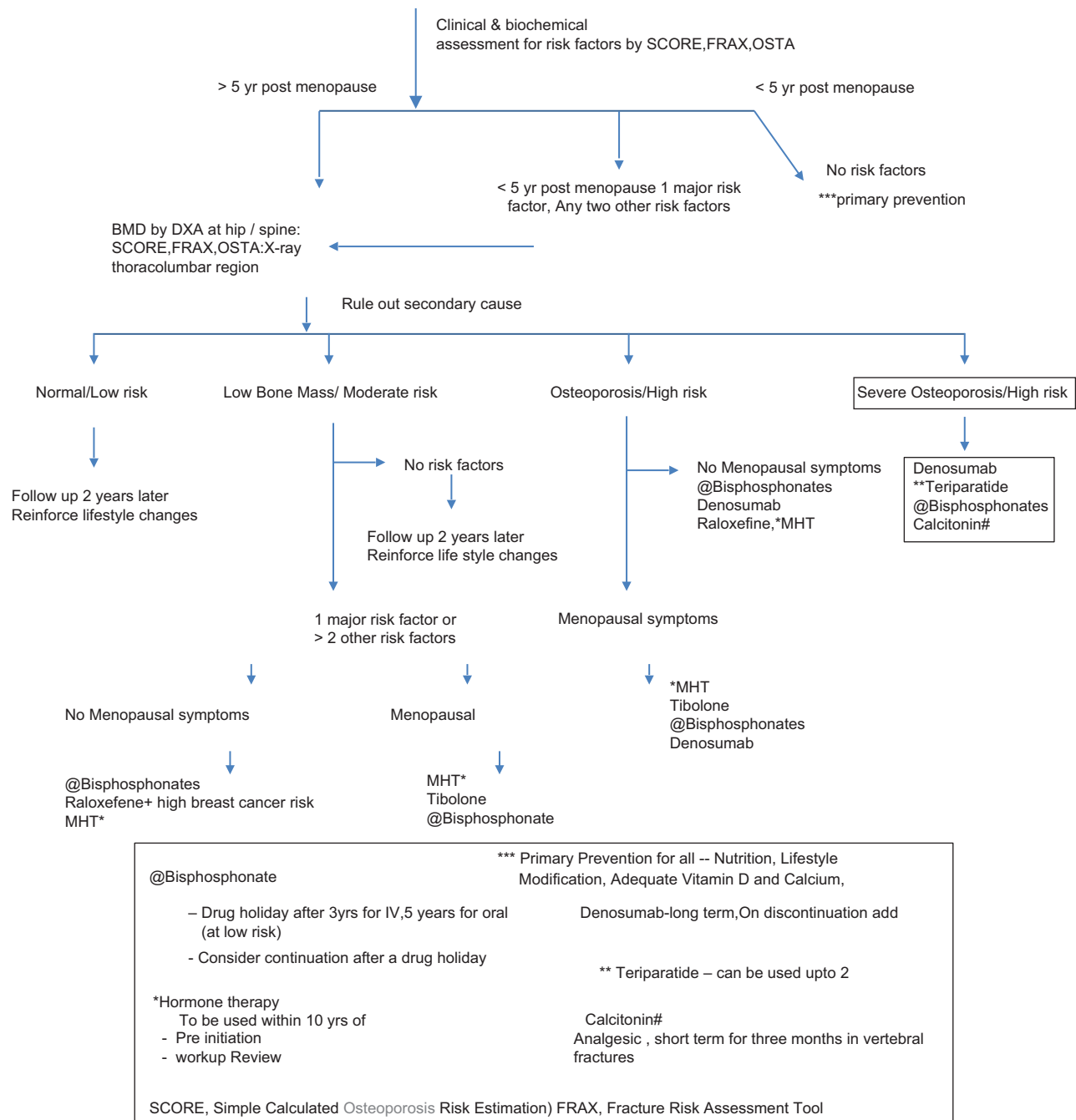
Menopause hormone therapy versus bisphosphonates

187. Both MHT and bisphosphonates effectively reduce osteoporotic fracture risk, but their clinical roles differ according to menopausal stage, risk category, and symptom profile (Grade A).^[133,184,186,197,198]
188. Bisphosphonates do not confer the systemic short- or long-term health benefits of MHT in eligible women, particularly regarding cardiometabolic, urogenital, cognitive, and overall quality-of-life outcomes (Grade B).^[133,184,186,197,198]
189. Bisphosphonates demonstrate additional systemic benefits, including reduced postfracture mortality, lower risk of bone metastases and recurrence in postmenopausal breast cancer, anti-inflammatory effects, and possible cardiovascular and survival advantages in older adults. These effects are most consistent in postmenopausal women and fracture survivors.^[170,199-202]
Refer to Flowcharts 1 and 2 for assessing and managing bone health.

SARCOPAENIA

190. **Sarcopenia:** It is a progressive and generalized skeletal-muscle disorder characterized by low muscle strength and low muscle quantity or quality, with or without impaired physical performance. It is associated with increased risk of falls, fractures, disability, and mortality.^[118,203,204]

Asymptomatic Post Menopausal Woman



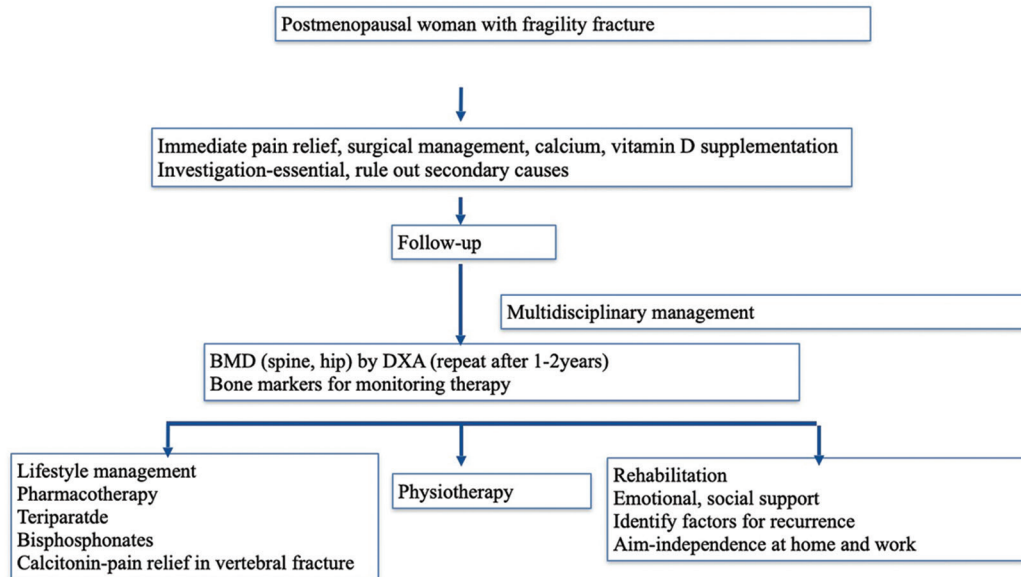
Meeta, Harinarayan CV, Marwah R, Sahay R, Kalra S, Babhulkar S. Clinical practice guidelines on postmenopausal osteoporosis: Indian Menopause Society, 2020

Flowchart 1: Algorithm for assessing and managing bone health

191. According to the South-West Asia Group for Sarcopenia (SWAG-SARCO) definition, developed specifically for South Asia, sarcopenia is identified by a reduction in any two of the following: muscle function, strength, or mass.^[205,206]
192. In India, the prevalence of sarcopenia in older adults is 39%–44% and 19% can have severe sarcopenia.^[207,208]

Screening tools

193. **Calf Circumference (CC) and SARC-F** questionnaire are the initial tools.
194. **Primary:** Measure CC as a part of the initial clinical evaluation. CC is a validated, simple, noninvasive, cost-effective anthropometric measure with high sensitivity and specificity for sarcopenia screening and correlates well with muscle mass (Grade B).^[209-211]

Management After Fracture

Meeta, Harinarayan CV, Marwah R, Sahay R, Kalra S, Babhulkar S. Clinical practice guidelines on postmenopausal osteoporosis: Indian Menopause Society, 2020

Flowchart 2: Management after fracture

195. CC has been validated as a screening tool in Indian studies, with ≤ 32 cm (women) as key thresholds for identifying sarcopenia risk (sensitivity 100%, specificity 60%, NPV 100%, accuracy 80%).^[212]
196. CC should be interpreted with caution in individuals with high or low BMI, as adiposity can affect measurements. Adjusted cut-offs or correction factors may be used.
197. **Protocol:** Measure right calf, standing position, noncompressing tape, largest circumference; note edema/obesity^[209] (consider + 1 cm threshold in obese adults as per Thai data).^[211]
198. India-specific (CC ≤ 32 cm (women)) is a strong screen (Sn 100%, NPV 100%); confirm positives with strength/mass tests.^[212]
199. The Asian Working Group for Sarcopenia and the SWAG-SARCO recommend calf-circumference cut-offs of 34 cm for men and 33 cm for women. The European Working Group on Sarcopenia in Older People-2 uses 31 cm as a universal proxy measure.^[118,203,205] Thai community cohorts: validate 33 cm (women) and suggest + 1 cm for obese adults to improve accuracy.^[211]
200. **SARC-F questionnaire:** It is a self-administered questionnaire, which has five components, including strength, assistance in walking, rising from a chair, climbing stairs, and falls. It is a simple, inexpensive, and convenient method for screening for sarcopenia risk. It has low-to-moderate sensitivity and very high specificity for predicting low muscle strength. SARC-F score: A 3-level score range of 0–2 points for each item. The total score range is 0–10, with scores ≥ 4 indicating sarcopenia risk.^[213]
201. **SARC-CalF:** SARC-CalF adds a calf measurement to the SARC-F questionnaire to make screening more reliable. A score of 11 or above indicates probable sarcopenia. In women, a calf circumference of 33 cm or less adds 10 points to the score. This combined tool detects sarcopenia better than SARC-F alone, both in the community and in clinics.^[214,215]
202. **Diagnosis:** AEWGSOP recommends the use of grip strength or a chair stand to measure muscle function with specific cutoff points for each test.
203. **Grip strength:** Handgrip strength is the most widely used method for measuring muscle strength. This test requires 5 min and a well-calibrated handheld dynamometer. Method-six measures should be taken, three with each arm. Ideally, patients should be encouraged to squeeze as hard as possible for 3–5 s during the measure; the highest of the six measurements is reported as the final result.^[216]
204. **Chair stand test:** It is also known as Chair Rise Test. It assesses lower extremity muscle function. This test requires 1–2 min and uses only a straight-back chair without armrests and a stopwatch. Method - The subject is first asked to stand from a sitting position without using their arms. If they can perform the task, they are then asked to stand up and sit down five times, as quickly as possible, with arms folded across their chests. The time taken to complete five stands is recorded. A chair-stand time >15 s for five rises or low handgrip strength (<16 kg in women; <27 kg in men) indicates reduced muscle strength or possible sarcopenia.^[118]

Other diagnostic methods

205. Assessment of physical performance includes gait speed measurement and the Short Physical Performance Battery (SPPB), incorporating the timed up-and-go test, 400-m walk, or long-distance corridor walk for endurance evaluation. A gait speed of 0.8 m/s suggests poor physical performance in adults aged over 60 years.
206. Assessment of muscle mass by DXA/Bioelectrical Impedance Analysis. BIA, where feasible. Appendicular skeletal muscle index cutoff used in Indian women is $<5.0 \text{ kg/m}^2$.^[217,218]
207. **Case-finding strategy:** Suspect sarcopenia in all women in the geriatric age group. Screening: SARC-F or SARC-CalF may be used for initial screening. A positive screen should prompt an objective assessment. Muscle strength assessment: Handgrip strength (preferred) or the Chair Stand Test may be used. Severity assessment: Gait speed, Short Physical Performance Battery (SPPB), Timed Up and Go Test (TUGT), and 400-m walk test. Muscle mass assessment: DXA or Bioelectrical Impedance Analysis.^[205]
208. **Balance:** In postmenopausal women, impaired balance and postural instability arise from age-related neuromuscular decline (vision, proprioception, reaction time, and muscle strength). Estrogen deficiency may affect muscle coordination and proprioceptive control, and there is limited data on its effects on vestibular signaling (Grade B).^[219]
209. These factors collectively increase fall risk, a major determinant of forearm, hip, and other fragility fractures (Grade B).^[220]
210. Preventive strategies should emphasize strength, balance training, and fall-risk screening, with MHT reserved for bone protection rather than balance improvement.^[221,222]
211. Screening for balance impairment in postmenopausal women should include simple functional assessments, such as the Timed Up and Go test, Functional Reach Test, and one-leg stand, combined with a structured evaluation of fall risk factors (Grade A).^[222-225]
212. **Frailty:** Prevalence ranged from 14.5% in Uttarakhand to 41.3% in Arunachal Pradesh.^[226]
213. Frailty is a multicausal clinical syndrome characterized by a decrease in strength, endurance, and reduction in physiological processes, increasing an individual's susceptibility to the development of dependency and/or death.^[227]
214. **Diagnosis:** The Fried's frailty phenotype tool includes five items: unintentional weight loss (4.5 kg or more over the past year), exhaustion (self-reported), low physical activity, weakness (low grip strength), and walking speed. Individuals with two deficits are considered prefrail, and those with three or more deficits are classified as frail.^[228]
215. **Management:** Sarcopenia and frailty are reversible with early multimodal intervention. The most robust evidence supports progressive resistance training, adequate dietary protein (1.0–1.5 g/kg/day), and Vitamin D sufficiency. Pharmacologic options play only an adjunct role (Grade B).^[229,230]
216. Management of postmenopausal women with balance impairment should incorporate a multifactorial fall prevention approach combining individualized exercise therapy, medication review, vision correction, and footwear optimization consistent with global evidence-based recommendations.^[231,232]

CARDIOVASCULAR DISEASE

217. In women experiencing menopause at the expected age, the MT, along with aging, is associated with metabolic changes that elevate cardiovascular disease (CVD) risk. MT may be considered a window of opportunity to screen and promote preventive measures to reduce the risk of CVD.

Risk factors for cardiovascular disease in women can be divided into three categories:

218. Well-established risk factors such as hypertension, dyslipidemia, diabetes, obesity, unhealthy diet, sedentary lifestyle, and smoking or tobacco use.^[233] A family history of premature CVD (men <55 years, women <65 years) is a strong risk factor and accounts for a major share of Atherosclerotic CVDs (ASCVD) globally, while CKD and chronic inflammatory states further increase risk.^[234]
219. Under-recognized or under-rated risk factors include psychosocial (depression and anxiety); abuse and intimate partner violence (inducing chronic stress); socioeconomic and cultural status, race, and poverty; poor health literacy; and environmental risk factors (air pollution).^[233]
220. Female-specific risk factors such as POI and EM, history of polycystic ovaries (PCO), functional hypothalamic amenorrhea, radiation and chemotherapy for breast cancer, and complications of pregnancy, including preeclampsia, gestational diabetes mellitus, gestational hypertension, preterm delivery, and low-for-estimated-gestational-age birth weight. Other conditions that are not necessarily sex-specific but are female predominant, like certain autoimmune disorders, including, but not limited to, rheumatoid arthritis, systemic lupus erythematosus, and scleroderma.^[233,235-237]

Screening for women aged ≥ 35 years

221. **Promote awareness and education:** Educate clinicians and women that CVD is the leading cause of death in women, exceeding breast cancer mortality.^[238,239]
222. Integrating menopause counselling with CVD risk screening enhances early detection and preventive intervention.^[240]

Risk assessment tools for the prediction of cardiovascular disease

223. The Globorisk and Reynolds risk scores are designed for CVD-naïve women.

Globorisk-India estimates the 10-year probability of a first fatal or nonfatal myocardial infarction (MI) or stroke, not procedure-based events.^[241]

224. The Reynolds risk score estimates the risk of major cardiovascular events (ischaemic stroke, MI, need for coronary revascularizations, or cardiovascular death) in women over 45 years of age.^[242,243]

225. The Framingham Risk Score and ACC/AHA risk calculators are widely used tools; however, they have not been specifically validated or stratified for the Indian population. The QRISK3 score, used in the NHS, incorporates additional factors such as mental illness, autoimmune diseases, and CKD. It has also been applied to South Asian populations living in the United Kingdom.

Globorisk-India (primary recommendation)

226. We recommend using Globorisk-India (laboratory or nonlaboratory version) as the first-line tool for women aged ≥35 years. After estimating baseline risk, reclassify upward if any female-specific risk enhancer is present. Manage according to the revised risk category.^[241,244-252]

227. **Advantages of Globorisk-India (2023):** Include its calibration specifically for the Indian population, availability of both laboratory-based and nonlaboratory versions suitable for urban and rural settings, ease of use via mobile or paper-based tools, and its ability to provide more accurate, context-appropriate risk estimates than Western models. It is also cost-effective, scalable, and well-suited for integration into national women's health and NCD screening programs.^[240,241,245,246]

228. How to calculate Globorisk-India tool

- Access: Use the web calculator at www.globorisk.org or the validated desk/pocket chart
- Collect core data: Age, sex (female), systolic blood pressure (mmHg), BMI or total cholesterol, diabetes (yes/no), and smoking (yes/no)
- Select version: Nonlaboratory for PHC/outreach use. Laboratory-based for hospitals or specialist clinics.

Interpret risk

- <10% = Low → Lifestyle optimization
- 10%–20% = Moderate → Intensified lifestyle ± pharmacotherapy.
- 20% = High → Comprehensive medical management (blood pressure [BP], lipids, glycaemia).

Integrate female-specific modifiers into clinical judgement: Premature or EM (<45 years) history of gestational diabetes, preeclampsia, or polycystic ovary syndrome (PCOS), autoimmune disease, hypothyroidism, or chronic inflammatory disorders.

Upgrade risk category: If any one modifier → move up one tier (Low → Moderate; Moderate → High).

If two or more modifiers or modifier + diabetes/dyslipidemia → move up two tiers.

Document: Globorisk-India = %; upgraded due to-modifier.

229. Reynolds risk score (secondary recommendation)

Reserve for women 45–80 years with no prior CVD but ambiguous results on standard scores. It incorporates hs-CRP to account for inflammation as a risk factor. Also includes familial (parental MI) factor for greater precision in borderline-risk cases.^[242,243] However, the derivation cohort consisted predominantly of white, middle- to upper-socioeconomic status women, which may limit its generalizability.

230. How to calculate the Reynolds risk score

Available online on these two links: https://www.mdcalc.com/calc/3932/reynolds-risk-score-cardiovascular-risk-women?utm_source=reference.medscape.com/calculator/192/reynolds-cad-risk?utm_source=

Reassess every 3–5 years or when major risk factors change.

