abstract

Women in the Western world may expect to spend a significant portion of their lives in postmenopause. After menopause, women are at increasing risk for several conditions associated with aging that may or may not be related to declining hormone levels. Caring for women seeking advice and treatment for menopausal concerns presents a golden opportunity to not only identify individuals at risk for early intervention but also to address prevention and screening strategies important to sustaining health.

Key words: *cancer, cardiovascular disease, menopause, osteoporosis, screening*

Care of the Menopausal Woman: Beyond Symptom Relief

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Introduction

Risk and prevalence of chronic diseases such as cardiovascular disease, osteoporosis, and cancer increase with age. These diseases negatively impact quality of life and represent a significant financial burden for an aging population. Women presenting for advice about menopausal concerns represent a golden opportunity to identify and treat the risks for these conditions. This review will highlight optimal screening and prevention strategies for care of the postmenopausal woman, regardless of whether or not she is taking hormone therapy to relieve symptoms.

Health concerns associated with menopause are illustrated in Figure 1.

Cardiovascular Disease

Cardiovascular disease (CVD) is the single most common cause of death among women in the developed world. While cardiovascular mortality for men has decreased over the past three decades, no such decrease is observed for women.[1] In part, this is because women's risk for CVD has been historically under-recognized, underdiagnosed, and undertreated. This need for more widespread implementation of screening, assessment, and individual management of CVD risk in women led to the publication in 2004 of the American Heart Association's (AHA) Evidence-Based Guidelines for CVD Prevention in Women,[2] which offers health care providers a clear road map for CVD prevention.

A global CVD risk assessment defined by the Framingham 10-year Coronary Heart Disease (CHD) risk score[3] is a useful tool to plan interventions and individualize treatment. Available as both a web-based (hin.nhlbi.nih.gov/atpiii/calculator.asp) and a pen and paper calculator, points are accumulated for risk factors that include age, gender, total and HDL-cholesterol (HDL-C), blood pressure, and smoking status. High risk is defined as a greater than 20% 10-year CHD risk and is represented by women with established CVD as well as those with CHD equivalents such as diabetes and chronic renal disease. Intermediate-risk women have a 10–20% 10-year CHD risk and lower risk individuals less than a 10% 10-year CHD risk. "Optimal" is defined as optimal levels of all risk factors (nonsmoker, LDL cholesterol <2.6 mmol/L, and blood pressure <120/80 mmHg) and adherence to a heart-healthy lifestyle (Table 1).

With menopause, the decline in endogenous estrogen has a number of adverse effects on cardiac risk factors, including increased LDL cholesterol (LDL-C), lipoprotein a (Lp[a]), homocysteine, and decreased levels of HDL-C.[4]

Therefore, measurements of blood pressure and lipids are important at menopause to assess the need for interventions or pharmacologic therapy. Although hormone treatment for symptoms of menopause favourably alters the plasma lipid profile,[5,6] the issue of whether or not estrogen treatment provides primary prevention for cardiovascular disease remains controversial.[7,8] Results of a new trial (Kronos Early Estrogen Prevention Study)[9] should provide the evidence to support or refute this hypothesis. Current recommendations advise not to initiate hormone treatment for prevention of cardiovascular disease.

Women at high risk for CVD should receive ASA, beta-blockers, and an angiotensin-converting enzyme inhibitor or angiotensin receptor blocker unless there are contraindications. They should also have their blood pressure, lipids, and diabetes optimally managed.[2]

Regardless of risk level, lifestyle interventions—including smoking cessation, healthy diet for weight maintenance, and regular physical activity—should be recommended to all women (Table 1).

Osteoporosis

Osteoporosis, a condition of low bone mass and increased bone fragility, accounts for a 50% lifetime risk of fractures in women over age 50.[10] The mortality rate in the first year after hip fracture is nearly 25%.[10] For those who survive beyond a year, 40% of women remain unable to walk independently and 60% are unable to perform simple activities of daily living.[11,12] Prevention strategies can reduce the morbidity and mortality associated with this devastating disease.

Bone remodelling occurs throughout life, but at menopause it becomes unbalanced, with bone resorption exceeding new bone formation. Following menopause or the discontinuation of hormone therapy, bone loss in the spine and hip occurs rapidly over a period of five to seven years before the rate of loss slows and continues through the rest of life. To minimize this bone loss, all women should be counselled about preventive strategies and at-risk menopausal women should be offered screening for osteoporosis.