231. **Atypical clinical presentation:** Women often present without classic exertional chest pain. Instead, symptoms may include fatigue, breathlessness, palpitations, epigastric discomfort, nausea, dizziness, or jaw and back pain rather than retrosternal heaviness. Silent or unrecognized MI is also more common in women, particularly among the elderly and those with diabetes.^[247,253]

Diagnostic and management challenges

232. CVD in women is often under-recognized and under-treated. Standard diagnostic tools, electrocardiogram (ECG), stress testing, and troponin thresholds, may show lower specificity due to sex-based physiological differences.^[254,255]

233. Women more frequently present with nonobstructive or microvascular coronary disease, resulting in normal angiograms despite ischemic symptoms. They have a higher prevalence of endothelial dysfunction and thrombosis, with or without plaque formation, as underlying mechanisms of acute MI. These processes contribute to microvascular ischemia.^[256]

234. Hence, women experience delays in diagnosis, fewer referrals for angiography, and reduced use of guideline-directed therapy, contributing to higher short-term mortality and recurrent angina, mainly from heart failure with preserved ejection fraction.^[257,258]

Early recognition of cardiovascular disease in women

235. **Maintain high clinical suspicion:** CVD should be considered in all women of 35 years presenting with fatigue, dyspnea, palpitations, or epigastric pain, especially with risk factors such as diabetes, hypertension, dyslipidemia, obesity, EM, or family history.^[238,247,253]

236. Absence of classic angina does not exclude ischemia, particularly in women with microvascular dysfunction.^[247,257]

237. **Identify early symptoms:** Women may experience unusual fatigue, poor sleep, anxiety, or exertional breathlessness weeks before acute coronary events, often dismissed as stress or menopause related.^[247,253,259]

238. **Early evaluation:** These prodromal symptoms warrant prompt clinical evaluation and risk screening, rather than attributing these to “stress” or “age.”^[247,253,259]

Optimize diagnostic strategy

239. Use high-sensitivity troponins with sex-specific cutoffs and functional test (stress echo) when ECG or treadmill tests are inconclusive.^[247,257,260]

240. Coronary computed tomography angiography is to be used in false positive cases and is not a screening test. Coronary flow reserve is done during coronary angiography to assess borderline lesions.^[247,257,260]

241. Computed tomography (CT) coronary artery calcification (CAC) is used to assess the extent of the calcified plaque in the coronary arteries. A higher CAC score indicates a higher risk of a coronary event. It is an established tool for stratifying cardiovascular events. It is recommended for use in patients with intermediate ASCVD risk scores or uncertain profiles to more precisely evaluate risks.^[261]

242. Microvascular angina (MVA) is often grouped under the broader ischemia with non-obstructive coronary arteries category, which includes both MVA and vasospastic angina.

243. **INOCA:** If a woman has typical angina symptoms but normal coronary angiography, consider MVA, ischemia caused by dysfunction of small coronary vessels rather than major blockages.^[257,262]

244. Positive stress test, objective ischemia (ST depression, reversible perfusion defect, or stress-induced wall motion change) despite nonobstructive coronaries (<50%) on angiography or CT suggests INOCA.^[257,262]

Prevention and management of cardiovascular disease

245. **TLM:** Robust evidence supports the effectiveness of lifestyle interventions – particularly multifactorial programs that combine dietary modification, regular physical activity, and behavioral counselling in reducing intermediate cardiovascular risk factors in both high-risk individuals and the general population. These interventions consistently demonstrate improvements in BP, lipid profiles, body weight, and glycemic parameters, thereby contributing to both primary and secondary prevention of CVD.^[263-266]

246. **Lifestyle and risk factor:** Smoking cessation remains the single most effective strategy. Behavioral counseling, nicotine-replacement therapy, and pharmacologic support (e.g., varenicline, bupropion) may be considered where appropriate.^[267,268]

247. **Body weight:** Maintain or achieve an ideal body weight. A family-based, structured lifestyle modification program yields a net gain in quality of life and is cost-effective at a three-times gross domestic product per capita threshold.^[269-271]

248. **Physical activity:** Engage in 150 min/week of moderate-intensity aerobic activity (e.g., brisk walking and cycling) or 75 min/week of vigorous-intensity activity, or an equivalent combination.^[272]

249. **Digital and behavioral support tools:** Apps, telecoaching, and wearables can enhance adherence and behavioral outcomes; however, their long-term clinical impact remains uncertain.^[273]

250. **Lipid optimization:** For Indian midlife women, optimal lipid targets should aim for low-density lipoprotein cholesterol (LDL-C) <130 mg/dL in low-risk and <100 mg/dL (preferably <70 mg/dL) in higher-risk groups. Triglycerides <150 mg/dL and high-density lipoprotein cholesterol (HDL-C) >50 mg/dL are desirable. Early initiation of statin therapy is recommended when LDL-C exceeds these thresholds, particularly in the presence of South Asian ethnicity or other female-specific risk enhancers (e.g., premature menopause and gestational diabetes).^[274-277]

251. **Blood pressure optimization:** Midlife women should be counselled on achieving and maintaining BP <120/80 mm Hg through diet, physical activity, weight control, and stress reduction. Pharmacotherapy is indicated for persistent BP >140/90 mm Hg (or >130/80 mm Hg in diabetes).^[278,279]

252. **Dietary approaches to stop hypertension diet:** Limit sodium (<2 g/day), maintain a healthy weight, and engage in 150 min/week of moderate physical activity. These measures lower systolic BP by an average of 4–11 mmHg.^[280,281]

253. **Antihypertensives:** Thiazide diuretics (e.g., chlorthalidone and indapamide) are the preferred first-line antihypertensive agents unless contraindicated. Angiotensin-converting enzyme inhibitors or angiotensin II receptor blockers, and calcium-channel blockers may be added or substituted as required to achieve optimal BP control.^[282]
254. **Glycemic optimization:** For Indian midlife women with diabetes, aim for hemoglobin A1c (HbA1C) <7% through lifestyle optimization with early pharmacologic intensification when needed. This threshold is associated with a substantial reduction in microvascular complications and improvement in overall cardiovascular outcomes (Grade A).^[283-285]
255. **Low-dose aspirin for primary prevention:** Primary prevention in women without risk factors is not recommended at any age. Indian guidelines emphasize that, given the high burden of CVD, low-dose aspirin may be considered only in high-risk women aged 40–60 years (≥two risk factors: diabetes, hypertension, CKD, family history, high LDL/Lp(a), CAC >100) with low bleeding risk, after shared decision-making and risk assessment.^[274,286,287]
256. **Antioxidant, vitamin, and folate supplementation:** Do not use Vitamin E, Vitamin C, multivitamin, folic acid, or B-Vitamin supplements (alone or in combination) for CVD prevention.^[288]
257. **Omega-3 Fatty Acids and Prescription Icosapent Ethyl (icosapentaenoic acid 4 g/day):** Do not recommend routine omega-3 supplements for CVD prevention; consider prescription-strength icosapent ethyl in statin-treated, high-risk women with triglycerides ≥150 mg/dL. Grade A (for icosapent ethyl) and Grade C (for routine omega-3 use).^[289,290]
258. MHT is not indicated solely for primary or secondary cardioprotection (Grade A).^[291-293]
259. MHT initiated early among healthy women with premature or surgical menopause may reduce the adverse consequences of prolonged estrogen deficiency on cardiometabolic health.^[291,294,295]

ENDOCRINE AND METABOLIC HEALTH AT MENOPAUSE

Obesity

260. **Prevalence:** In India, 40% of women are abdominally obese. Among women aged 30–49 years, 5–6 in 10 are affected. Prevalence is higher in older, urban, wealthier, and nonvegetarian women.^[296]
261. In the ICMR – INDIAB study, the prevalence of abdominal obesity was 39.5%, with a higher prevalence in women (49.6%) than in men (28.8%). Among women, prevalence rose with age, from 28.0% at 20–29 years to 46.0%, 55.2%, and 57.9% in the 30–39, 40–49, and 50–59-year groups, before slightly declining to 52.4% among those aged 60 years and above.^[297]
262. **Weight gain and central adiposity:** During the MT, women experience progressive weight gain (0.7 kg/year) and redistribution of fat toward visceral depots, largely due to estrogen decline and related metabolic changes. Aging remains the dominant factor, but dietary excess, physical inactivity, sleep disturbances, and genetic susceptibility further contribute to central adiposity and metabolic risk (Grade A).^[298-303]

Health impact of obesity

263. Obesity and changes in body composition after menopause are major drivers of cardiometabolic diseases such as type 2 diabetes mellitus, dyslipidemia, hypertension, nonalcoholic fatty liver disease, and metabolic syndrome (Grade A).^[304,305]
264. Central and visceral fat accumulation also heightens the risk of gynecologic (endometrial, breast, and ovarian) and nongynecologic malignancies (colorectal, esophageal, kidney, gallbladder, pancreatic, liver, stomach, and thyroid) (Grade A).^[306,307]
265. Obesity is associated with an increased risk of cervical cancer, particularly adenocarcinoma, and with lower detection rates of precancerous lesions, and the association is consistent but less robust than that for endometrial or breast cancer (Grade B).^[308]
267. Beyond cardiometabolic and oncologic consequences, obesity contributes to osteoarthritis, obstructive sleep apnea, gastroesophageal reflux disease, anxiety, depression, urinary incontinence, and dementia, while adversely affecting bone health and health-related quality of life (Grade A).^[309-312]
268. Obesity and breast cancer risk: Obesity has opposite effects on breast cancer risk before and after menopause. Before menopause, higher body weight is generally linked to a lower risk of breast cancer (mainly in European women). After menopause, obesity increases breast cancer risk in women from Asia, Europe, North America, and Africa, mainly because fat tissue produces more estrogen through peripheral aromatization (Grade A).^[313-316]
269. Based on body fat percentage and morbidity data, normal BMI thresholds are lower and narrower in Asian Indians than in Western populations. Obesity should be identified and managed earlier due to the higher metabolic risk at lower BMI levels^[317] [Table 6].
270. Waist circumference is a simple, reproducible, and robust predictor of cardiometabolic risk and should be routinely measured in clinical practice to monitor the impact of lifestyle and pharmacologic interventions^[317-319] [Table 7].

Table 6: Body mass index in kg/m² category and management

Category	WHO	Indian	Intervention
Underweight	<18.5	<18	Encourage balanced diet and exercise
Healthy	18.5–24.9	18.0–22.9	Encourage balanced diet and exercise
Overweight	25.0–29.9	23.0–24.9	TLM
Obese Grade I	30.0–34.9	>25	TLM plus drug therapy if comorbidities exist*
Obese Grade II	35.0–39.9		TLM plus drug therapy: If comorbidities exist, bariatric surgery*
Obese Grade III	>40		TLM, drug therapy, and bariatric surgery

*Comorbidities: Hypertension, diabetes, and hyperlipidemia. WHO: World Health Organization, TLM: Therapeutic lifestyle management

Table 7: Obesity is defined by waist circumference

WHO (cm)	Indian (cm)	Management
>80	>72	Action line 1 - avoid weight gain or lose weight
>88	>80	Action line 2 - supervised weight management

WHO: World Health Organization

Management

271. Management should involve primary physicians, dietitians, exercise physiologists, mental health professionals, endocrinologists, and gynecologists.
Healthcare providers should be trained in midlife obesity management and menopausal counselling.
272. TLM remains the cornerstone of obesity management in midlife and postmenopausal women (Grade A).^[319-321] Refer to Section 6.
273. Behavioral Techniques: Use goal setting, motivational interviewing, and digital self-monitoring to enhance adherence. Apply problem-solving and cognitive restructuring to manage negative thoughts, with ongoing feedback and relapse prevention for sustained success (Grade A).^[319]
274. Weight Loss Goals: Target a BMI ≤ 23 kg/m² with gradual weight loss of 0.5 kg/week, aiming for a 5%–10% reduction over 6 months, by decreasing calories, particularly carbohydrates, and increasing physical activity. Sustained success requires family and social support to maintain motivation and adherence (Grade C).^[319]
275. Monitoring and follow-up: intervention phase I: Provide intensive counseling with bimonthly progressing to monthly follow-ups (in-person or telehealth) (Grade A).^[319]
Maintenance phase: Ensure lifelong engagement with 3-monthly in-person and monthly digital reviews.
276. Encourage self-monitoring of weight, diet, physical activity, and metabolic or menopausal parameters using digital or app-based tools.^[319-321]

Pharmacologic and surgical management of obesity

277. If $\geq 5\%$ weight loss is not achieved after 6 months of intensive lifestyle therapy, initiate anti-obesity medication for women with a BMI ≥ 27 kg/m² alongside ongoing lifestyle measures.^[320-323]
278. First line: Glucagon-like peptide-1 (GLP-1) receptor agonists such as semaglutide 2.4 mg weekly, liraglutide 3.0 mg daily, or tirzepatide 2.5 mg, starting with smaller doses and gradually increasing the dose to prevent GI side effects. They are most effective for sustained weight loss and cardiometabolic benefits (Grade A).^[324]
279. Second line: When GLP-1 receptor agonists are contraindicated, unavailable, or unaffordable, use phentermine/topiramate, bupropion/naltrexone, or orlistat, selected based on tolerance and comorbidities.
280. Metformin: Not classified as an anti-obesity drug. Recommended only in obese women with insulin resistance, prediabetes, or PCOS, where it improves insulin sensitivity and may modestly reduce weight (Grade B).^[325]

Diabetes mellitus

281. Approximately one in five adults aged ≥ 45 years in India, equating to about 50.4 million people, have diabetes, and 43% remain undiagnosed, underscoring a major public health challenge. Driven by urbanization, central obesity, sedentary lifestyles, and genetic predisposition (Grade A).^[326,327]
282. Among postmenopausal Indian women, the prevalence of diabetes is approximately 12% based on the multicentric hospital-based study by the IMS.^[68] Among rural peri- and postmenopausal women, the prevalence was higher at 25%.^[327] The ICMR-INDIAB study (unpublished data) estimates a prevalence of about 18% in postmenopausal women in India.
283. Opportunistic screening for diabetes mellitus should be initiated in all women above the age of 30 years, and every 3 years in younger women with risk factors such as obesity, family history, gestational diabetes, PCO, or hypertension (Grade C).^[68,328]

284. Use of the Indian diabetes risk score (IDRS) provides a no-cost, non-invasive, simple, and easily applicable tool for diabetes screening in mass screening programmes. IDRS consists of four components – age, abdominal obesity, family history of diabetes, and physical activity, with a maximum score of 100.^[329,330]
285. The preferred laboratory tests for screening are fasting plasma glucose (FPG) or nonfasting HbA1c (Grade A).^[328]
 - If FPG <100 mg/dL or HbA1c <5.7%, repeat testing every 3 years is recommended
 - If FPG 100–125 mg/dL or HbA1c 5.7%–6.4%, repeat testing at 1–3-year intervals is advised.
286. Prediabetes is defined as FPG 100–125 mg/dL or HbA1c 5.7%–6.4%.^[328]
287. Midlife women with diabetes require preventive strategies for cardiovascular health, osteoporosis, and cancer screening, addressing sex-specific risks (Grade B).^[331]
288. All women with diabetes should undergo annual screening for hypertension, dyslipidemia, and microalbuminuria, and have a comprehensive eye examination to detect retinopathy and other microvascular complications (Grade A).^[328]
289. Maintain HbA1c <7% with strict control of BP, lipids, and weight to reduce cardiovascular and microvascular risk (Grade A).^[328]
290. **MHT in women with Type 2 diabetes:** Use MHT for symptomatic relief of VMS and genitourinary syndrome of menopause, with secondary improvement in sleep and quality of life and a potential metabolic benefit (Grade B).^[296,332-334] MHT is not indicated for glycemic control.
291. Oral MHT on accepted indications exerts a more substantial favourable effect on glucose metabolism and insulin sensitivity and may reduce the incidence of type 2 diabetes in women without prior disease (Grade A).^[295,332,333] MHT is not to be prescribed for the prevention of diabetes.
292. Transdermal MHT is preferred in women with obesity, metabolic syndrome, or established type 2 diabetes who are at higher risk of thrombosis, hypertension, or hypertriglyceridemia, as it bypasses hepatic first-pass metabolism and has neutral effects on triglycerides and CRP (Grade A).^[295,332,333]
293. **MHT in women with type 1 diabetes:** In type 1 diabetes, data on MHT are sparse and inconclusive; MHT should be used only for usual menopausal indications and not for glycaemic or metabolic benefit (Grade C).^[333-335]

Thyroid disease

294. The prevalence of hypothyroidism among postmenopausal Indian women ranges from 3% to 7% in hospital-based studies MHT is not contraindicated in thyroid disorders.^[336]
295. Hypothyroidism is significantly more common in older women compared with younger individuals and may be influenced by age at natural menopause and autoimmune susceptibility (Grade A).^[337]
296. Clinical features include lethargy, constipation, dry skin, alopecia, memory impairment, and depression; affected women are often overweight or obese and may have elevated cholesterol and low HDL.^[338]
297. Early recognition is essential, as thyroid dysfunction can exacerbate menopausal symptoms, increase cardiovascular risk, and mimic cognitive or affective disorders in midlife women (Grade A).^[339,340]
298. Routine screening for thyroid dysfunction has been recommended by the IMS 2019–2020 as part of midlife health evaluation (Grade C).^[341] The initial test should be serum TSH, with free thyroxine (FT4) estimation only if TSH is abnormal or when clinical suspicion is high (Grade C).^[341]
299. Screening is particularly relevant in symptomatic women, those with autoimmune disease, dyslipidemia, obesity, or early/late menopause, as thyroid dysfunction may mimic menopausal symptoms and exacerbate cardiovascular or metabolic risk (Grade B).^[340]
300. **Subclinical hypothyroidism:** Routine L-thyroxine therapy is not recommended for asymptomatic postmenopausal women with TSH <10 mIU/L. Periodic TSH monitoring every 6–12 months is advised (Grade A).^[342,343]
301. Treatment should be considered if TSH ≥10 mIU/L, symptoms persist, or if there is positive thyroid peroxidase antibody, cardiovascular risk, or MHT initiation planned (Grade A).^[344]
302. In elderly women and those with CVD or risk factors, therapy should begin with a low starting dose (typically 25–50 µg daily), with dose increments every 2–4 weeks until optimal TSH and FT4 levels are achieved (Grade A).^[344] Gradual titration minimizes the risk of precipitating angina, arrhythmias, or cardiac ischemia in susceptible individuals.
303. TSH should be monitored every 6–8 weeks after dose adjustment, then annually once stable (Grade A).^[345]
304. Overtreatment with L-thyroxine resulting in suppressed TSH (<0.1 mIU/L) is associated with a significantly increased risk of atrial fibrillation, coronary heart disease events, and bone loss leading to osteoporotic fractures in postmenopausal women (Grade A).^[340,346,347]

MULTISYSTEM HEALTH AT MENOPAUSE

305. **Liver hemangiomas:** Clinical reviews and observational data report that hormone exposure, such as estrogen therapy and pregnancy, has been associated with accelerated growth of hepatic hemangiomas, although clinically significant progression is uncommon.^[348]

306. MHT may be considered with caution when a valid indication exists, provided the hemangioma is well characterized and not symptomatic or at risk for complications such as compression or rupture.^[327] Use of low-dose, transdermal estrogen (less hepatic first pass) is preferred. Routine ultrasonographic surveillance is recommended, particularly in women with larger lesions or multiple hemangiomas.^[349]
307. **Anemia** remains highly prevalent among older Indian adults, with pooled estimates ranging from 52% to 73% and a consolidated meta-estimate of 68.3% (95% confidence interval [CI]: 60.7%–75.9%).^[350] Nutritional deficiency remains a major contributor (iron, B12, folate), but a substantial proportion is due to chronic diseases/inflammation/multifactorial etiologies in older adults.^[351,352]
308. Anaemia aggravates menopausal symptoms, contributing to fatigue, cognitive decline, and mood disturbance.^[353] Screening for anaemia and its nutritional causes should be part of the baseline menopause workup and the periodic health evaluation after 40 years (Grade B).^[354]
309. **Ocular health:** Visual impairment and blindness increase with age, female sex, and low socioeconomic status, with most causes being preventable or treatable. Hormonal changes after menopause may accelerate degenerative ocular conditions such as glaucoma, age-related macular degeneration, and cataracts through oxidative stress, vascular dysregulation, and loss of estrogen-mediated neuroprotection.^[355-358] However, MHT should not be prescribed solely for ocular symptoms; the decision must be individualized based on systemic benefits and risks. Collaborative management between menopause specialists and ophthalmologists is advised (Grade B).^[359,360]
310. **Prevention and screening:** Baseline vision and ocular evaluation (visual acuity, refraction, and fundus) should be part of the menopause workup; in asymptomatic women over 40, a routine eye examination every 2–3 years is reasonable. Annual screening is advised in those with diabetes, hypertension, autoimmune disease, or long-term MHT or corticosteroid use (Grade B).^[361]
311. **Oral health:** Periodontal disease, tooth loss, and xerostomia increase after menopause due to estrogen deficiency, which accelerates alveolar bone resorption and alters oral microbiota.^[362]
312. **Auditory health:** May decline after menopause due to estrogen-related vascular and cochlear changes, contributing to impaired hearing acuity, tinnitus, and reduced sound discrimination.^[363] Routine oral and hearing assessments should be part of a comprehensive midlife health evaluation (Grade B).^[364]
313. **Skin:** Estrogen decline during menopause leads to a 2% loss of dermal collagen per postmenopausal year, reduced elastin, sebum, and glycosaminoglycans, resulting in thinning, dryness, and reduced skin tensile strength.^[365]
314. Although systemic MHT provides documented secondary benefits for skin collagen, elasticity, and hydration, it is not primarily prescribed for cutaneous or aesthetic indications; these dermatologic benefits are more pronounced with early initiation.^[366,367]

MICROBIOTA AND MENOPAUSE

315. Estrogen decline during menopause leads to alterations in the gut, vaginal, and urinary microbiota, which disrupts mucosal immunity, epithelial integrity, and microbial diversity (Grade A).^[368]
316. Diets rich in fibre, fermented foods, and probiotics may support microbial diversity and estrogen metabolism (Grade B).^[369-372] Local estrogen therapy helps restore vaginal *Lactobacillus* dominance (Grade A).^[373]

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SECTION 4

GYNECOLOGICAL SYSTEMS AND MENOPAUSE

Endometriosis

1. Women with endometriosis face a higher risk of earlier menopause (1–3 years), with a 7-fold increase in surgical menopause occurring approximately 19 months earlier and natural menopause occurring about 5 months earlier. This is due to repeated ovarian inflammation, surgeries such as endometrioma excision, and decreased ovarian reserve (Grade B).^[1-3]
2. Postmenopausal active endometriosis is rare, representing about 2%–5% of all endometriosis cases. It may persist or reactivate due to stimulation of residual endometrial implants by exogenous estrogen therapy or obesity-related peripheral aromatization (Grade C).^[4] Endometriosis can also arise *de novo* from local estrogen biosynthesis within ectopic lesions through celomic metaplasia or activation of pluripotent stem cells (Grade C).^[5-7]
3. Postmenopausal endometriosis may show a higher tendency to infiltrate, affecting extragonadal areas such as the bowel, bladder, ureter, or surgical scars (Grade B).^[8,9] It also carries a small but clinically important risk of turning malignant, most commonly endometrioid or clear cell carcinoma originating from ovarian or extragonadal sites (Grade B).^[8,9]
4. The likelihood of malignant transformation increases with prolonged exposure to unopposed estrogen or persistent residual endometriotic disease. Malignancy should be considered if endometriotic lesions enlarge, become nodular, or present with new-onset postmenopausal bleeding or pelvic pain (Grade C).^[10]
5. Vigilant clinical follow-up and histopathological assessment of any enlarging or symptomatic lesion are crucial (Grade C).^[9,10] Magnetic resonance imaging (MRI) is the preferred imaging modality for evaluation (Grade B).^[10]
6. Surgery should be the initial treatment choice for postmenopausal endometriosis to rule out cancer and ensure complete removal, ideally through total laparoscopic hysterectomy with bilateral salpingo-oophorectomy (TLH BSO) and removal of all visible implants (Grade C).^[11]
7. If surgery is not an option, continuous progestogens or an aromatase inhibitor (AI), possibly combined with add-back therapy, can be used to manage the symptoms of postmenopausal endometriosis (Grade C).^[11]
8. In women with surgical menopause and a history of endometriosis, continuous combined menopausal hormone therapy (ccMHT) or tibolone is preferred for vasomotor symptoms (VMS) and bone protection and to gain the benefits of avoiding disease recurrence after complete excision (Grade B).^[11,12] The benefits of ccMHT versus estrogen alone in endometriosis are not well established (Grade B);^[1,13] however, it is preferable to avoid unopposed estrogen, as it can stimulate the remaining endometriotic tissue or elevate the risk of cancerous changes.^[1,10,14]
9. For women with a history of endometriosis and intact uterus and ovaries, low-dose oral estrogen and LNG-IUS may be used to manage VMS (Grade B).^[11] Cyclic regimens should be avoided to prevent reactivation of lesions (Grade C).^[11]
10. Regular monitoring includes baseline and periodic pelvic examinations, targeted ultrasound or MRI for new pelvic pain or bleeding, and bone mineral density (BMD) monitoring during AI therapy (Grade B).^[11,12]

Adenomyosis

11. Adenomyosis is an estrogen-dependent condition that usually becomes clinically inactive or less active after natural or surgical menopause; symptomatic postmenopausal adenomyosis is rare (Grade C).^[15,16] If indicated, MHT is administered as ccMHT or tibolone, and continued clinical vigilance for recurrence, abnormal bleeding, or uterine enlargement is suggested (Grade C).^[16]

Fibroid

12. Uterine fibroids are benign smooth muscle tumors that respond to hormones with high levels of estrogen receptor (ER) and progesterone receptor (PR). They usually shrink after menopause when ovarian steroid hormone levels decline (Grade B).^[17]
13. Persistent or enlarging uterine fibroids in postmenopausal women, especially in the setting of continuous estrogen exposure, such as obesity or exogenous MHT, require thorough evaluation to exclude uterine sarcoma, although this remains a rare occurrence (Grade B).^[17-21]
14. Management: At menopausal transition (MT) – Refer to Section 2. In postmenopausal women with fibroids, ccMHT is preferred over sequential therapy because it causes little or no significant change in fibroid volume (Grade B)^[22] and results in fewer bleeding episodes. The reported effects of MHT on fibroid size are variable (Grade C).^[23]
15. Tibolone (2.5 mg/day) effectively relieves menopausal symptoms without significantly increasing the uterine or fibroid size over 1–3 years. Randomized controlled trials (RCTs) indicate that, unlike standard MHT, tibolone is largely neutral toward fibroids (Grade B).^[22,24,25]
16. Clinical follow-up with pelvic examination and targeted imaging is recommended only if new bleeding, pelvic pain, or uterine enlargement occurs. Routine imaging surveillance is not advised for asymptomatic women (Grade B).^[22,23]

Polycystic ovarian syndrome

17. Women with polycystic ovarian syndrome (PCOS) tend to experience delayed menopause, usually by 2–4 years, due to chronic anovulation and preservation of the follicular pool (Grade B).^[26,27]
18. In PCOS, increased androgen secretion by ovarian theca cells (functional ovarian hyperandrogenism) is a key defect.^[28]
19. MT does not seem to worsen the cardiometabolic profile in most women with PCOS; the phenotypic subtypes, hyperandrogenic versus normoandrogenic, obese versus lean, largely determine long-term cardiometabolic risk and the need for individualized follow-up and management (Grade B).^[29-32]
20. The nonhyperandrogenic phenotype exhibits limited long-term metabolic risk after reproductive hormone stabilization, and routine midlife screening is sufficient (Grade C).^[31,32]
21. Women with current or past hyperandrogenic PCOS, especially those with persistent androgen excess or metabolic syndrome, are at risk of developing cardiometabolic disease, endometrial hyperplasia or carcinoma during and after menopause (Grade B).^[33,34] They require ongoing cardiometabolic monitoring, lifestyle adjustments, and careful and personalized use of MHT (Grade B).^[35,36]

Adnexa

22. Age-related decline of estrogen at menopause results in atrophic and fibrotic changes in the ovaries and fallopian tubes, which reduce follicular reserve, vascularity, and mucosal immunity.^[37]
23. After menopause, hydrosalpinx and paratubal cysts are usually residual benign consequences of previous inflammation or surgery rather than newly developed lesions. The decrease in estrogen diminishes tubal activity and cyst formation.
24. No intervention is necessary unless the lesions are symptomatic, large, or exhibit imaging features indicative of malignancy (Grade B).^[38,39]
25. Prophylactic salpingectomy during hysterectomy (recommended) or salpingectomy (suggested in high risk with counselling) is recommended to lower the risk of epithelial ovarian cancer by removing the tubal origin of cancer (Grade A).^[40-42]
26. Simple cysts and paraovarian cysts are common benign findings after menopause, and most represent retention or inclusion cysts caused by surface invagination rather than neoplasia. Many of these cysts resolve spontaneously, remain stable, or decrease in size over time (Grade A).^[43]
27. A CA-125 test followed by an initial 3–6 months and then annual transvaginal sonography is sufficient for postmenopausal simple cysts (<5 cm, unilocular, thin-walled, and without septations or solid components) (Grade A).^[44-46] Doppler evaluation is not routinely recommended in these cases but should be performed when complex morphology or vascularized solid areas are detected (Grade A).^[44-46]
28. In postmenopausal women, complex or enlarging adnexal cysts, mural nodularity, or raised CA-125 levels indicate increased malignant potential (particularly serous or mucinous cystadenomas or borderline epithelial tumors) and require surgical evaluation and histopathological confirmation (Grade A).^[47,48]
29. The use of transvaginal descriptors, such as the Ovarian of transvaginal descriptors, such (O-RADS) or International Ovarian Tumor Analysis (IOTA) systems, provides standardized, evidence-based frameworks for evaluating adnexal masses in postmenopausal women.^[46,49]
30. Indian studies confirm that IOTA Simple Rules, ADNEX, and O-RADS are accurate and practical tools for the evaluation of adnexal masses in routine practice (Grade B).^[50-53]
31. Hormone replacement therapy (HRT) is not recommended for adnexal atrophy. However, ccMHT or tibolone may be utilized in perimenopausal or surgically menopausal women with residual pelvic endometriosis or pelvic adhesion-related pain under close monitoring to prevent reactivation (Grade B).^[54-56]

Vulva

32. Menopause is a physiological transition characterized by declining estrogen and androgen levels, resulting in reduced vulvovaginal tissue elasticity and resilience and is part of genitourinary syndrome.
33. Reduced dermal collagen, decreased sebaceous and sweat gland activity, and weakened mucosal immunity lead to impaired epithelial repair, dysbiosis of the vulval microbiota, and increased pH, making the vulval epithelium more vulnerable to chronic irritation, recurrent infections, and inflammatory dermatoses.^[57,58]
34. Benign vulval dermatoses such as lichen sclerosus, lichen planus, lichen simplex chronicus, and nonhuman papillomavirus-related vulvar intraepithelial neoplasia are more commonly seen after menopause. Chronic inflammation, tissue fragility, and pruritus are typical features.^[57,58]
35. MHT has no curative role in these disorders; symptom management and disease remission rely on topical high-potency corticosteroids, bland emollients, avoidance of irritants, and long-term monitoring to detect malignant transformation (Grade B).^[57,58] Interdisciplinary care involving gynecologists and dermatologists enhances diagnostic accuracy and quality of life.^[57,58]

ABNORMAL MENOPAUSE

Delayed menopause/late-onset menopause: Definition and health consequences – Refer to Section 1

36. Twin and genomic studies indicate strong heritability, while longitudinal cohort data emphasize the roles of endocrine, environmental, and life-course factors, including family history, parity, nutrition, and lifestyle determinants.^[59-63]
37. Screening and management: Robust data are lacking, and the protocols remain similar to those with the natural age at menopause. The absolute risk of endometrial carcinoma in asymptomatic women remains low; therefore, routine endometrial evaluation is not recommended based solely on delayed menopause. Evaluation should be triggered by symptoms such as bleeding and tailored to individual risk factors (Grade B).^[64]

Premature ovarian insufficiency: Definition and diagnosis – Refer to Section 1

38. A common issue in premature ovarian insufficiency (POI) is diagnostic delay, often spanning 2–5 years. Although direct causal data are limited, strong evidence indicates that untreated POI accelerates bone loss and raises the risk of cardiometabolic and other health issues, emphasizing the importance of prompt diagnosis and hormone therapy (HT) initiation (Grade B).^[65-68]
39. Comprehensive and personalized management, including informed counseling, assessment of fertility goals, optimization of general health, lifestyle modification, and HT, forms the foundation of care for women with POI.^[69]
40. Systemic HRT should be initiated early after diagnosis and continued until the expected age of natural menopause (ANM) to reduce skeletal, cardiovascular, and neurocognitive sequelae and preserve quality of life (Grade B).^[70-72]
41. Screening and pre-MHT workup protocols are primarily similar to those for natural menopause, with a particular focus on bone health assessment.^[73] DXA should be performed at diagnosis to assess both BMD and body composition, given the high prevalence of early bone loss and sarcopenia.^[73,74]
42. Although women with POI are often beyond the age of peak bone mass, their bone loss results from reversible hypoestrogenism rather than from senile bone remodeling. Therefore, Z-scores (age-matched comparisons) are preferred for diagnosis, reserving T-scores for long-term postmenopausal follow-up.^[73-76]
43. Current RCT evidence supports the use of HRT versus OCP, and final comparative results are expected from the Premature Ovarian Insufficiency Study of Effectiveness of Hormonal Therapy.^[77-79]
44. In asymptomatic women with POI, high-quality randomized data are limited; however, current evidence and international guidelines consistently recommend HRT to improve the quality of life and reduce the risks of bone loss, cardiovascular disease, and cognitive decline associated with prolonged hypoestrogenism until the usual ANM (Grade B).^[73,80-84]
45. Androgen therapy should only be considered for select, estrogen-replete women with persistent sexual symptoms; transdermal testosterone is preferred where available, but currently, no licensed preparation for women exists in India (Grade B).^[85]

EARLY MENOPAUSE

46. Early menopause (EM) is not classified as POI but signifies the physiological end of the continuum of the pathological state of accelerated ovarian aging. Both conditions share pathophysiological pathways and long-term health consequences, differing only in age threshold and severity of health outcomes.^[83,84,86]
47. Women experiencing EM should be offered appropriate-dose systemic HT. While robust data are limited, observational studies and biological reasoning support HT to preserve bone health and potentially decrease the risk of cardiometabolic and neurocognitive complications associated with prolonged hypoestrogenism.
48. Therapy should be continued until the ANM, at which point the risks and benefits should be re-assessed.^[80,86-88]

IATROGENIC (SURGICAL AND INDUCED) MENOPAUSE

49. Iatrogenic menopause refers to the loss of ovarian function caused by medical or surgical interventions, such as indicated or prophylactic bilateral oophorectomy, pelvic radiotherapy, chemotherapy, or ovarian ablation for malignancy.^[81,84]
50. Systematic reviews suggest that hysterectomy for benign reasons, even with ovarian preservation, leads to earlier ovarian failure and menopause onset compared to women who retain their uterus (Grade B).^[89-92]
51. The primary reasons for surgical menopause include both clinical and nonclinical indications. Heavy menstrual bleeding, often caused by fibroids or adenomyosis, and uterine prolapse are the most common reasons for hysterectomy in India.^[93,94]
52. Nonclinical factors include lower education, poorer households, a concentration of procedures within the private sector, and limited access to conservative or minimally invasive alternatives.^[95]
53. The Indian Council of Medical Research strongly warns against performing hysterectomy and surgical castration without medical indication. Every clinician must ensure a clear medical justification, document informed consent, preserve the ovaries whenever possible, and advise women on the lifelong health effects of premature estrogen loss.^[96-100]

54. Women experiencing iatrogenic menopause should receive multidisciplinary care involving gynecologists, oncologists, and endocrinologists. In the absence of contraindications, physiologic-dose MHT should be initiated soon after surgery or the completion of oncologic therapy and continued until the expected ANM.
55. Early counseling, personalized risk assessment, and preventive lifestyle advice should be incorporated into all treatment pathways where ovarian failure is expected, ensuring that women receive timely information and access to fertility preservation options before gonadotoxic therapy or surgery. Ovarian tissue or oocyte cryopreservation before significant follicular depletion is the only proven method to preserve reproductive potential and endocrine function.^[101-103]

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SECTION 5

CANCERS

1. India ranks third globally in terms of cancer burden, with a lifetime risk of 1 in 9 individuals and a projected 57% increase in new cases by 2040, highlighting the urgent need for nationwide prevention and early detection strategies (Grade A).^[1-3]

Breast cancer

2. Breast cancer (BC) is the most prevalent cancer among Indian women, making up nearly a quarter (27%) of all female cancers and 13.5% of all new cancer cases in 2020 (Grade A).^[1-3] with a significantly higher lifetime risk in urban women (1 in 22) compared to rural women (1 in 60) (Grade B).^[4]
3. There is an increasing incidence of BC among younger Indian populations. Observational data indicate that 40%–50% of BC patients are under 50 years of age, with 10%–25% possibly younger than 40 years of age.^[5] Tumors in younger women are often hormone receptor (HR) negative and biologically more aggressive, leading to higher mortality.^[6]
4. Indian women are diagnosed with BC nearly a decade earlier (mean age: 49–53 years vs. 60–62 years in Western populations) and more frequently present with advanced-stage III–IV of the disease (Grade B).^[6-9] The curative potential drops from 95% in Stage I to 21% in Stage IV (Grade A).^[6,10]
5. This emphasizes the urgent need for early detection, downstaging through organized and opportunistic screening, and equitable access to timely, multidisciplinary care.^[4,6,10]
6. Existing Western risk prediction models, such as Gail, are not calibrated for Indian women and often underestimate their risk.^[11] They may be used for approximate stratification until validated Indian-specific tools are available (Grade B).^[11,12]
7. Most international guidelines from developed countries recommend annual or biennial mammographic screening for women aged 40–74 years at average risk and suggest starting annual mammography or magnetic resonance imaging (MRI) at a younger age for high-risk groups (Grade A).^[13]
8. In India, organized population-wide mammography is not yet practical; instead, opportunistic screening through clinical breast examination (CBE), breast self-awareness, and prompt symptom evaluation remains the most feasible and cost-effective approach (Grade B).^[14,15] Indian randomized controlled trials show evidence that CBE screening by trained frontline health workers results in earlier detection and a 30% reduction in mortality among women aged ≥ 50 years, without raising overdiagnosis rates.^[14-18]
9. The CBE-based opportunistic screening model is supported by global evidence. Systematic reviews have repeatedly shown notable stage shifts with CBE, although evidence for a mortality benefit remains indirect and of moderate quality (Grade B).^[19-21]
10. In India, mammography encounters challenges such as economic constraints, inconsistent quality assurance, and higher false-positive rates, which restrict its feasibility for population-wide use (Grade B).^[16,17] Therefore, it is advisable to conduct selective or opportunistic screening every 2–3 years based on individual risk assessments and shared decision-making regarding the benefits and possible harms (Grade B).^[9,22-25]
11. Breast MRI is the most sensitive imaging technique for detecting BC and is recommended in addition to mammography for women at high risk ($\geq 20\%$ –25% lifetime risk) due to genetic factors, a strong family history, prior chest irradiation, or BRCA1/2 mutations (Grade A).^[26]
12. In India, routine breast MRI screening is not recommended for the general population. It should be reserved for specific cases, such as diagnostic uncertainty, dense breast tissue, inconclusive mammograms, or high-risk patients, because of its high cost, limited availability, and need for specialized expertise (Grade B).^[5] When indicated, high-risk women should undergo annual MRI combined with mammography starting 10 years before the age of the youngest affected relative or by age 30, whichever occurs first (Grade A).^[9,26]
13. Positron emission computed tomography should not be routinely used for BC screening or staging (Grade A).^[27] Instead, its use should be reserved for advanced or unclear cases where it influences management decisions (Grade B).^[27]
14. Prevention includes lifestyle changes, such as maintaining a healthy body mass index (BMI), staying active, limiting alcohol intake, avoiding tobacco, and promoting breastfeeding, all of which lower the risk (Grade A).^[28,29]
15. High-risk women, including confirmed BRCA1/2 carriers, may consider risk-reducing surgery or chemoprevention options, such as tamoxifen, raloxifene, or anastrozole, following expert counseling (Grade A).^[30,31] However, their use is often restricted by barriers such as access, cost, and cultural influences.
16. In India, integrating primary prevention with early detection remains the most cost-effective strategy for reducing mortality rates (Grade B).^[26,27]