Measuring bone mineral density (BMD) establishes the diagnosis of osteoporosis or osteopenia (Table 2), determines fracture risk, identifies those who can benefit from interventions, and monitors response to treatment. The National Osteoporosis Foundation suggests that BMD be offered to younger postmenopausal women with one or more risk factors (Table 3)[10] (other than being white, postmenopausal, and female), to women aged 65 and older (regardless of risk factors), and to postmenopausal women presenting with fracture.[10] Women discontinuing estrogen therapy should also be considered for BMD testing, since their fracture risk declines to that of nonusers within one year.[13,14]

If osteopenia is identified, the decision about whether to recommend a medication or which medication to prescribe needs to be individualized for each woman. Because of the controversy surrounding long-term use of estrogen, bisphosphonates (e.g., alendronate or risedronate) have become the drugs of choice when medication is needed to prevent or treat osteoporosis. Another option is raloxifene, a selective estrogen receptor modulator that has agonistic effects on bone and lipids but antagonistic effects on breast tissue and is approved for prevention or treatment of osteoporosis.[13,14]

Prevention strategies for osteoporosis include optimizing overall nutrition, consuming 1,200–1,500 mg elemental calcium and 400–800 IU vitamin D daily, as well as getting regular weight-bearing exercise[13] (Table 1). Additional strategies to reduce falls and osteoporotic fractures should include correcting vision and hearing problems, providing gait aids, reviewing prescription medications for side effects that may affect balance, and promoting safety in the home.

Table 1: Lifestyle Recommendations for Menopausal Women

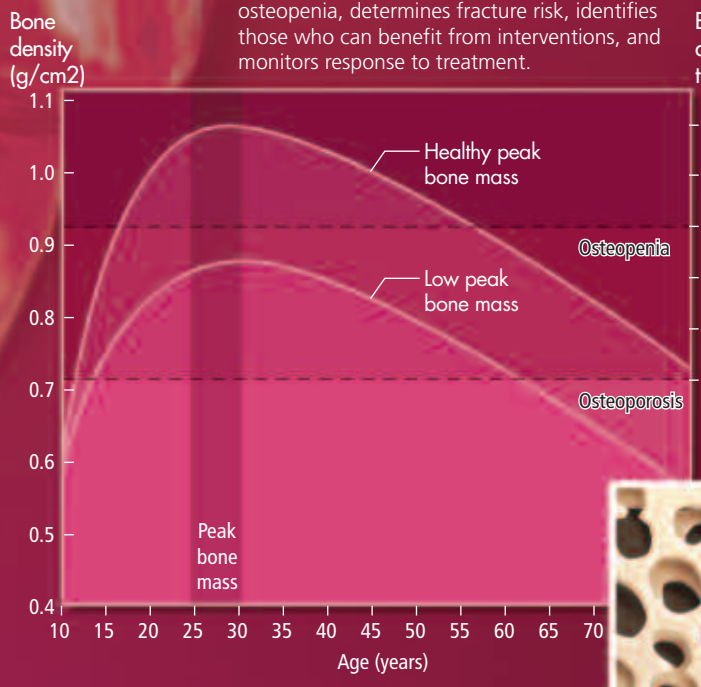
Behaviour	Recommendation
Tobacco Use	Do not smoke and avoid environmental tobacco exposure.
Diet	Eat a variety of fruits, vegetables, whole grains, low-fat or nonfat dairy products, fish, legumes, and sources of protein low in saturated fat (e.g., poultry, lean meats, and plant sources). Limit intake of saturated fat, cholesterol, and trans fatty acids. Adjust caloric intake to achieve/maintain a healthy weight. Consume 1200–1500 mg of elemental calcium and 400–800 international units (IU) of vitamin D daily.
Physical Activity	Perform 30 minutes of moderate-intensity physical activity, most, preferably all, days of the week. Weight-bearing activity is preferred for women at risk for osteoporosis Strength-training, with free weights, resistance bands, or weight machines, provides additional benefits for muscle mass, strength, and balance.
Alcohol Consumption	Limit alcohol to no more than one serving /day (i.e., one oz. of hard liquor, 5 oz. wine, or 12 oz. beer).

Cancer in Postmenopausal Women

Cancer is the second leading cause of death, after CVD, in North American women. Screening and early detection strategies can reduce the burden of several cancers. Additionally, counselling women to make healthy lifestyle choices