Breast cancer survivors

17. In survivors of estrogen receptor-positive BC, standard adjuvant endocrine treatments include tamoxifen, ovarian suppression, and aromatase inhibitors (AIs). These therapies lower estrogen levels, potentially exacerbating menopausal, urogenital, and bone health issues (Grade A).^[32,33]

18. Personalized management is advised for each peri/postmenopausal woman experiencing a decreased quality of life (QOL) due to menopause symptoms.^[34-37] An annual gynecological checkup is recommended to manage general and menopausal symptoms, support bone health, and encourage reporting of any abnormal vaginal bleeding.
19. Vasomotor symptoms (VMSs): Systemic menopause hormone therapy (MHT)/hormone replacement therapy is contraindicated in BC survivors for relief of menopausal symptoms (Grade A).^[38,39]
20. Findings from a recent systematic review and meta-analysis suggest that MHT may serve as an off-label treatment option for BC survivors with menopausal symptoms. This could be considered for selected HR-negative survivors experiencing severe, refractory symptoms, especially after nonhormonal therapies have failed, and only following explicit shared decision-making (Grade C).^[40,41] Further randomized trials are needed before reconsidering the current advice against offering MHT to BC survivors.^[39]
21. For women, including BC survivors who cannot use systemic MHT, nonhormonal options such as cognitive behavior therapy and proven medications such as serotonin–norepinephrine reuptake inhibitors and gabapentin are recommended as the primary treatment for VMSs (Grade A).^[42-45] Lifestyle changes and mind–body practices can also be offered alongside to help improve overall symptoms and QOL (Grade B).^[42-45]
22. Genitourinary syndrome of menopause: The initial treatment typically involves local nonhormonal therapies (Grade B).^[46] Ultra-low-dose and low-dose options, particularly estriol for a limited time, may be considered only after consulting an oncologist and engaging in shared decision-making (Grade C).^[46]
23. Bone loss: In premenopausal women on AI, estrogen levels decrease suddenly and significantly, resulting in a 6%–8% reduction in bone mineral density during the first 1–2 years. In contrast, postmenopausal women using AI experience a slower decline of approximately 2%–3% each year.^[47-49] Both groups have an increased risk of fractures and should take proactive steps to protect their bones by adequate intake of calcium and Vitamin D, alongside therapeutic lifestyle management and follow-up dual-energy X-ray absorptiometry scans (Grade A).^[48,49] Baseline assessment, prevention, and treatment of osteoporosis are integral to essential care (Grade A).^[50]
24. It is recommended to begin bone-protective treatment early with bisphosphonates (intravenous zoledronic acid, 4 mg every 3–6 months for about 2–5 years) or denosumab for women at intermediate (Grade B)^[51] to high risk on AI (Grade A).^[51-53] Sequential therapy with denosumab (60 mg subcutaneously every 6 months), followed by bisphosphonate, is an accepted regimen for AI-associated bone loss (Grade B).^[53]
25. Endometrium: Baseline gynecological assessment and transvaginal ultrasound (TVS) are performed.^[54] Current evidence does not support routine endometrial screening using TVS or biopsy for asymptomatic women taking tamoxifen (Grade B).^[55,56]
26. Endometrial cancer (EC) presents early and is curable; therefore, women presenting with bleeding require evaluation with a hysteroscopic-guided biopsy. If hysteroscopy is not available, saline infusion sonography and guided endometrial biopsy (EB) should be performed (Grade A).^[57-60]
27. In asymptomatic postmenopausal women on tamoxifen, endometrial thickness alone is an unreliable predictor of malignancy and must always be interpreted in conjunction with clinical presentation (additional risk factors such as obesity and prolonged tamoxifen use) and detailed sonographic features, such as the presence of irregular/cystic morphology and increased vascularity on Doppler. Huang *et al.* suggest a clinical threshold of 9–10 mm for considering an EB in an asymptomatic woman (Grade B).^[56,57]

Cancer cervix

28. Cervical cancer ranks as the fourth most common cancer among women worldwide and the second most common among Indian women.^[61]
29. Cervical cancer prevention includes: (1) human papillomavirus (HPV) vaccination for girls, ideally before age 15, and (2) effective screening with HPV DNA tests, to be performed at least twice in a lifetime – at ages 35 and 45 – followed by immediate treatment for women who test positive (screen-and-treat) (Grade A).^[62-64]
30. Cervical cancer screening coverage across India is only 2.0%. Urban participants had higher screening rates (3.3%) compared to rural participants (1.4%) (Grade A).^[65]
31. Risk factors for cervical cancer encompass persistent infection with high-risk HPV types, early initiation of sexual activity, multiple sexual partners, partners with several previous partners, immune-compromising conditions such as human immunodeficiency virus, and smoking (Grade A).^[62,66]

Screening tests available in India

32. The Government of India recommends visual inspection with acetic acid (VIA) as the primary method for cervical cancer screening in population programs. It is advised that women aged 30–65 years should be screened every 5 years based on strong evidence (Grade A).^[67,68]

33. VIA is suitable for women aged 30–49 years, but its sensitivity declines in postmenopausal women due to the receding transformation zone (TZ).^[62,69]
34. Visual inspection with Lugol's iodine is always conducted in conjunction with VIA and is not evaluated as an independent screening method in clinical trials (Grade B).^[62]
35. Conventional Pap smear and liquid-based cytology (LBC): Cytology screening has seen limited success in developing countries due to a relatively high false-negative rate and the lack of organized screening programs and referral pathways (Grade B).^[62]
36. Primary HPV DNA screening: Transition to HPV DNA testing is recommended, where feasible (Grade A).^[62,69,70] Primary HPV screening is more effective and cost-efficient than VIA screening in low- and middle-income countries, as demonstrated by multiple studies (Grade A).^[71]
37. The World Health Organization (WHO) also recommends using primary HPV DNA testing followed by thermal ablation as part of the “Screen-and-Treat” approach for the general population.^[62] HPV DNA testing should be followed by VIA/colposcopy before thermal ablation.
38. Point-of-care HPV testing, followed by thermal ablation when appropriate, is currently being studied as a combined single-visit method.^[63]
39. Colposcopy, along with colposcopy-directed biopsy, is the recommended confirmatory test for women who test positive on any screening method regardless of the initial screening outcome (Grade A).^[62]
40. Hormonal changes frequently result in unsatisfactory colposcopy in many women after menopause (Grade B).^[72]
41. Short-term intravaginal ET administered daily for 2 weeks and then paused for a week before repeat cytology or colposcopy can improve smear quality and enhance visualization of the TZ in postmenopausal women (Grade B).^[72-76]

Cervical cancer screening for women at menopause transition and postmenopause

42. Regular cervical screening is recommended for women during the menopause transition (MT) and after menopause (Grade A).^[77]
43. In India, since opportunistic screening is widespread, any woman in the specified groups should be advised to undergo screening if she has not had one in the past 3–5 years (Grade B).^[78,79] Women who have never undergone screening during their lifetime should be recommended to do so, even at age 65 or older, if they maintain a good QOL (Grade B).^[79]
44. VIA screening has limited accuracy because the TZ recedes into the cervical canal due to estrogen deficiency (Grade B).^[62] VIA screening is generally not recommended for individuals over 50 years of age.^[62]
45. Cytological screening using conventional methods or LBC is recommended every 3 years (Grade A).^[62] Transition to HPV DNA testing is recommended where feasible (Grade A).^[62,69,70] Co-testing with LBC and HR HPV is recommended over the use of cytology or HPV alone, especially in postmenopausal screening (Grade A).^[80] Primary HPV screening: Both provider-collected and self-HPV sampling are recommended (Grade A).^[81]
46. For cervical intraepithelial neoplasia Grade 1 (CIN1) and certain CIN2 lesions that meet the WHO eligibility criteria, such as a fully visible TZ, no endocervical extension, and no suspicion of invasion, ablative treatments such as thermal ablation may be considered (Grade A).^[82]
47. High-grade squamous intraepithelial lesion (CIN2/3) with endocervical extension or nonvisible squamocolumnar junction should be treated with excisional procedures (large loop excision of the TZ/loop electrosurgical excision procedure or cold-knife cone), not ablation (Grade A).^[76,82,83]
48. In postmenopausal women, excisional treatment should ideally be performed by experienced colposcopists because cervical atrophy, stenosis, and Type 3 TZ increase the technical difficulty and the risk of complications (Grade B).^[76,82-85]
49. Follow-up: Posttreatment follow-up is identical to that for premenopausal women. HPV-based test of cure at 6, 18, and 30 months, followed by 3-yearly HPV surveillance for at least 25 years (Grade A).^[82-85]

Cancer ovary

50. Ovarian cancer is the third most common female cancer in India, accounting for approximately 6% of all female cancers in the country, with 47,333 new cases (GLOBOCAN 2022).^[86] It remains a leading cause of gynecological cancer mortality due to late-stage presentation (Grade A).^[86-88]
51. There is no proven benefit of routine ovarian cancer screening in women at average risk or asymptomatic women (Grade A).^[89-91]
52. The most practical approach is “screening by vigilance,” which involves raising awareness among clinicians and patients of red-flag symptoms, such as persistent bloating, early satiety, or unexplained gastrointestinal discomfort, and ensuring prompt pelvic examinations and TVS in women over 40 years (Grade B).^[89-91]
53. Pathogenic BRCA1/2 mutations are present in approximately 3%–28% of Indian women with epithelial ovarian cancer, highlighting the importance of early detection, genetic testing, and family cascade counseling (Grade B).^[92-94]

54. A first-degree relative with ovarian cancer or a personal or family history of early-onset BC (<50 years) significantly increases the lifetime risk of ovarian cancer, warranting genetic counseling and consideration of BRCA testing for hereditary breast–ovarian cancer syndromes (Grade A).^[95]
55. Risk-reducing bilateral salpingo-oophorectomy (BSO) remains the most effective primary prevention strategy for women with confirmed BRCA1/2 mutations, offering an 80%–96% reduction in ovarian cancer risk and a 70% reduction in overall mortality (Grade A).^[96] It targets ovarian, fallopian tube, and peritoneal cancers.^[96]
56. For women at average risk undergoing hysterectomy or ovarian surgery for benign reasons, opportunistic bilateral salpingectomy may be considered a practical preventive measure (Grade A).^[97–101]

Endometrial cancer

57. In India, uterine corpus cancer remains relatively uncommon, with the national age-standardized incidence historically around 2–3 per 100,000 and more recent National Cancer Registry Programme estimates of approximately 4 per 100,000 women (Grade A).^[102] Higher rates, approximately 4–6 per 100,000, have been reported from urban population-based cancer registries (PBCRs) such as Delhi, Bengaluru, and Thiruvananthapuram, reflecting demographic and lifestyle differences (Grade B).^[102,103]
58. EC is most frequently diagnosed in postmenopausal women aged 55–65 years (Grade A).^[104] The overall morbidity and mortality of EC are low, as most patients (70%–80%) are diagnosed at an early stage due to abnormal bleeding at MT or postmenopausal bleeding (PMB) (Grade A).^[105]
59. Obesity is a significant, modifiable risk factor for EC. Large meta-analyses have demonstrated a strong dose–response relationship between increasing BMI and EC risk, ranging from approximately 2–4-fold in women with BMI ≥ 30 kg/m² to up to 8–10-fold in those with morbid obesity (BMI ≥ 40 kg/m²) compared with women of normal weight (Grade A).^[106–108] The risk of EC is elevated 2–7-fold in women receiving tamoxifen.^[60,109,110]
60. Evidence shows that endometrial intraepithelial neoplasia (EIN) is the main precursor lesion for endometrioid EC. The annual progression rate is 8%, and the cumulative risk over 10–20 years without treatment ranges from 20% to 30% (Grade A).^[111,112]
61. Unopposed ET in women with an intact uterus increases the risk of EC by 2–10 times, and this risk increases with longer use (Grade A).^[113,114]
62. Women with Lynch syndrome have a markedly increased lifetime risk of EC, which varies by mismatch repair gene mutation: approximately 40%–57% for MSH2, 30%–40% for MLH1 and MSH6, and 10%–15% for PMS2 carriers, compared to 2%–3% in the general population (Grade A).^[115]
63. Cyclic or continuous progestin at an appropriate dose administered alongside estrogen reduces or eliminates the increased risk of EC associated with unopposed ET. Continuous combined MHT regimens offer the strongest protection (Grade A).^[116]
64. During menopause, women should be advised about the risks and symptoms of EC and strongly encouraged to report any unexpected bleeding or spotting. Routine TVS or EB screening does not reduce EC mortality in asymptomatic women (Grade A).^[117,118]
65. Evaluation is only for women with symptoms or for Lynch syndrome carriers. Regular screening for EC in high-risk groups has not been fully assessed (Grade B).^[119]
66. Women diagnosed with EC should be managed using a multidisciplinary team approach (Grade B).^[120]

Endometrial hyperplasia

67. Endometrial hyperplasia (EH) results from prolonged unopposed estrogen exposure to the endometrium, either through natural production or external estrogen intake. It has been identified as a precursor to EC (Grade A).^[121–123]
68. The 2014 WHO EH classification system has two categories based on the presence or absence of cytological atypia: EH without atypia (nonneoplastic) and atypical hyperplasia/EIN (a premalignant condition) (Grade A).^[124,125] The EIN system defines two biological entities, benign endometrium and EIN, based on histomorphological and molecular criteria that predict malignant potential (Grade A).^[126,127]
69. EH is a histological diagnosis based on the evaluation of an EB, endometrial curettage sample, or hysterectomy specimen (Grade A).^[125–127]
70. The risk of EH progressing to carcinoma within 10 years is <5%, and 20%–30% of EINs progress to EC (Grade C).^[128] EIN is a precursor lesion to Type I endometrioid adenocarcinoma of the endometrium and often co-occurs with carcinoma at diagnosis (almost 50%) (Grade A).^[129,130]
71. Endometrial stripe thickness and age were the most significant predictors of concurrent EC at the time of hysterectomy for EIN. An endometrial stripe of >2 cm was associated with four times the odds of concurrent EC (95% confidence interval: 1.5–10.0), controlling for age (Grade B).^[130] Refer to Section 2 under PMB.

72. All management strategies should include the elimination of extrinsic or intrinsic sources of unopposed estrogen, since excess exposure to estrogen is the primary cause of estrogen-dependent endometrial neoplasia (Grade A).^[119,121,122]
73. EH can be managed conservatively with continuous progestin (levonorgestrel-releasing intrauterine system preferred) and scheduled follow-up; hysterectomy is reserved for postmenopausal patients, or when the risk is higher, persistent, or relapse occurs, or when surveillance is not feasible (Grade B).^[131,132]
74. Conservative management may be offered for EH when the risk of occult carcinoma or progression is low, and the inciting cause of endometrial proliferation has been corrected, such as anovulation that is now controlled. Progestin therapy requires at least 6 months to produce histological regression. Therefore, close surveillance with two consecutive negative endometrial biopsies performed 6 months apart is recommended (Grade B).^[131]
75. For EIN, total hysterectomy (TH) offers definitive treatment and allows for the assessment of concurrent carcinoma (Grade A).^[123,131] In postmenopausal women, TH with BSO is appropriate (Grade A).^[123,131] In premenopausal women, the decision to perform BSO should be made on an individual basis through shared decision-making, considering the cancer risk versus the harms of surgical menopause (Grade B).^[130,131] Supracervical hysterectomy, uterine morcellation, and endometrial ablation are unacceptable for EIN because they pose a risk of undertreatment or dispersal of occult carcinoma and presence of overt carcinoma (Grade A).^[121,130,131]

Vulval and vaginal cancer

76. Vulvar cancer is rare in India, with an incidence of 0.5–1.0 per 100,000 women, accounting for approximately 4%–5% of gynecological malignancies. Most cases are diagnosed after the age of 60 years (Grade B).^[133] Major Indian risk factors include HPV infection, chronic vulvar dermatoses (particularly lichen sclerosus), diabetes, obesity, poor genital hygiene, and tobacco use (Grade B).^[133]
77. Vaginal cancer is very rare, accounting for <1% of all gynecological cancers, with an incidence of 0.2–0.4 per 100,000 women in Indian population-based registries (Grade B).^[133] Persistent high-risk HPV infection, previous cervical or vulvar intraepithelial neoplasia, prior radiation, long-term pessary use, and poor genital hygiene are the main risk factors in India (Grade B).^[134,135]
78. Primary prevention through HPV vaccination in the eligible population (Grade A).^[135-139] Regular self and clinical genital examinations, along with prompt biopsy of any chronic, white, ulcerative, or nonhealing vulvar or vaginal lesions, are essential for effective secondary prevention and early detection of malignancy (Grade A).^[140-142]

Gastric, liver, and cervical cancers: India's leading preventable infection-related malignancies

79. Gastric cancer ranks among the top six cancers in India, with approximately 60,000 new cases annually (about 4.5% of all cancers), exhibiting notable regional variation from 11.1 per 100,000 in Chennai to 1.6 per 100,000 in Bhopal, and showing a slight decline in recent PBCR data (Grade B).^[143-145]
80. Population-based control strategies, notably *Helicobacter pylori* eradication, healthy dietary modifications (such as reducing salt and smoked foods), and tobacco cessation, significantly lower gastric cancer risk, as supported by recent global meta-analyses and the International Agency for Research on Cancer guidance (Grade A).^[145,146]
81. In India, tobacco-related (both smoked and smokeless) cancers account for approximately 18% of all female cancer deaths, while infection-related cancers, mainly cervical, stomach, and liver cancers, account for nearly 33% of female cancer mortality (Grade A).^[147-149]
82. Targeted infection control and vaccination could prevent nearly a third of female cancer deaths in India through integrated strategies, such as HPV and hepatitis B virus vaccination, strict tobacco control measures, and *H. pylori* eradication, with particular emphasis on rural and underserved populations (Grade A).^[145,148,149]

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SECTION 6 CLINICAL EVALUATION AND MANAGEMENT

CLINICAL EVALUATION

1. Women may present to a menopause clinic with menstrual disturbances, menopausal symptoms, or for a routine health check-up, and may also be identified opportunistically during other healthcare visits.^[1] Refer to Figure 1 for an initial assessment.
2. Clinical examination should follow a holistic, preventative, and diagnostic approach, extending beyond isolated menopausal symptoms to identify both hidden and obvious noncommunicable diseases (NCDs).^[2-4]
3. Age-related biological changes, along with lifestyle and socioeconomic factors, require customized risk assessment and long-term management strategies.

Components of clinical evaluation

4. History and physical examination: Take a thorough history, including menstrual, reproductive, sexual, psychosocial, and family history. Perform the general and systemic physical examinations, as well as breast and pelvic examinations. Measure the Body Mass Index (BMI), waist circumference, and calf circumference.
5. Symptom assessment tools: Record menopausal symptoms using a validated scale. Menopause-related symptoms may be documented using the Menopause Rating Scale (MRS).^[5,6] Refer to Table 1.
The degree of symptoms is documented in the boxes to assess severity and the follow-up for treatment effectiveness. The total MRS score is calculated, and menopausal symptoms are classified as None: 0–4; Mild: 5–8; Moderate: 9–16; Severe: 17 plus.
6. Based on the MRS outcome, the Female Sexual Function Index [FSFI-6 Refer to Table 2] for sexual health assessment, Insomnia Severity Index [ISI Refer to Table 3] for sleep disturbances, Patient Health Questionnaire [PHQ-4 Refer to Table 4] for psychological health, and s-Moca for dementia screening are documented as needed.^[7-10]

Risk stratification tools for diseases

7. Breast: A woman may be categorized into low, moderate, or high risk according to her risk of developing invasive breast cancer using the Gail Model, the limitation being that it has not been validated in India (<https://www.cancer.gov/bcrisktool>).
8. Cardiovascular disease (CVD): 10-year probability risk of myocardial infarction/stroke based on the Globorisk India tool (use the web calculator at www.globorisk.org or the validated desk/pocket chart) and/or Reynolds Risk Score (www.mdcalc.com/calc/3932/reynolds-risk-score-cardiovascular-risk-women?utm). Refer to Section 3 CVD.

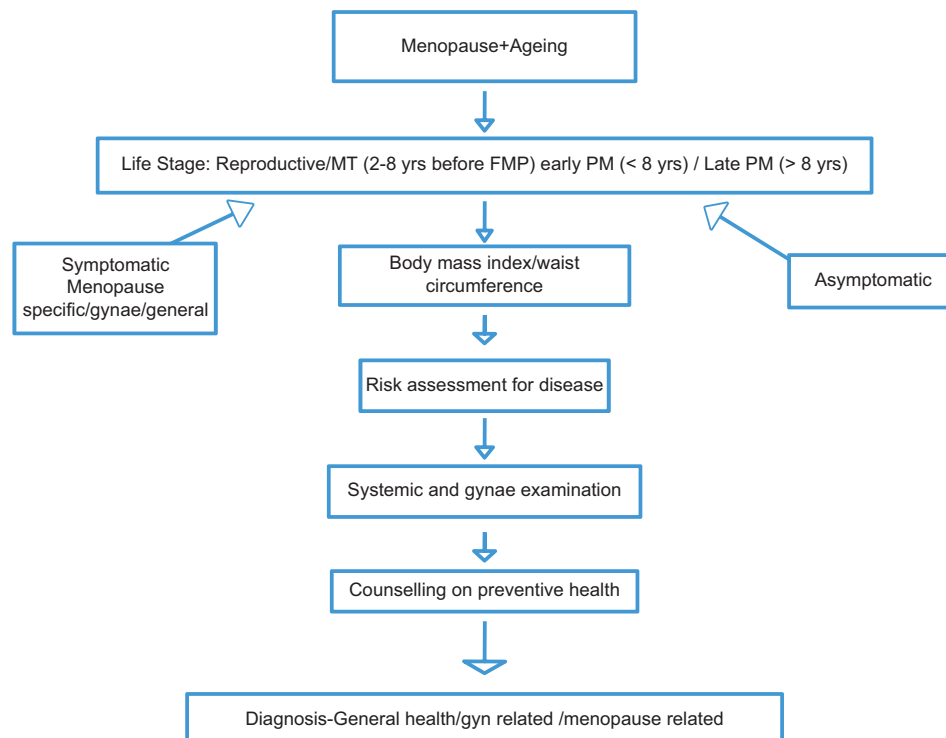


Figure 1: Physician's approach to evaluate a woman at 35 years or older. MT: Menopause transition, FMP: Final menstrual period, PM :Post menopause

9. Skeletal health: Risk assessment for osteoporosis may be done by OSTA/FRAX (<http://www.shef.ac.uk/FRAX>). Refer to Section 3 on osteoporosis.
10. Muscle health is evaluated using the SARC-calf, a 6-item questionnaire. Refer to Section 3 sarcopenia.
11. The results for risk assessment for diseases are documented in Table 5. The risk status is categorized as low, moderate, or high risk for disease.

Table 1: Menopause Rating Scale

Which of the following symptoms apply to you at this time?
(X ONE Box For EACH Symptom) For Symptoms That Do Not Apply, Please Mark "None".

Symptoms:	none mild moderate severe extremely severe ----- ----- ----- ----- Score = 0 1 2 3 4				
	1. Hot flashes, sweating (episodes of sweating).....	☐	☐	☐	☐
2. Heart discomfort (unusual awareness of heart beat, heart skipping, heart racing, tightness).....	☐	☐	☐	☐	☐
3. Sleep problems (difficulty in falling asleep, difficulty in sleeping through the night, waking up early).....	☐	☐	☐	☐	☐
4. Depressive mood (feeling down, sad, on the verge of tears, lack of drive, mood swings).....	☐	☐	☐	☐	☐
5. Irritability (feeling nervous, inner tension, feeling aggressive)	☐	☐	☐	☐	☐
6. Anxiety (inner restlessness, feeling panicky)	☐	☐	☐	☐	☐
7. Physical and mental exhaustion (general decrease in performance, impaired memory, decrease in concentration, forgetfulness).....	☐	☐	☐	☐	☐
8. Sexual problems (change in sexual desire, in sexual activity and satisfaction)	☐	☐	☐	☐	☐
9. Bladder problems (difficulty in urinating, increased need to urinate, bladder incontinence).....	☐	☐	☐	☐	☐
10. Dryness of vagina (sensation of dryness or burning in the vagina, difficulty with sexual intercourse).....	☐	☐	☐	☐	☐
11. Joint and muscular discomfort (pain in the joints, rheumatoid complaints)	☐	☐	☐	☐	☐

The percentage of symptoms at each visit is documented to assess the severity of symptoms and to follow up on the effectiveness of treatment. No problems 0%-4%; Mild problems 5%-24%; Moderate problems 25%-49%; Severe problems 50%-95%; Complete problems 95%-100%

Table 2: Sexual health-Female Sexual Function Index - 6 Form

	Description (range)	1	2	3	4	5
1. Desire	Very low on (range) 1	☐	☐	☐	☐	☐
2. Arousal	No arousal (range) 1th-Female	☐	☐	☐	☐	☐
3. Lubrication	None bricationa	☐	☐	☐	☐	☐
4. Orgasm	Never asmatonange) 1t	☐	☐	☐	☐	☐
5. Satisfaction	Very dissatisfied) 1th-Female Sexu	☐	☐	☐	☐	☐
6. Pain	Always pain sfied) 1t	☐	☐	☐	☐	☐

Total score=30. A score of ≤ 19 suggests dysfunction

Table 3: Sleep: Insomnia Severity Index, 7-item questionnaire

Description	1	2	3	4	5
1. Difficulty falling asleep	☐	☐	☐	☐	☐
2. Difficulty staying asleep	☐	☐	☐	☐	☐
3. Problems waking up too early	☐	☐	☐	☐	☐
4. Satisfaction with current sleep	☐	☐	☐	☐	☐
5. Interference with daily functioning	☐	☐	☐	☐	☐
6. Noticeability of sleep problems by others	☐	☐	☐	☐	☐
7. Worry/distress about sleep problem	☐	☐	☐	☐	☐

Total Score: 28 cut-offs: 0-7: No clinically significant insomnia, 8-14: Sub threshold insomnia, 15-21: Moderate insomnia, ≥ 22 : Severe insomnia

12. Record the presence of GSM by noting the most bothersome symptoms and the vaginal pH with a narrow range litmus paper.

Recommended laboratory and imaging investigations

13. Baseline tests: Complete blood count, urine routine, fasting glucose/glycated hemoglobin, lipid profile, thyroid-stimulating hormone.
14. Cancer screening: Pap smear, stool for occult blood, mammography/ultrasound of the breast.
15. Reproductive Health: Vaginal pH and TVS.
16. Others: Dental and eye check-up.
17. Investigations should be individualized based on clinical findings. The investigations listed in Table 6 should be chosen judiciously, depending on the woman's history and examination.

Individualized health plan

18. Each woman needs a personalized health management plan for menopause. Management planning is based on the information obtained by history, clinical examination, the use of risk assessment tools, and the results of the investigations. Refer to Tables 7 and 8.
19. Based on the symptom profile, women can generally be categorized as either symptomatic or asymptomatic.
20. Based on the health profile, they are further classified as low risk, moderate risk, or high risk to personalize care and treatment decisions.

Table 4: Psychological Health, Patient Health Questionnaire-4, past 2 weeks

Description	0	1	2	3
Little interest or pleasure in doing things	☐	☐	☐	☐
Feeling down, depressed, or hopeless	☐	☐	☐	☐
Feeling nervous, anxious, or on edge	☐	☐	☐	☐
Not being able to stop or control worrying	☐	☐	☐	☐

Each item scored 0–3; Total Score: 0–12 ≥ 6 suggests clinically relevant psychological distress

Table 5: Comprehensive chart for documenting the risk score for noncommunicable diseases over 5/10 years and lifetime results

Tool	5/10 years risk score	Lifetime risk score	Risk status
Gail model			
WHO/ISH			
OSTA/SCORE/FRAX			
SARC f-calf			

WHO: World Health Organization, ISH: International Society of Hypertension, FRAX: Fracture risk assessment tool, SCORE: Simple calculated osteoporosis risk estimation

Table 6: Tests performed solely on indication

Test	Indication
FSH	Premature ovarian insufficiency, women on contraceptive pills, women who had hysterectomy, doubt as to the cause of secondary amenorrhea or hot flushes, fertility
Estradiol	Premature ovarian insufficiency, women on contraceptive pills, women who had hysterectomy, doubt as to the cause of secondary amenorrhea or hot flushes
Tests to assess increased risk of thrombosis	Where there is relevant past or family history, women with previous history of unexplained thromboembolic episodes antithrombin III, Tissue factor pathway inhibitor activity, protein C and protein S are to be estimated. Lupus anticoagulant, anticardiolipin antibodies should also be assessed
Endometrial biopsy	Postmenopausal bleeding, recent irregular bleeding, previous use of unopposed estrogen in the presence of uterus, endometrial thickness >11 mm; 4–11 mm with risk factors
Bone mass density	For specific indication Refer to Section 3
LFT	When relevant as with suspected liver disease or recent history of liver disease, fatty liver on USG
Urodynamic study	To diagnose and differentiate on the severity and type of incontinence before planning surgery
ECG, 2D Echo	CVD assessment
25, OH Vitamin D	Rule out secondary causes of osteoporosis

FSH: Follicle-stimulating hormone, OCPs: Oral contraceptive pills, LFT: Liver function tests, ECG: Electrocardiogram, 2D Echo: Two-dimensional echocardiography, CVD: Cardiovascular disease, 25, OH Vitamin D: 25-hydroxy Vitamin D, VMI: Vaginal saturation index, USG: Ultrasonography

21. Counseling: The aims of counseling include addressing women's questions and concerns, educating patients, and boosting their confidence in making decisions.^[11-13] If a therapy is selected, the patient and clinician should agree on the goals, risks, and benefits, and a tentative duration of use. The skill of medical counseling and translating statistics into simple language is a vital part of consultation.
22. The classification of the frequency of drug reactions as per the WHO and the Council for International Organizations of Medical Sciences is shown in Table 9.^[14]

Therapeutic lifestyle modification

23. Indian Mantra for Menopausal Health [Figure 2]: The literal meaning of mantra is “tool or instrument of thought.” This word originates from the most ancient Vedic text, the Rigveda.^[15]
24. **Dietary therapy:** The ICMR, NIN (2024) recommends “My Plate for the Day” for adults with a caloric intake of 2000 Kcal. Emphasize the traditional Indian dietary patterns with a balance of different food groups.^[16] Refer to Table 10.
25. Free sugars include all sugars added to foods or drinks, as well as the sugars naturally found in honey, syrups, jaggery, fruit juices, and fruit concentrates. It excludes the sugars naturally present in whole fruits, vegetables, or plain milk.^[16,17]
26. Keep “free sugars” to <5% of your daily energy intake, which is about five teaspoons (25 g) of sugar each day. Ideally, aim for under 5% (around three teaspoons or 15 g), as strongly advised to lower adiposity, type 2 diabetes, CVD, and mortality.^[16,17]
27. One teaspoon of sugar, honey, or jaggery is equivalent to 4 g. A small glass (200 ml) of sweetened soft drink or packaged fruit juice contains 5–7 teaspoons of sugar. Indian sweets such as gulab jamun and laddoo often contain 8–12 teaspoons of sugar.^[16]

Table 7: Management plan for women without menopausal symptoms

Characteristics	Category	Management
<10 years postmenopause, normal and overweight low risk for NCD/no comorbidities	Healthy - Low risk	Counsel on preventive health care
>10 years postmenopause. Obese women at moderate risk for NCD well controlled comorbidities	Moderate risk	Counsel on preventive health care/treat the disease
Moderate risk for breast cancer		
>20 years postmenopause	High risk	Counsel on preventive health care/treat the disease
Congenital heart disease/Established CVD/VTE/Stroke/Transient ischemic attack/myocardial infarction/High risk for breast cancer/breast ca survivor uncontrolled comorbidities		
NCD: Noncommunicable disease, CVD: Cardiovascular disease, VTE: Venous thromboembolism		

Table 8: Management plan for women with menopausal symptoms (vasomotor symptoms/genitourinary syndrome of menopause/bone health)

Characteristics	Category	Management
<10 years postmenopause, normal and overweight	Healthy - Low risk	Counsel on preventive health care
Low risk for NCD/No comorbidities		MHT
>10 years postmenopause, obese women at moderate risk for NCD	Moderate risk	Counsel on preventive health care
Well-controlled comorbidities		Treat the disease
Moderate risk for breast cancer		Individualize MHT
>20 years postmenopause	High risk	Counsel on preventive health care/treat the disease
Congenital heart disease/Established CVD/VTE/Stroke/Transient ischemic attack/myocardial infarction/High risk for breast cancer/breast ca survivor uncontrolled co-morbidities		Avoid MHT
NCD: Noncommunicable disease, MHT: Menopausal hormone therapy, CVD: Cardiovascular disease, VTE: Venous thromboembolism		

Table 9: Classification of frequency of drug reactions

Term	Number	Colloquial
Very common	1/1–1/10	A person in family
Common	1/10–1/100	A person in street
Uncommon	1/100–1/1000	A person in village
Rare	1/1000–1/10,000	A person in a small town
Very rare	<1/10,000	A person in a large town

Source: RCOG Clinical Governance Advice. RCOG: Royal College of Obstetricians and Gynecologists

Table 10: Nutritional plan for a sedentary woman

Food source	g/day
Whole grains (millets, brown rice, whole wheat)	270 g
Legumes/pulses/nonvegetarian	60–90 g
Vegetables	400 g
Fruits	100 g
Diary	300g
Fiber	25–40 g
Oil	Two level tablespoons
Daily salt/sugar	<5 g (1 tsp)/15–25 g (3–5 tsp)
Handful of nuts and 8–10 glasses of water	

**Figure 2: The Indian Mantra for menopause well-being**

28. Prioritize food sources for calcium intake exceeding 800 mg daily and ensure Vitamin D repletion through 1000–2000 IU daily or 60,000 IU monthly, or by daily exposure of arms, legs, or face to sunlight for 20 min between 11 AM and 2 PM to meet the RDA. Refer to Section 3.
29. Complete tobacco cessation and alcohol minimization are among the most effective, evidence-based strategies (Grade A)^[18-21] for protecting postmenopausal women against breast, oral, and lung cancers, liver disease, and osteoporosis, endorsed worldwide by major health authorities.^[18-21]
30. **Exercise therapy:** Physical activity and exercise help maintain a healthy weight, enhance bone density, coordination, and balance, and improve muscle strength and joint mobility. It also improves lipid profiles, alleviates genitourinary issues, reduces depression, and encourages better sleep.^[22-24]
31. Exercise should incorporate aerobic, muscle-strengthening, breathing, and balance activities. Engage in 30 min of moderate-intensity physical activity, mainly 5 days a week. Muscle-strengthening activities should be included at a minimum of 2 days per week. The duration of physical activity depends on the goal; 30 min per day improves fitness and lowers the risk of

chronic diseases; 60 min per day helps prevent weight gain and maintain metabolic health; 60–90 min per day helps prevent weight regain after weight loss.

32. Mind–body exercise therapy is a physical activity combining movement, mental focus, and controlled breathing. It is frequently used to enhance flexibility, strength, and balance while also encouraging relaxation and alleviating stress. 20–30 min daily can support psychological well-being, improve sleep, and help reduce vasomotor symptoms.^[25–27]
33. Yoga therapy of ≥ 8 weeks duration improves vasomotor, psychological, and quality of life outcomes in perimenopausal women (Grade B).^[28–34]
34. **Sleep therapy:** Proper sleep scheduling and maintaining a regular sleep-wake schedule are crucial. Consistently going to bed and waking up at the same times helps synchronize the circadian rhythm.^[35,36]
Avoid stimulants: Limiting caffeine, nicotine, and alcohol for at least 4–6 h before bedtime can enhance sleep onset and quality.
Avoid using your bed for activities such as watching television, using smartphones, or reading to reinforce the connection between bed and sleep.
Avoid stimulating activity close to bedtime: Exercise or heavy meals should be avoided within 2 h of sleep onset.
Create a restful environment: Dim lighting, a quiet room, and a cool temperature (18°C–21°C) enhance sleep quality.
Engaging in prayer, meditation, gratitude journaling, or positive thought exercises before sleep reduces cognitive arousal and nighttime repetitive negative thinking (rumination).
Avoid spending too much time in bed: Limiting bedtime to the actual sleep duration helps improve sleep efficiency.^[35,36]
35. Therapy to enhance emotional well-being: Emotional well-being during menopause is affected by biological, psychological, and social factors. Strong social connectedness and perceived emotional support are associated with better quality of life and lower anxiety, through their influence on biological, psychological, and social determinants of health.^[37–39]
36. **Maintaining a healthy BMI:** Losing weight and maintaining it were associated with a reduced breast cancer risk for women aged 50 years and older in The Nurses' Health Study and The Health Professionals Follow-Up Study (Grade B).^[40–42]
37. **Immunization:** For the schedule for adult immunization.^[43] Refer to Table 11.

Nonhormonal therapies

38. Complementary and alternative treatments should be approached cautiously as the evidence remains limited.
39. Awareness should be raised about phytoestrogens and lycopene-rich foods (18–24 mg daily) in the Indian diet (Grade C).^[44–47]
40. In the Indian context, it is highly advisable to validate the effects of locally used herbs and phytoestrogen-containing formulations for menopausal symptom management using modern clinical research methods, including RCTs and phytochemical standardization.
41. Herbal remedies such as Shatavari, Ashoka, and Soy isoflavones may show promise in managing menopausal symptoms, but clinical use should remain cautious until validated through rigorous Indian RCTs and regulatory quality controls. In India, herbal and nutraceutical products are not regulated for potency, purity, or quality.^[48–50]

Nonprescription-based therapies

42. **Cognitive behavioral therapy (CBT):** CBT is a structured, goal-focused form of psychotherapy. It helps individuals manage problems by altering unhelpful thoughts and behavior patterns. Emerging evidence supports CBT as a strong recommendation for managing vasomotor symptoms (VMS) (Grade A).^[51–57]
43. **Hypnosis** is a form of mind–body therapy that uses guided relaxation, focused attention, and suggestion to induce a heightened state of awareness. It reduces hot-flash frequency and severity by approximately 60%–70% and improves sleep and quality of life in postmenopausal women. It can be an adjunct or alternative to pharmacological therapy for vasomotor symptoms (Grade B).^[58–60]

Nonhormonal prescription therapies

44. Nonhormonal therapies, including SSRIs, SNRIs, and certain anticonvulsants, although less effective than menopausal hormone therapy (MHT), can relieve VMS. They are recommended when MHT is contraindicated, not preferred, or used as supplementary treatment (Grade A).^[61]
45. Evidence from randomized controlled trials supports the efficacy of SSRIs (paroxetine, escitalopram, fluoxetine, sertraline), SNRIs (venlafaxine, desvenlafaxine, and duloxetine) (Grade A),^[61–63] and gabapentinoids (gabapentin and pregabalin) in alleviating vasomotor symptoms (Grade B).^[61–63]
46. Clinical trials typically assess SSRIs/SNRIs or gabapentin over a short period (8–12 weeks); further use should be based on individual benefit, tolerability, and preference, with gradual discontinuation.
47. Neurokinin-3 (NK3) receptor antagonists, such as fezolinetant (approved by the Food and Drug Administration [FDA] in 2023) and elinzanetant (approved by the FDA in 2025), represent a nonhormonal therapy for VMS.