Figure 1:
Risk Factors Associated with Menopause

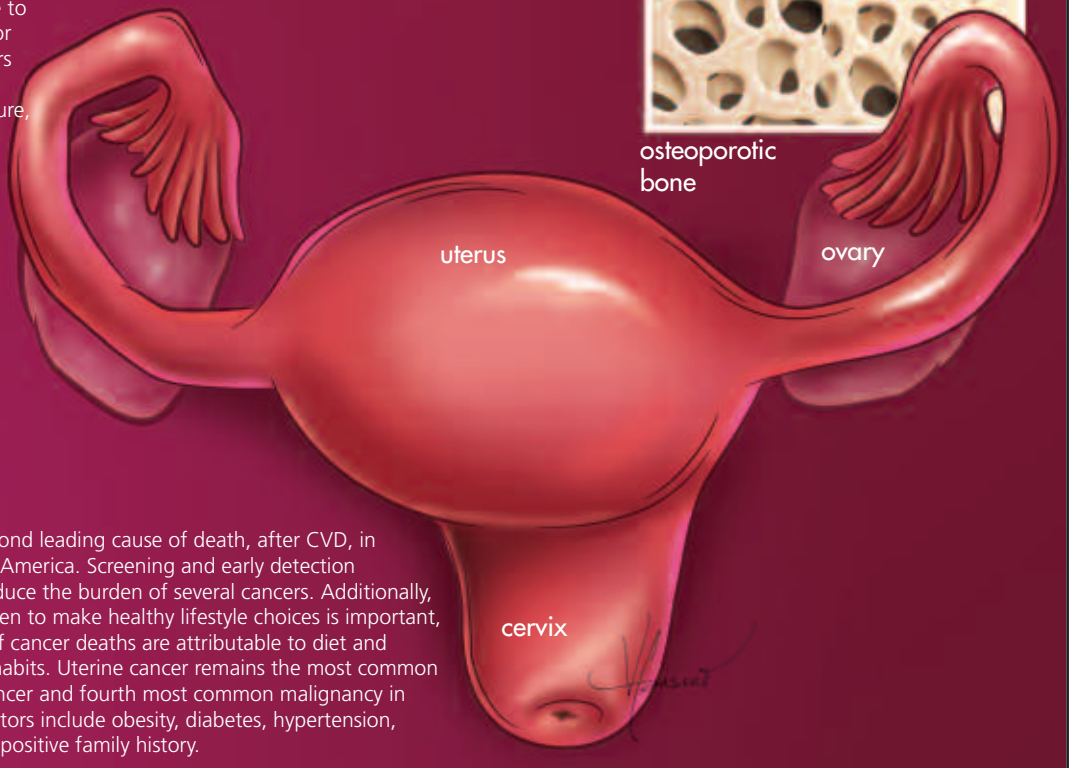
osteoporosis
Bone remodelling occurs throughout life, but at menopause it becomes unbalanced, with bone resorption exceeding new bone formation. Following menopause or the discontinuation of hormone therapy, bone loss in the spine and hip occurs rapidly over a period of five to seven years before the rate of loss slows and continues through the rest of life. Measuring bone mineral density (BMD) establishes the diagnosis of osteoporosis or osteopenia, determines fracture risk, identifies those who can benefit from interventions, and monitors response to treatment.



cardiovascular
With menopause, the decline in endogenous estrogen has numerous adverse effects on cardiac risk factors, including increased LDL cholesterol, lipoprotein a, and decreased levels of HDL-C. Therefore, measurements of blood pressure and lipids are important at menopause to assess the need for interventions or pharmacologic therapy. Risk factors for CVD include age, gender, total and HDL- cholesterol, blood pressure, and smoking status.

osteoporotic bone

increased LDL-C in the circulation



cancer
Cancer is the second leading cause of death, after CVD, in women in North America. Screening and early detection strategies can reduce the burden of several cancers. Additionally, counselling women to make healthy lifestyle choices is important, since one-third of cancer deaths are attributable to diet and physical activity habits. Uterine cancer remains the most common gynecological cancer and fourth most common malignancy in women. Risk factors include obesity, diabetes, hypertension, nulliparity, and a positive family history.

Table 2: Bone Mineral Density Measurement for the Diagnosis of Osteoporosis or Osteopenia

Normal:	a T-score greater than or equal to -1
Osteopenia:	a T-score between -1 and -2.5
Osteoporosis:	a T-score less than or equal to -2.5

T-score is defined as the standard deviation below the mean bone mineral density for sex matched control subjects (usually 35 years of age).

Table 3: Selected Risk Factors for Osteoporosis

Genetic
Female sex
Caucasian or South East Asian race
Slender physical frame (BMI less than 20 kg/m2)
Family history of osteoporosis
Lifestyle
Sedentary lifestyle/prolonged immobilization
Low lifetime calcium intake
Little exposure to sunlight and no vitamin D supplementation
Cigarette smoking
Excess alcohol intake (greater than two servings daily)
Gynecologic
Nulliparity
Early menopause
Medical
History of fracture after age 50
Use of oral corticosteroids for more than three months
Hyperthyroidism
Hyperparathyroidism
Hormonal treatment for breast cancer—aromatase inhibitors; premenopausal use of tamoxifen

Source: National Osteoporosis Foundation, 2006,[10] Barrett–Lonnor et al., 2003.[13]

is important, since one-third of cancer deaths are attributable to diet and physical activity habits and another third to cigarette smoking.[15]

The most frequent malignancy in women is skin cancer. Physicians should encourage women to examine their skin regularly and report new lesions or changes in an existing skin lesion's shape, size, colour, or border. To reduce risk for skin cancer, postmenopausal women should be advised to avoid intense sun exposure, use sunscreen with a sun protection factor of at least 15, and cover exposed skin with clothing or a protective hat.