Table 11: Schedule of vaccines for adults (Association of Physicians of India 2024)

Vaccine	Vaccine type	Route	Dose and schedule	Special populations	Age>50 years	Comments
Hepatitis B	Recombinant DNA or plasma-derived inactivated subunit vaccine	IM in the deltoids, avoid buttocks	1 mL, 3 doses at 0, 1, 6 months	Every 5 years for HCPs and CKD patients or hemodialysis patients. 2 doses for chronic liver disease and alcoholism	Recommended with additional risk	Contraindicated if allergic to yeast or history of allergic reaction
Influenza	Inactivated and live attenuated	IM (inactivated) Intranasal (live)	0.5 mL, 1 dose, annually		LAIV: Not recommended	If other live vaccines are being given, they should be administered on the same day or spaced 28 days apart
Pneumococcal disease	PPSV 23, PCV 13	IM/SC (PPSV) IM (PCV)	PCV 13: 0.5 mL PPSV - 0.5 mL. 1 dose PCV 13 followed by PPSV23 1 year later	Above 50 years: PCV 13 followed by PPSV23, 1 year later At-risk: PCV 13 followed by PPSV23, 1 year later High-risk: PCV 13 followed by PPSV23, 8 weeks later	Recommendation	
Shingles (Herpes Zoster)	Recombinant zoster vaccine	IM oral (live)	0.5 mL, booster: 2–3 years	3–7 years in endemic set up	Benefit risk ratio	During pregnancy, weight the benefit versus risk and do not use live vaccine during pregnancy
Diphtheria, pertussis and tetanus (Tdap)	Diphtheria and tetanus toxoids and acellular pertussis antigens	IM	0.5 mL, 1 dose 10 years lies		Td: Recommended Tdap: Benefit ratio risk	History of allergic reaction, during each pregnancy, it is recommended to receive one dose of Tdap, preferably between the gestational weeks of 27 and 36

PPSV 23: Pneumococcal polysaccharide vaccine 23, PCV 23: Pneumococcal conjugate vaccine 23, IM: Intramuscularly, SC: Subcutaneously, LAIV: Live-attenuated influenza vaccine, HCPs: Healthcare Professionals, CKD: Chronic kidney disease

48. In a meta-analysis, fezolinetant 45 mg once daily was statistically significantly more effective than other non-HTs in reducing the frequency and severity of moderate-to-severe VMS and showed at least comparable or superior effects on symptom severity versus most nonhormonal agents (Grade A).^[64,65]
49. Elinzanetant 120 mg/day, a dual NK-1/NK-3 receptor antagonist, has demonstrated significant reductions in the frequency and severity of moderate-to-severe VMS and related sleep disturbance in postmenopausal women.^[66]
50. For women suffering mainly from insomnia, select gabapentin, while for those with primarily mood disorders, opt for fluoxetine and paroxetine. Low-dose venlafaxine was as effective as low-dose estradiol in controlling VMS.^[67] In breast cancer patients, fluoxetine and paroxetine should be avoided as they may interfere with the effectiveness of tamoxifen.^[68]

Menopause hormone therapy – An overview

51. Most long-term and randomized data on MHT come from international studies. Hence, when interpreting this data in India, one should account for local epidemiological differences, such as an earlier ANM and distinctive patterns of breast cancer, CVD, metabolic risk, and osteoporosis seen in Indian women.^[69-76]
52. MHT should be prescribed for accepted indications, in appropriately selected women, with an understanding that secondary benefits alone do not constitute a sufficient indication for therapy.

Types, terminology

53. Hormone therapy (HT) in menopause medicine is an umbrella term that covers various treatment approaches (estrogen alone or in combination with progestogen and androgens).^[71-77]
54. **Types:** Estrogen therapy (ET)- 17 beta estradiol (E2)/conjugated equine estrogen (CEE)/estriol/estradiol valerate (EV)/estetrol. Combined estrogenestradiolini therapy (EPT)- The commonly used progestones in EPT are micronized progesterone (MP),

- dydrogesterone (DYD), and the levonorgestrel-releasing intrauterine system (LNG). Selective estrogen receptor modulators (SERMs) -The available SERMS in India are tibolone and raloxifene. Androgen therapy for women is not available in India.
55. **Treatment terminology:** Based on the pharmacokinetics of HT, as well as the individual's age and health profile, the following terminology is recommended (Grade C).^[71-77]
 56. **Estrogen replacement therapy/hormone replacement therapy (ERT/HRT):** replicates the estrogen environment of premenopausal women as in premature ovarian insufficiency (POI) and early menopause (EM). It has no contraceptive effect.
 57. **Estrogen additive therapy (EAT/MHT):** complements endogenous postmenopausal estrogen with exogenous estrogen, tailored to meet the indication for HT as in the management of menopause within 10 years of menopause.^[77]
 58. **Estrogen maintenance therapy (EMT):** which involves continuing the therapy beyond 10 years of menopause.
 59. **Oral contraceptive pills (OCPs):** are hormonal preparations containing either combined estrogen-progestin (usually including ethinyl estradiol, and in some cases, 17 beta estradiol, EV, or estetrol) or progestin alone, used primarily for contraception and for the regulation of menstrual and hormonal disorders.
 60. During MT, low-dose combined oral contraceptives (COCs) can ease vasomotor and mood symptoms, may support bone health, and decrease the risk of colorectal cancer (Grade B).^[78-82] COCs offer effective contraception, help regulate irregular bleeding, and lower the risk of endometrial and ovarian cancers (Grade A).^[81,82]
 61. Although no definitive randomized trials to date compare continuous versus cyclic OCP use specifically in women during the MT expert guidance and reviews support shortened or eliminated hormone-free intervals with continuous or extended use to reduce VMS and abnormal bleeding, as learnt from continuous combined HT users.^[78,80,83-86]
 62. **Checklist before prescribing MHT:** Before starting MHT, every woman should undergo a comprehensive clinical evaluation and personalized risk assessment (Grade A).^[87-90] Counseling must include potential benefits, risks, and alternatives. A documented, written informed consent is highly recommended as part of shared decision-making and medico-legal safety. Refer to Figure 3.
 63. The concept of precision medicine in prescribing systemic MHT emphasizes individualized therapy, where treatment is tailored to each woman and may change over time as her age, risk profile, symptoms, and health status evolve.

Hormone Therapy Consent Form

It is important to understand that like all medicines, MHT has benefits and possible side effects.

Purpose of MHT : I understand that Menopausal Hormone Therapy is prescribed to manage menopausal symptoms and prevent bone loss in selected women within 10 yrs of natural menopause and during menopause transition. It is strongly recommended in women with premature menopause unless contraindicated.

Benefits Explained: Reduction of increased hot flashes, night sweats, improvement in mood, improved sleep and sexual health, Improvement in vaginal dryness itching and burning. It prevents postmenopausal bone loss and fractures.

Risks Discussed: all are rare incidents-a small increase in blood clots with oral estrogen, lower with nonoral route.

Breast Cancer: Estrogen alone does not increase the risk of breast cancer and has shown to have 0.7 fewer cases per 1000 women per year in women who have undergone hysterectomy. Estrogen with micronized progesterone or dydrogesterone has minimal breast cancer risk for up to 5 years. Conjugated equine estrogen (CEE) combined with medroxyprogesterone acetate (MPA) was associated with approximately 0.8 additional breast cancer cases per 1000 women per year compared with placebo.

Lifestyle factors such as obesity, physical inactivity and alcohol use contribute more substantially to overall postmenopausal breast cancer risk than MHT.

Side effects Discussed: breast tenderness, vaginal bleeding, headaches, bloating

Patient Responsibilities: Report new symptoms, attend follow-up, inform if I wish to stop therapy.

Patient Consent

I voluntarily consent to begin/continue MHT.

Signature of Patient: _____ Date: _____

Doctor Declaration

Name of Doctor: _____

Signature: _____ Date: _____

Figure 3: Hormone Therapy Consent Form

64. The six right principles for prescribing systemic MHT are to select the right woman, right age, right hormone, right regimen, right route, and right dose.
65. **Right woman:** The classical indications for postmenopausal MHT that have consistently withstood the test of time, supported by evidence from multiple randomized clinical trials and meta-analyses, are the beneficial effects of estrogens on moderate-to-severe VMS and urogenital atrophy.^[91-97] In eligible women at risk for fracture, MHT may be considered after full risk assessment (Grade A).^[95,96] HT is strongly recommended for women with POI and should be offered to women with EM until they reach ANM (Grade A).^[98-102]
66. **Right age:** MHT has the most favorable benefit-to-risk profile when started within roughly 10 years of menopause. For starting later than 10 years after menopause or in women over 60, the benefit-to-risk ratio becomes less favorable, and shared decision-making is crucial. It is not recommended for women >20 years postmenopause.^[77,103-110]
67. **Right hormone:** Estrogen. Both CEE and 17 β -estradiol effectively relieve vasomotor symptoms (Grade A).^[111,112]
68. Oral CEE favorably alters HDL and Lp(a) levels but raises triglycerides, C-reactive protein (CRP), and clotting factors due to hepatic first-pass effects. Use CEE for lean, low-risk women; prefer 17 β -estradiol (oral or transdermal) for those with cardiovascular and metabolic risks (Grade B for selection).^[106,107,113-119]
69. EV is a synthetic ester of 17 β -estradiol that is quickly hydrolyzed to estradiol following oral or parenteral administration. Its clinical efficacy and safety are comparable to those of other oral estrogens for symptom relief and bone protection, although large RCTs are lacking.^[120-123]
70. Progesterone: The choice of a progestogen to accompany systemic ET should be based on endometrial safety, systemic risk profile, tolerability, route preference, and cost-effectiveness.^[124-127]
71. All approved progestones effectively prevent estrogen-induced endometrial hyperplasia when used at the correct dose and duration, tailored to individual needs based on estrogen potency and route.
72. MP and DYD maintain a neutral metabolic and vascular profile and are considered Venous thromboembolism (VTE) neutral when combined with transdermal ET (Grade A).^[127-130]
73. Evidence from extensive cohort studies indicates that estrogen combined with MP or DYD does not seem to increase breast cancer risk during typical usage durations of <5 years and may pose a lower risk than regimens using synthetic progestins such as medroxyprogesterone acetate (MPA) (Grade B).^[131-135] Long-term use exceeding 5–7 years requires individualized reassessment, as data beyond this period remains limited.
74. However, the National Institute for Health and Care Excellence (NICE) evidence review states that “it is unclear whether different progestogen types alter breast cancer risk.” It therefore does not currently recommend choosing progestogen solely based on breast cancer risk.^[136-139]
75. A large Norwegian cohort study involving over 1.3 million women found that combined oral estrogen–progestin therapy was linked to a two-fold increase in breast cancer risk, with differences depending on the formulation. Vaginal estradiol showed no increased risk. The study did not include MP or DYD regimens, so its findings mainly relate to synthetic progestins.^[135]
76. These data emphasize that breast cancer risk from MHT varies with regimen and duration, endorsing personalized treatment and regular review (Grade A).^[131-135]
77. MP helps improve sleep in women with insomnia, but it can cause daytime drowsiness in some.^[140,141]
78. DYD: The combination formula offers oral bioavailability, minimal sedation, and fixed-dose components, all of which improve patient adherence.^[142-144]
79. LNG-IUS, 20 μ g/day: offers effective endometrial protection for 5 years. It has a higher initial cost and necessitates procedural insertion.^[138,145,146]
80. **Right regime:** available treatment options include estrogen alone, sequential combined hormone therapy (scMHT), and continuous combined hormone therapy (ccMHT) regimens. The choice of an appropriate regimen should be guided by factors such as menopausal stage, uterine status, symptomatology, and patient preferences. Refer to Figure 4.
81. An estrogen-only regimen is recommended for women who have undergone surgical menopause. Estrogen is administered daily without interruption.^[103]
82. Exceptional cases: Firm evidence is lacking; we recommend adding progestogen to estrogen in hysterectomized women who have residual endometrial tissue after endometrial ablation or supracervical hysterectomy, a history of endometriosis, and stage I endometrial carcinoma.^[147-149]
83. Alternative: Tibolone 2.5 mg/day may also be considered for women without a uterus.^[150,151]
84. scMHT Regimen: In women with an intact uterus, adding a progestogen is crucial to counter the proliferative effects of estrogen on the endometrium and prevent hyperplasia or carcinoma. Estrogen daily with progestogen added for 12–14 days each month is indicated for women in late MT or within 1–2 years of the FMP. Predictable withdrawal bleeding occurs at the end of each progestogen cycle. Shorter progestogen phases (<10 days) or use beyond 5 years are linked to an increased risk of endometrial cancer.^[152,153]

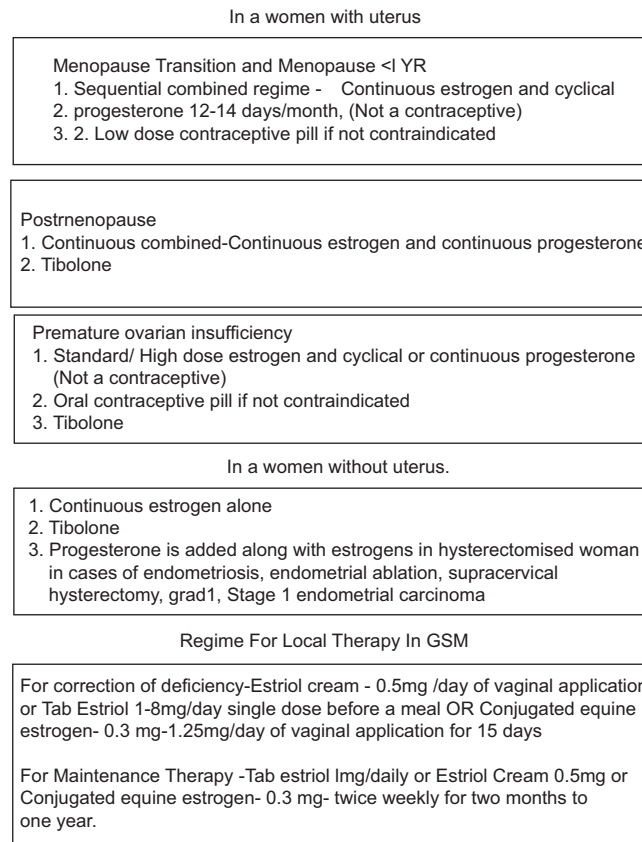


Figure 4: Systemic regime depending on the stage of menopause

85. Alternative: Low-dose combined OCPs may be used in early or late MT for both symptom relief and contraceptive protection (Grade A).^[83,84,85]
86. ccMHT regimen: involves daily administration of estrogen and progestogen without interruption. This approach maintains consistent hormonal levels and aims to induce endometrial atrophy over time.^[86,153]
87. A 2020 review suggests that scMHT with synthetic progestins, as well as either scMHT or ccMHT with MP, may be associated with a modest rise in endometrial cancer risk when progestogen exposure is insufficient.^[152] This risk appears especially relevant with shorter progestogen phases, lower doses, or duration exceeding 5 years. Adequate endometrial protection requires administering progestogen for at least 12–14 days per 28-day cycle or providing continuous exposure, depending on the type of progestin, the dose, and the duration of MHT use.^[135,152,153] Refer Figure 4 MHT regimes.
88. **Right route:** oral versus transdermal should be personalized according to cardiovascular/metabolic risk profile, clinical indications, and patient preference.^[104,131,154-157]
89. Transdermal estrogen: is the preferred route of administration for postmenopausal women with metabolic or vascular risk factors such as obesity, metabolic syndrome, type 2 diabetes mellitus, hypertriglyceridemia, elevated CRP, and controlled hypertension.^[117,128,129,158]
90. It is also recommended for women with migraine with aura, gallbladder disease, bowel disorders (such as irritable bowel syndrome or inflammatory bowel disease), or those who smoke, including women using hepatic enzyme-inducing medications such as phenytoin or carbamazepine.^[157,159]
91. Transdermal estradiol may be beneficial for some women experiencing sexual dysfunction, as it better preserves libido and genital blood flow, whereas the oral route may reduce free testosterone and sexual desire in certain users. Evidence from randomized trials supports biological plausibility, although data are limited and the Cochrane review has not specifically investigated differences in route (Grade B).^[160,161]
92. Oral estrogen: In women with low HDL, oral estrogen has a greater effect on raising HDL levels than transdermal routes and also reduces lipoprotein(a).^[162,163] Oral MHT positively impacts glucose metabolism and insulin sensitivity, potentially reducing the risk of developing type 2 diabetes in women without preexisting diabetes (Grade A).^[163,164]
93. **Right dose:** Use the appropriate, minimum, effective, and adjustable dose for symptom relief or bone protection, with dose tapering as age advances.^[165,166] Low-dose and ultra-low-dose therapies effectively alleviate symptoms and help sustain bone mass^[92,167,168] [Tables 12 and 13].

Table 12: Doses of estrogen therapy

Estrogens	Ultra low	Low	Standard	High
CEE-oral (mg)	0.15	0.3, 0.45	0.625	1.25
17 β -estradiol (mg) oral	0.25,	0.5	1.2	4
17 β -estradiol (mg) transdermal	0.014	0.025	0.05	0.1
EV (mg) oral		1	2	4

CEE: Conjugated equine estrogens, EV: Estradiol valerate

Table 13: Types of progesterones and the required dose for preventing endometrial hyperplasia

Progestosterone (mg)	Sequential combined regimen	Continuous combined regimen
MP (oral preferable vaginal)	Oral E2 – ≤ 1 mg/CEE - 0.3 mg/TDE ≤ 0.025 –200 mg of MP for 14 days Oral E2 – 2 mg/CEE – 0.625 mg/TDE – 0.05–300 mg for 14 days	Oral E2 – 1 mg/CEE – 0.3 mg/TDE – 0.025–100 mg Oral E2 – 2 mg/CEE – 0.625/TD – 0.05–200 mg
DYD	Oral E2 – ≤ 1 mg/CEE – 0.3 mg/TDE ≤ 0.025 –10 mg for 14 days Oral E2 – 2 mg/CEE – 0.625 mg/TDE – 0.05–10 mg for 14 days	E2 1 mg: 5 mg E2 0.5 mg: 2.5 mg (ultra low dose)
LNG (intrauterine)	52 mg (releases 20 μ g/day)	52 mg (releases 20 μ g/day)

CEE: Conjugated equine estrogens, LNG: Levonorgestrel-releasing intrauterine system, MP: Micronized progesterone, DYD: Dydrogesterone, TDE: Transdermal estradiol

94. It is important to note that the precise optimal dose for each patient remains personalized, and the evidence is continually evolving. The progestogen dose should be proportional to the estrogen dose to suppress the endometrium. The evidence comparing oral and transdermal MHT regarding dose equivalence for progestogens is limited.^[124,169-171]
95. Enhanced monitoring and clinical vigilance are recommended in women with persistent endometrial thickening (>5 mm), obesity (higher endogenous estrogen), or those receiving MHT for >5 years.

Indications of menopausal hormone therapy: Refer to Figure 5

96. Vasomotor symptoms: The most effective treatment for VMS is MHT during menopause transition (Grade A).^[91,93,172,173]
97. Depression, Mood, and Sleep: Refer to Section 1.
98. Genitourinary syndrome of menopause: Refer to Section 2.
99. Osteoporosis: Refer to Section 3.
100. **Absolute contraindications of systemic HT:** Undiagnosed abnormal vaginal bleeding; known, current, suspected, or past breast cancer, estrogen-dependent cancers (endometrial, ovarian, and others); active or recent VTE; history of stroke or MI; severe active liver disease with impaired or abnormal liver function; porphyria cutanea tarda; dementia; hypersensitivity; and known or suspected pregnancy (Grade A).^[92,136,157,174]
101. **Relative contraindications:** The presence of latent or established comorbidities requires personalized assessment, shared decision-making, and coordination within a multidisciplinary care team to ensure safe initiation and monitoring of therapy.
102. **Drug Interactions:** Enzyme-inducing drugs, such as rifampicin, barbiturates, and some antiepileptic drugs like phenytoin or carbamazepine, may accelerate the metabolism of (MHT) and reduce its effectiveness; clinicians should monitor and adjust accordingly (Grade B).^[87]

Duration of use

103. POI: HRT should be maintained until the average ANM (Grade A).^[175-182]
Continuation beyond the ANM should be a jointly reviewed decision, considering ongoing indications, patient preferences, and an evolving risk profile (Grade C).^[98,183,184]
104. Early menopause: Continuation beyond 48–50 years may be considered on an individual basis through shared decision-making when symptomatic or for bone protection.^[175-177]
105. Natural menopause: After nearly 20 years of follow-up, Women's Health Initiative (WHI) trials showed that EPT and ET were not associated with increased all-cause, cardiovascular, or overall cancer mortality when initiated around the MT.^[185-187]
106. Extended therapy beyond these durations may be justified through shared decision-making, particularly for women with recurrent VMS or for osteoporosis prevention when other therapies are unsuitable. Management should remain personalized, with an annually documented benefit–risk review and careful attention to the hormone regimen, duration, and route of administration.^[135,70,188-191]

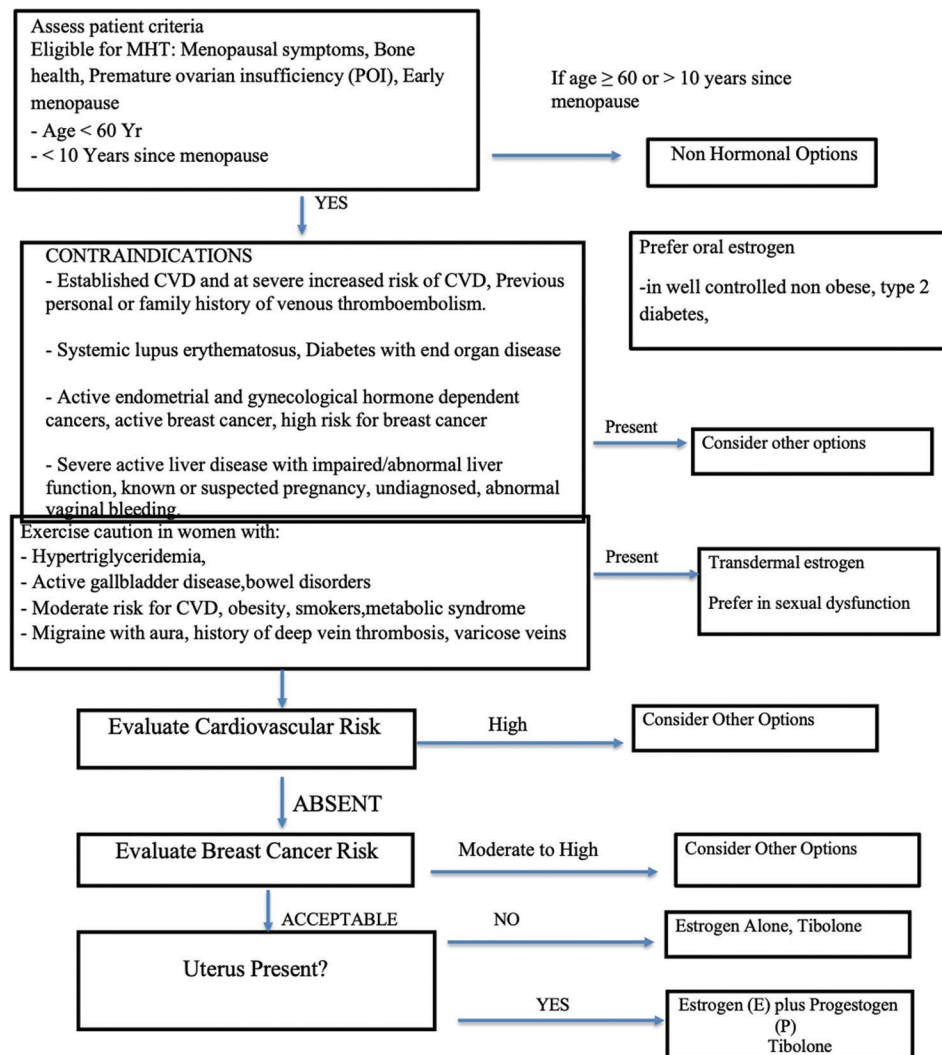


Figure 5: Flow chart to prescribe menopausal hormone therapy

107. Local ET continues to be the primary treatment for GSM across all ages, due to its proven effectiveness and safety with minimal systemic absorption, and may need long-term use (Grade A).^[190]

108. **Follow-up:** Review at 1–2 months after initiation to assess compliance, tolerance, and side effects; at 3 months to address unscheduled bleeding or intolerance; and annually thereafter for a comprehensive evaluation, including risk re-evaluation for NCDs and an updated benefit–risk analysis. Modify the dose or route of therapy as appropriate to the changing clinical profile of the aging woman.

109. **Situations requiring immediate discontinuation of HT:**

- New or worsening migraine and headache pattern
- Visual disturbances such as blurring or symptoms indicating vascular occlusion (e.g., retinal thrombosis)
- Jaundice or indications of liver dysfunction
- Persistent or significant elevation in blood pressure
- Furthermore, HT should be stopped 4–6 weeks prior to elective major surgery involving prolonged immobilization to reduce the risk of VTE
- If new breast symptoms (lump, nipple change) or unexpected bleeding occur during therapy, the appropriate evaluation should be undertaken, and the decision to continue or pause MHT is made on a case-by-case basis.
- Unscheduled bleeding until a diagnosis is reached
- Therapy may be reviewed and resumed following full recovery and a comprehensive clinical reassessment of the patient's risk profile.

110. **Common adverse effects of MHT:** Fluid retention may occur in the short term. Recommend reducing dietary salt intake, maintaining adequate hydration, encouraging regular physical activity, and reviewing the estrogen dose. Persistent or troublesome edema should prompt dose reduction or a change in route.
- Bloating: consider switching to a low-dose transdermal estrogen; reduce the progestogen dose to the level that still protects the uterus; switch to an alternative progesterone.
- Breast tenderness is common during the first few months. Consider reducing the estrogen dose, switching to a different form of estrogen, or trying a different progestin.
- Headaches: Switching to transdermal estrogen and using the lowest effective dose often improves tolerance; some women benefit from a continuous-combined regimen.
- Mood changes: Lower the progestogen dose; switch progestogen; or change from systemic progestin to the LNG-IUS.^[151]
- Nausea: Advise taking the tablet with food or at bedtime; if it persists, reduce the estrogen dose or switch to a transdermal preparation.
- Chloasma: recommend broad-spectrum sunscreen for women prone to it.
- Persistent menopausal symptoms: despite seemingly adequate MHT, reassess the diagnosis, adherence, and drug–drug interactions, especially enzyme-inducing antiepileptics and TB drugs. Then, adjust the estrogen dose or change the route, and optimize the progestogen regimen.^[151,191]
- Bleeding: during HT is common when beginning MHT, especially within the first 3–6 months or within 3 months of adjusting the dose or route.^[192] In scMHT, a scheduled withdrawal bleed is expected at the end of the progestogen phase.^[192] Unscheduled bleeding, such as spotting, heavy, or persistent bleeding outside the normal phase, bleeding before completing the progestogen phase in sequential regimens, or any new bleeding after 6 months on a continuous-combined regimen, requires investigation.^[192]
- While TVS of the endometrium is the standard first-line investigation, it may not exclude pathology in women on MHT, and endometrial sampling remains the definitive method to exclude hyperplasia or carcinoma.^[192]
- Thick endometrium on TVS in women without bleed: After 6 months of amenorrhea, with an ET of <10 mm, and no significant risk factors for endometrial cancer, can be offered adjustments in their progestogen therapy and follow-up instead of immediate biopsy.^[192]
- Individuals with one major or two minor risk factors for endometrial carcinoma, and with ET >4 mm on ccMHT or >7 mm on sc/ccMHT, should be offered EB. If the endometrium appears inhomogeneous, cystic, or irregular, or if bleeding recurs, EB is recommended regardless of ET measurement (Grade B).^[192]
111. **Stopping MHT:** Discuss both abrupt and gradual taper options, taking into account the woman's previous VMS burden, age, and tolerance. Ensure follow-up to address potential recurrence of symptoms. Symptoms recur in up to 50% of women, usually within the first few months after stopping therapy. There is no high-quality evidence that tapering the dose reduces recurrence or severity of vasomotor or other menopausal symptoms compared with abrupt cessation.^[193-196]

Special clinical situations: Judicious use of menopausal hormone therapy, when benefits clearly outweigh risks

112. **Continuing MHT beyond 10 years from menopause or after age 60:** MHT may be continued in healthy women already using low-dose transdermal estradiol with MP or DYD, provided the benefits outweigh the risks. An annual review of symptoms, breast and cardiovascular health, and any emerging contraindications is essential.^[107,197-201] When risks related to cardiovascular, thrombotic, or cognitive issues emerge, nonhormonal options are preferred (Grade A).^[107,187,198]
113. Vasomotor and sexual symptoms may continue into the seventh and eighth decades, and residual GSM symptoms often need ongoing treatment. Symptom-driven, personalized continuation is suitable when benefits outweigh risks.^[199-201]
114. **Re-starting or initiating systemic MHT beyond 10 years from menopause or after age 60** enters the early hazard window for VTE and stroke: If therapy is clinically indicated for severe symptoms, opt for transdermal 17 β -estradiol (up to 50 μ g/day) with MP or DYD, as this combination is linked to lower VTE and stroke risks than oral estrogen–progestin therapy (Grade A).^[107,192,202-208] The prolonged use of MHT in appropriately selected women does not raise all-cause or cardiovascular mortality and can improve quality of life.^[107,192,202-208]
115. **Starting systemic MHT *de novo* more than 20 years after menopause, usually at age 70** or older, is not recommended, owing to increased risks of coronary events, stroke, venous thrombosis, and dementia as shown in WHI and other studies (Grade A).^[203] Nonhormonal options should be preferred in this group.^[203]
116. **For bone health after 10 years postmenopause:** Nonhormonal pharmacological options, such as bisphosphonates, denosumab, or SERMs, are preferred when MHT is generally not recommended for primary osteoporosis prevention (Grade A).^[204,208]
117. **Systemic lupus erythematosus (SLE):** Active SLE or the presence of antiphospholipid antibodies (aCL or lupus anticoagulant) significantly increases the risk of VTE and stroke.^[209] Mild or stable SLE without additional thrombophilia

can be safely treated with MHT. Randomized data show no significant increase in severe flares among stable SLE patients receiving MHT.^[209]

118. **MHT and comorbidities:** Refer to Section 3.
119. **Breast cancer survivors:** In patients aged 40–45 years with breast cancer and secondary amenorrhea following chemotherapy, an undetectable anti-Müllerian hormone at 30 months serves as a reliable predictor of permanent menopause.^[210] Refer to Section 5.
120. **Benign breast diseases:** Do not carry a high risk of malignancy and are not a contraindication to HT. MHT may be used with appropriate screening and vigilance (Grade C).^[211,212]
121. MHT and Mammograms: Combined estrogen–progestin therapy raises mammographic breast density, resulting in higher recall rates and decreased mammographic sensitivity. About half of the increased risk of hormone-receptor-positive breast cancer associated with MHT seems to be mediated through this change in density.^[213] Mammographic density usually decreases within 1–2 years after stopping therapy. Continued personalized breast imaging and monitoring are advised.^[214]
122. **Breast, MHT, and Cancer Risk:** Women with a low and moderate baseline risk of breast cancer may be prescribed MHT based on individual needs after a comprehensive history, breast examination, use of risk assessment tools, and informed counseling. They should receive accurate, evidence-based information about MHT-related breast cancer risk (Grade A).^[134,136,185,215,216]
123. **In women at high risk of breast cancer and in breast cancer survivors,** nonhormonal therapies are preferred for symptom relief. Systemic MHT is contraindicated due to recurrence risk, as shown in HABITS and LIBERATE trials (Grade A).^[185,217-219]
124. However, in rare individual cases, HR-negative disease, long disease-free interval, intolerable symptoms, multidisciplinary consent where systemic MHT is being considered, a comprehensive risk–benefit assessment, and shared decision-making between the oncologist and menopause specialist are essential.^[220,221]
125. In BRCA1/2 mutation carriers who undergo risk-reducing bilateral salpingo-oophorectomy, short-term systemic HT up to the median age of natural menopause seems safe (Grade B).^[222-224] The use of HT in this context aims to prevent the consequences of premature estrogen deprivation.^[222-224] Continuing systemic MHT beyond the natural age of menopause (Grade A)^[222-224] is discouraged due to limited long-term safety data on breast and vascular outcomes (Grade C).^[185]
126. MHT should be avoided in BRCA carriers who have had previous breast cancer and in women with significant baseline risk factors.^[220]

Preexisting cancers and menopausal hormone therapy

127. Decisions regarding MHT after cancer should be made through shared decision-making, involving both the patient and the treating oncologist.^[225,226] Recommend offering transdermal instead of oral MHT.^[227]
128. **MHT is neutral:** Low-grade, early-stage EC type I, cervical adenocarcinoma, epithelial ovarian cancer, germ cell tumors, hematological malignancies, local cutaneous malignant melanoma, colorectal cancer, hepatocellular cancer, BRCA 1/2 mutation carriers without cancer, most types of ovarian cancer, squamous cell carcinomas of the cervix, vaginal and vulvar squamous cell carcinoma, prolactinoma, kidney cancer, pancreatic cancer, and thyroid cancer.^[225,228-231]
129. **MHT is relatively contraindicated:** leiomyosarcoma, EC type II, advanced metastatic malignant melanoma, gastric cancer, bladder cancer, and lung cancer (Grade B).^[152,225,230,232]
130. **MHT is contraindicated** in women with endometrial stromal sarcoma, uterine carcinosarcoma (Grade A), ovarian cancers such as estrogen-dependent granulosa cell tumors, low-grade serous tumors, and Sertoli–Leydig tumors, as well as endometrioid ovarian tumors, cervical adenocarcinoma, meningioma, glioma, and hormone receptor-positive cancers. Gastric and bladder cancers are also contraindicated due to increased risk of recurrence or tumor stimulation (Grade B).^[152,225,226,230,232]

Integrated conclusions on the risks and benefits of systemic hormone therapy within 10 years of menopause, based on evidence from WHI [Refer to Tables 14 and 15], PEPI, KEEPS, ELITE, and DOPS Trials

131. The risk–benefit balance of MHT varies depending on several factors, including the woman’s age, time since menopause, baseline health status, family history of noncommunicable diseases and cancers, route of administration, and the specific regimen used.
132. Risks are reduced when therapy starts before age 60 or within 10 years of menopause, following a thorough individual risk assessment, with annual reviews to reassess indication, dose, and duration.
133. As with other long-term therapeutic interventions, careful patient selection, judicious use, and regular monitoring are essential to maximize benefits and minimize potential risks.
134. The risk–benefit balance of MHT depends on several factors, including the woman’s age, time since menopause, baseline health status, route of administration, and regimen used. Risks are minimized when therapy is started before the age of 60 or within 10 years of menopause and is reviewed annually.

Table 14: Based on women's health initiative, the number of excess events on hormone therapy versus placebo per 10,000 women per year of hormone therapy

Disease	E	WHO/CIOMS definition of risk	E + P
VTE	4	Rare 1/1000–1/10,000	11
Stroke	1	Rare 1/1000–1/10,000	4
Breast cancer	NA	Rare 1/1000er/10,000	5
CVD	NA	Rare 1/1000er/10,000	5

Use between the age groups of 50 and 59 years. CVD: Cardiovascular disease, CIOMS: Council for International Organizations of Medical Sciences, WHO: World Health Organization, VTE: Venous thromboembolism, NA: Not applicable, E + P: Estrogen + progesterone

Table 15: Based on Women's Health Initiative: Fewer events on estrogen versus placebo per 10,000 women per year of hormone therapy use between the age group of 50 years and 59 years

Disease	Number of less events with ET
Heart disease	12
Breast cancer	8
Disease	Number of less events with E/EPT
Overall mortality	10
Fractures	5
Colorectal cancer	6

ET: Estrogen therapy, EPT: Estrogen–progestin therapy

135. As with other long-term therapeutic interventions, careful selection, judicious use, and regular monitoring of MHT are essential to maximize benefits and minimize potential risks.

Risks of systemic therapy

136. The magnitude and type of MHT-related risks in the 50–59-year age group, including breast cancer, and stroke, are rare, with fewer than 10 cases per 10,000 women with VTE showing 11 events. These risks are lower with CEE than with CEE plus MPA and are equal to or lower than those linked to obesity, a much more common and modifiable risk factor.^[233-238]
137. **Cardiovascular disease:** Systemic therapy should not be used for primary or secondary prevention of CVD. At any age, women at high risk of CVD or with established CVD should avoid MHT (Grade A).^[239]
138. **VTE:** MHT increases the absolute risk by 4 in 10,000 women for ERT users and 11 in 10,000 for EPT users, while in OCP users, it ranges from 3 to 15 per 10,000 woman-years (Grade A). The risk peaks during the first 1-2 years of treatment and is influenced by the oral route, obesity, smoking, thrombophilia, and age.^[157,208,240,241]
139. The absolute risk of VTE is significantly higher during physiological states such as pregnancy, with 5–20 VTE cases per 10,000 deliveries, and reaches its peak in the postpartum period at 40–65 per 10,000 woman-years.^[242]
140. Transdermal ET (Grade A) and natural progesterones (Grade C) may not cause VTE. Population screening for thrombophilia is not recommended before using MHT.^[243,244]
141. **Stroke:** Unlike CVD, the timing hypothesis does not apply to stroke, as the risk appears predominantly thrombotic rather than atherosclerotic in origin.^[245]
142. Standard-dose oral estrogen or combined EPT is linked to an absolute increase of 2 additional strokes per 10,000 woman-years among those aged <60 years (Grade B).^[206,245] For women aged 50–54 years, the excess absolute risk is 1.5 per 10,000 woman-years, rising to 2.2 at age 59 and 2.8 at ages 60–64.^[206,240,243,245-247]
143. The risk increases with estrogen dose, age, and route of administration, reaching its highest during the first 1–2 years of treatment. In contrast, low-dose (≤ 50 µg/day) transdermal estradiol and nonoral routes do not seem to raise stroke risk compared to nonusers (Grade C).^[198] The event rate, therefore, stays very low, particularly in younger, healthy postmenopausal women using low-dose or transdermal formulations.^[198]
144. **MHT and breast cancer:** The impact of MHT on breast cancer risk is complex, influenced by background risk, type of MHT, dose, duration of use, regimen, route of administration, and prior exposure.
145. The incremental risk associated with MHT is minimal, with an estimated increase of fewer than 1 additional case per 1000 women aged 50–59 years annually (Grade A).^[185,216,219,248] This level of risk is comparable to or lower than that related to common preventable lifestyle factors such as obesity, alcohol consumption, and physical inactivity (Grade A).^[185,216,219,248]
146. The increased breast cancer risk associated with CEE + MPA diminishes after discontinuation, usually returning to nonuser levels within about 3 years, particularly following short-term use. However, some elevated risk may persist after more than 5 years of use or with certain synthetic progestins (Grade A).^[185,216,219,248]

147. Tumors in women using MHT are usually ER-positive and of the lobular type (Grade C).^[216,248]
148. The Collaborative Group Lancet 2019 meta-analysis synthesized only observational data. These findings suggest a slight absolute increase in breast cancer risk, mainly with combined estrogen–progestin therapy, and a lower risk with estrogen-only therapy.^[38]
149. According to this analysis, adopted by NICE Guidance 2020 (NG23) as a patient discussion aid for women starting MHT at around age 50 and assessed for risk between ages 50–69 years, the estimated excess breast cancer cases after 5 years of use are:^[136]
Continuous combined MHT: one additional case per 50 users.
Sequential combined MHT: one additional case for every 70 users.
Estrogen-only MHT: one additional case per 200 users.
All estimates are based on observational data, mainly using oral 17 β -estradiol and synthetic progestins in older women aged 50–69 years.^[137] The findings generally align with the Norwegian EBBA-Life cohort and both the studies found no increased risk with vaginal estrogen.^[135]
150. In contrast, DOPS, a randomized trial in younger postmenopausal women using 17 β -estradiol $\pm$ norethisterone acetate, found no increase in breast cancer incidence or mortality and reported an overall reduction in mortality after 16 years.^[131]
151. Similarly, in the WHI trial, women receiving CEE 0.625 mg experienced a statistically lower incidence of breast cancer compared with placebo, and this benefit persisted for over 20 years of extended follow-up. The combined estrogen plus progestin arm showed a modest increase in incidence, mainly limited to the duration of treatment, but no significant difference in breast cancer-specific mortality was observed (Grade A).^[185]
152. When counseling women, the focus should be on absolute risks quantified in RCTs, as observational data are susceptible to residual confounding and selection bias.^[249,250] Therefore, counseling should primarily depend on RCT-derived absolute risk estimates from WHI and DOPS, while recognizing supportive observational trends. This approach encourages shared decision-making and personalized risk stratification based on age, time since menopause, comorbidities, and treatment goals.
153. **MHT and ovarian cancer:** In absolute terms, ovarian cancer risk is a rare event with estrogen alone (CEE), the increase is by approximately 0.2 per 1000 women, 0.1 in CEE plus MPA regime, and about 1 per 1000 women with estradiol alone (Grade A).^[136,187]
154. **MHT and endometrial cancer:** Unopposed systemic estrogen (CEE or E2 alone) in women with an intact uterus carries an absolute risk of 1–3 cases per 1000 women.^[251] Continuous combined estrogen–progestin therapy (CEE + MPA) lowers endometrial cancer incidence by approximately 3–4 cases per 10,000 women-years compared to placebo.^[251,252]
155. Combined oral contraceptives provide significant and lasting protection against both ovarian and endometrial cancers and should be recognized as protective factors in women's lifetime risk assessments (Grade A).^[253,254]
156. **MHT and gallbladder:** The use of oral estrogen-alone or combined MHT is linked to a higher risk of gallstones, cholecystitis, and cholecystectomy (Grade A).^[92] Observational evidence suggests that transdermal estrogen has a lower risk of gallbladder disease compared to oral preparations, and that oral estradiol may pose a reduced risk relative to CEE. However, these differences have not been confirmed in randomized controlled trials (Grade C).^[255,256]

Benefits of systemic therapy

157. When initiated near menopause, systemic HT offers significant benefits beyond vasomotor relief, positively impacting metabolic health, bone density, mood, and sleep while also potentially lowering the risk of diabetes and colorectal cancer.^[257-260]
158. MHT enhances QOL by providing consistent relief from vasomotor and urogenital symptoms, as well as improving sleep quality, mood, and cognitive well-being (Grade A).^[261,262] Reductions in coronary events and all-cause mortality with low absolute risks of serious adverse events were noted in the WHI in the younger women.^[263]
159. Androgens: Available data are of low quality and conflicting regarding the risk of breast cancer associated with androgen use.

Tissue-selective hormone modulators

160. **Tibolone:** Tibolone is a selective tissue estrogen receptor modulator. It is a synthetic steroid compound with estrogenic, progestogenic, and androgenic properties. It exerts an estrogenic effect on bone, inhibiting bone resorption by reducing osteoclastic activity.
161. Tibolone is effective in treating VMS and improves urogenital atrophy. It improves mood and libido (Grade B).^[150] It is prescribed in a single daily dose of 2.5 mg orally. A lower dose of 1.25 mg is equally effective for most indications, including osteoporosis (Grade A).^[264]
162. **Raloxifene** is a selective estrogen receptor modulator (SERM) indicated for the prevention and treatment of postmenopausal osteoporosis, particularly in women at increased risk of breast cancer. It acts as an estrogen agonist in bone and lipid metabolism, and as an antagonist in breast and endometrial tissue.^[265,266]
163. Raloxifene lowers the risk of invasive estrogen receptor–positive breast cancer by approximately 60%–70% in postmenopausal women, without stimulating the endometrium (Grade A). The recommended dose is 60 mg once daily.^[264,265]

164. **Bazedoxifene:** a third-generation SERM, acts as an estrogen agonist on bone and lipid metabolism and as an antagonist on breast and endometrium. When combined with conjugated estrogens (CE), it forms a tissue-selective estrogen complex (TSEC) that provides symptom relief and bone protection without the need for a progestogen (Grade A).^[267,268]
165. TSEC (CE + BZA) provides an effective alternative to traditional MHT for postmenopausal women with a uterus, particularly those at increased risk of breast cancer or intolerant to progestogens. However, it has a slightly increased risk of VTE and is contraindicated in women with previous VTE, breast or uterine cancer, or liver disease (Grade A).^[267,268]

Digital tools, artificial intelligence, and machine-learning approaches in menopause care

166. Postmenopausal women may use digital platforms (such as mobile applications, websites, search engines, and podcasts) solely for education, awareness, and symptom monitoring.^[268,269]
167. These platforms should not be used to initiate, modify, or cease therapeutic interventions without a clinician's supervision. Clinician-guided interpretation remains crucial to ensure safety, accuracy, and personalized care.^[269,270]

Economics of menopause management

168. Menopause imposes a measurable economic burden on women and society through decreased workplace productivity, increased healthcare utilization, and the ongoing costs of untreated chronic diseases developing in midlife. Untreated vasomotor and sleep symptoms alone have been shown to significantly reduce quality of life and work performance, leading to substantial indirect costs (Grade B).^[271]
169. The Indian healthcare system remains one of the most privatized globally, characterized by low public health expenditure and substantial out-of-pocket spending, which creates significant barriers to equitable access for midlife women. Gender and socioeconomic disparities further exacerbate this burden, especially among older women with multimorbidity.^[272]
170. Expanding insurance coverage for women in midlife, particularly beyond age 65, and subsidizing evidence-based preventive interventions such as bone-protective agents and cardiovascular screening would enhance equity and reduce catastrophic household expenditure in the long term.^[273]
171. Integrating menopause management into national NCD and women's health programs can lead to downstream cost savings by preventing osteoporosis, cardiovascular disease, and mental health issues through early detection and intervention.^[274,275]
172. Economic evaluations and modeling studies support that targeted lifestyle counselling and risk-based preventive screening in midlife/around the menopausal transition can be cost-effective, particularly when compared with the substantial downstream costs of osteoporotic fractures and cardiometabolic events (Grade B).^[276-279]
173. Setting up dedicated menopause clinics and integrating midlife health services into primary and district-level care are cost-effective, high-impact approaches to support healthy aging and reduce the long-term strain on India's health system (Grade B).^[280]

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Indian Menopause Society in 2026 and beyond through a Kaleidoscope

उर्ध्वमूलमधःशाखमश्वत्थं प्राहुरव्ययम् |, छन्दांसि यस्य पर्णानि यस्तं वेद स वेदवित् ||,

Gita shloka 15.1

The Indian Menopause Society (IMS) has progressed today, in its breadth, depth, and height, encompassing its growth from North to South and East to West of India, with 53 Societies and 6450 Members. This growth reminds me of a picture of Urdhva Mulaha [Figure 1]. There is always a temptation to compare the ever-progressive growth of an organization with that of a Banyan Tree. But I think founders were inspired to see that individuals with intuitive qualities are drawn to help make the multidisciplinary society a progressive one that can continue to grow through cross-breeding ideas and collective efforts to improve multidimensional and multidisciplinary Menopause Health Care.

As I consider the genesis of the remarkably progressive society, the IMS, my thoughts go back to 1995. In a small room adjacent to the Radiology and Imaging Department of a Multispecialty Modern Medical Hospital, Hinduja National Hospital and Medical Research Center, a multidisciplinary group of physicians, including internists, surgeons, oncologists, and gynecologists, had gathered to brainstorm an idea that could shape a model healthcare module to address the needs of Indian women transiting through the menopausal period and associated health issues. The unfolding of the history of IMS, from its inception in 1995 to 2018, has been sensitively, beautifully, and esthetically woven into a decorative coffee-table book by the then president of our society. One can sense the enthusiasm, dedication, and newness of each subsequent president and their team as they contribute to the field of Menopause Health Science and Care in those pages since 1995. The society's journal, namely., Journal of Midlife Health, has also been highlighted with pride as an indexed journal in many research databases, including PubMed.

Since the society's inception, the annual conferences have become an important platform for updating, sharing, and learning about emerging developments in the field from national and international experts. The difficult period of imposed isolation during the COVID-19 pandemic was effectively handled by holding the National Conference online.

The Speciality Menopause Healthcare Training module, IMS's flagship, was shaped a decade and a half ago under the chairmanship of the then IMS president. She herself had taken the speciality training and been credentialed as a Menopause Practitioner. The credentialed IMS menopause practitioner (CIMP) competency examination is now regularly conducted after the eligible candidate has completed training in accordance with the syllabus officially prepared and updated by the special cell under the President. Graduated practitioners receive certificates at the National Annual Conferences.

Periodic exchanges of emerging national data on diverse topics were strengthened through collaboration and, subsequently, by becoming members and/or occupying office-bearer positions in many International Societies. A vast canvas of yet unattended and emerging areas has begun to unfold over the last few years. IMS members have also served as leaders in several international societies around the world. The IMS has shaped and periodically updated Clinical Practice Guidelines (CPG), which have been very popular not only at home but also used, praised, and considered trustworthy by many International Menopause Societies. The humongous and intimidating task of writing, collating, and editing, while incorporating advancing fields rapidly, while sustaining its relevance for the Indian perspective, remains.

Another noteworthy aspect is the originality of the "35+ club." The concept captures the evolving endocrine environment and feedback mechanisms around age 35, offering a key chance for prevention and early disease detection, thereby emphasizing the program significance. Its broad acceptance and adoption by multiple chapters



earlier, and now by individual societies, have fostered a celebratory atmosphere while raising awareness of menopause and related health changes well before the typical age of menopause.

A thought always comes to my mind that self-confidence and praise should be tempered by sober introspection, including what we have not yet done, and it's glaring in front of our eyes. Opportunities knocking at the door are ignored when we are hyperfocused on the already-travelled path. There is an urgent need to expand the associate membership of IMS for groups working in similar areas, including basic scientists, allied fields such as social scientists, anthropologists, and other government-recognized systems of medicine, for trans-system dialogs and debates.

Highly qualified medical professionals from the Indian diaspora have returned home as part of a reverse brain drain, and many are attracting them to join in various capacities. Some have also chosen to provide clinical care to women living in rural and tribal areas of India, helping to expand society's horizons.

In the end, I am proud of the unstoppable progress IMS has made. I am grateful to Meeta for asking me to visit IMS today and to see its picturesque progress through a kaleidoscope.

Rama Ashok Vaidya^{1,2}

¹Founder President, IMS,

²Division of Endocrine and Metabolic Disorders, Kasturba Integrative Health Sciences - Medical Research Foundation, Mumbai, Maharashtra, India

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Menopause Medicine Comes of Age: A Founder's Message

The woman's health milestone of menopause has finally come of age both socially and medically. Yet, with recognition has come a flood of misinformation, unproven therapies, and misplaced claims of expertise. The Indian Menopause Society (IMS) is to be commended for these state-of-the-science updated Clinical Practice Guidelines (CPG) on Menopause 2026, summarising all we currently know and need to know.

My recognition of the "menopause void" was triggered in 1964, when, as a young resident in Johannesburg, I was assigned to review a paper titled "*The Fate of the Non-Treated Postmenopausal Woman a Plea for Adequate Estrogen from the Cradle to the Grave.*"^[1] At that time, menopause in textbooks was defined in a single line: "physiological amenorrhea." My search for scientific evidence for estrogen's broader health claims found none, but it sparked a lifelong pursuit.

In 1967, with the support of an open-minded mentor, I established the world's first *Menopause Research Clinic* at Groote Schuur Hospital, Cape Town.^[2] My early studies culminated in the first randomized controlled trial of estrogen therapy (1970), marking the beginning of menopause as a legitimate field of clinical and scientific inquiry.^[3]

Serendipity came to the fore in April 1973, when I received a letter from one Pieter van Keep, MD, PhD, Director-General of The International Health Foundation (IHF) based in Geneva, Switzerland expressing interest in my early medical publications, telling me of his early social studies on menopause, and inviting my research collaboration. The germinal ideas for much of organized menopause-related medicine had its origin on 1 day in May 1973, over 50 years ago when I met Pieter van Keep.

Over a single day of intense discussion, and more than one glass of wine we conceived the idea of a *menopause club*, later to become the *International Menopause Society (IMS)*, scientific meetings that became the International Menopause Congresses, and a newsletter, later evolving into *Maturitas*, the first dedicated menopause journal. Our shared conviction was that menopause (my basic and clinical science research approach melded well with Pieter's psychosocial interests) should be addressed through multidisciplinary collaboration linking biology, psychology, and social science. That belief remains central to the success of IMS, *North American Menopause Society (NAMS)*, and the global menopause movement.

By the mid-1970s, we had convened the first *International Menopause Congress*, and I introduced a standard set of definitions on menopause terminology and worked with the World Health Organization and IMS to further develop this process.^[4,5] The STRAW staging system was based on my published modification of the original staging table of van Keep and Kellerhals from the 1970's.^[6] Later, the founding of the *NAMS* in 1988 furthered our mission of scientific rigor and professional education, leading to the launch of *Menopause* (journal of NAMS), and the *Certified Menopause Practitioner* program.

For me at least, after almost 60 years of studying the menopause, the wheel has indeed turned full circle. I published in 1969 on the state of the art of postmenopausal hormone therapy at that time." My conclusion "*The possible major disadvantages of long-term therapy on the one hand are a fear of carcinogenesis and thrombogenesis. These risks, if valid, are extremely rare. On the other hand, the possible advantages of long-term therapy are also as yet unproven. Exogenous oestrogens are of undoubted value in the relief of symptoms such as hot flushes, the associated bouts of perspiration, and atrophic vaginitis.*

Their use in the prevention of coronary arterial disease and the problems of osteoporosis hold definite promise but the results of long-term prospective studies must be awaited before their routine use for the prevention of these disorders can be advocated... an important contribution of the gynecologist would be a more conservative approach to the removal of normal ovaries from the premenopausal female,"^[7] remains largely true today.

The 2002 termination of the Women's Health Initiative (WHI) estrogen-progestin arm was a pivotal moment. Amid public confusion, I convened experts through NAMS to publish the first evidence-based position statements on menopausal hormone therapy. These emphasized transparency, conflict-of-interest disclosure, and independence from industry influence – principles that remain vital today. Persistent impediments include misinterpretation of the WHI findings, limited funding for fundamental research, the erosion of public trust, algorithmic rather than individualized care, and pseudo-scientific noise from media voices lacking accountability. Above all, medicine must measure value not merely by risk-benefit ratios but by improvements in *women's quality of life*.

The *IMS CPG 2026* exemplifies these ideals, scientifically grounded, culturally contextual, and ethically transparent. May it empower clinicians to deliver informed, compassionate, and personalized menopause care. For, as Edward Gibbon said, “I have but one lamp by which my feet are guided, and that is the lamp of experience.” That lamp continues to light the path forward toward informed, compassionate, and individualized care for every woman at midlife and beyond.

Wulf Utian^{1,2}

¹Department of Reproductive Endocrinology, Case Western Reserve University,

²Cleveland Clinic, Cleveland, OH, USA

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Message From The President Elect- The International Menopause Society 2026

The 2026 Clinical Practice Guidelines on Menopause of the Indian Menopause society provide a holistic guidance for the physicians in the care of midlife women. The comprehensive guidance from diagnosis to management will improve the care for the midlife women and optimise their health for better quality of life in their latter years. Congratulations to the Indian Menopause Society for a very impactful Clinical Practice Guidelines on Menopause!

With best wishes,

Ang Seng Bin

President-Elect of International Menopause Society 2026

Chair of the APMF Consensus

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Message

डॉ. अभिजात शेठ
अध्यक्ष

Dr. Abhijat Sheth
Chairman



राष्ट्रीय आयुर्विज्ञान आयोग
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भारत सरकार

National Medical Commission
Ministry of Health & Family Welfare
Government of India

MESSAGE

I extend my warm greetings and best wishes to the Indian Menopause Society for its continued academic leadership in women's health. The *IMS Clinical Practice Guidelines on Menopause 2026* and the *Executive Summary Supplement of the Journal of Mid-Life Health* mark an important milestone in promoting evidence-based, holistic, and culturally relevant care. By focusing on the health of women aged 35 years and above, these guidelines will help clinicians identify risks early, promote healthy ageing, and enhance quality of life across midlife and beyond. The National Medical Commission appreciates this significant contribution to strengthening women's health education and clinical standards in India.

Warm regards,

A handwritten signature in blue ink that reads 'Abhijat C. Sheth'.

(Dr. Abhijat Sheth)



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ALL INDIA INSTITUTE OF MEDICAL SCIENCES
ANSARI NAGAR, NEW DELHI - 110029, (INDIA)

Ph. 011-26594805/4800, Email: director@aiims.gov.in

11th August 2025

दिनांक/Dated :

MESSAGE

It gives me immense pleasure to extend my warm congratulations to the Indian Menopause Society on the release of the Clinical Practice Guidelines on Menopause.

Menopause represents a significant phase in a woman's life, bringing with it a spectrum of physiological, psychological, and emotional changes. As healthcare providers, it is imperative that we remain updated and aligned with evidence- based practices to offer optimal care to women navigating this transition. These guidelines are a timely and comprehensive resource, reflecting the latest scientific advances and the unique sociocultural context of Indian women.

I commend the Indian Menopause Society for their dedication and scholarly rigour in bringing together a multidisciplinary perspective in these guidelines. This initiative will undoubtedly serve as an invaluable tool for clinicians, academicians, and policymakers alike.

Let us work together to ensure that every woman in India receives respectful, informed, and compassionate care during her menopausal journey.

With best wishes,

(Prof. M. Srinivas)

Director

Ph. 011-26594805/4800

director@aiims.gov.in

दूरभाष : २६५८८५००, २६५८८७०० Telephones : 26588500, 26588700 फ़ैक्स : २६५८८६४९, २६५८८६६३ Fax : 26588641, 26588663

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