Lung cancer has surpassed all others as the number one cancer killer of women, largely due to the increase in smoking among women over the past three decades. Smoking cessation is critical to reduce risk for lung cancer as well as CVD. At each clinical visit, smoking status should be ascertained. Current smokers should be assessed for their readiness to quit and provided resources (e.g., counselling and nicotine replacement aids) to improve their chance of success. Past smokers should be congratulated and encouraged to maintain their abstinence.

Screening for breast cancer, the most common cancer in women, may result in earlier detection and improved survival. All major U.S. medical organizations recommend screening mammography for women aged 40 and older.[16] Breast self-examination has not been found effective in reducing breast cancer mortality, but women can potentially identify changes leading to earlier detection of breast cancer. Potential strategies for reducing the risk of breast cancer include lifestyle changes such as reducing saturated fat intake, increasing exercise, losing weight if obese or overweight, and reducing alcohol intake.[17] For women at markedly increased risk for breast cancer, chemoprevention strategies include tamoxifen and possibly raloxifene (undergoing study); surgical interventions such as bilateral mastectomy[18] or oophorectomy are sometimes considered.[17]

Colorectal cancer is the third most common cancer affecting women, with 90% of cases occurring after age 50. Most colorectal cancers arise from adenomatous polyps, and progress from small to large polyps, then to dysplasia and cancer. Women age 50 and beyond who are at average risk should be advised to undergo screening with fecal occult blood testing and sigmoidoscopy every five years, double contrast barium enema every five years, or colonoscopy every 10 years.[19] The choice of test or screening strategy may depend on cost, availability of testing in a particular medical community, patient preference, and an assessment of individual cancer risks.

Uterine cancer remains the most common gynecological cancer and fourth most common malignancy in women. Risk factors include obesity, diabetes, hypertension, nulliparity, and a positive family history. Evaluation of postmenopausal spotting or bleeding with office endometrial biopsy or pathology obtained during dilation and curettage (D&C) can lead to early diagnosis and cure in many women.[20]

Cervical cancer is curable if diagnosed early. This cancer is caused by the human papillomavirus (HPV); therefore, with development of vaccines against HPV, this cancer may be preventable in the future. As one-fourth of cervical cancers occur in women who are 65 years of age or older, the American College of Obstetrics and Gynecology recommends serial cervical cytology surveillance every one to three years, depending on a woman's age, medical history, and past results.[21] Combined cervical cytology and HPV testing by rapid hybridization assay may be used every three years as an alternative. The decision to continue

Key Points

- Women presenting for advice about menopausal concerns represent a golden opportunity to identify and treat the risks for conditions that become increasingly prevalent with age such as cardiovascular disease, osteoporosis, and cancer.
- Women's risk for cardiovascular disease (CVD) has been historically under-recognized, underdiagnosed, and undertreated.
- Osteoporosis is a critical issue for postmenopausal women: at menopause bone remodelling becomes unbalanced, with bone resorption exceeding new bone formation.
- All women should be counselled about preventive strategies for osteoporosis, and at-risk menopausal women should be offered screening.
- Cancer is the second leading cause of death, after CVD, among North American women.
- Cancers commonly identified at this time of life are (in order of prevalence) skin, lung, and colorectal cancers.

cervical cancer screening after age 70 needs to be individualized.

Ovarian cancer, the seventh most common cancer in women, is the most fatal of the gynecological malignancies, partly because it is often detected only at an advanced stage. Although the lifetime probability of developing ovarian cancer is low (1.8% in the general population), incidence increases with age. No screening or prevention strategies are proven to be helpful for reducing this cancer.

Conclusion

As the population has aged, women have come to spend increasing amounts of their lives in postmenopause. Prevention and screening strategies are known to reduce risk of CVD, osteoporosis, and some cancers common to this time of life. While the mantra of "Quit smoking and avoid second-hand smoke; eat a variety of healthful foods, with an emphasis on plant sources; adopt a physically active lifestyle; maintain a healthy weight throughout life; and limit excess alcohol consumption" has proven benefits, it can be a challenge for women to adopt, particularly as they age. Informing postmenopausal women about their most important health threats and providing them with prevention and screening strategies is an important part of their care.

Drs. Shuster, Hayes, and Marnach have no competing financial interests. Dr. Miller is the prinicipal investigator for the Mayo Clinic site for the KEEPS trial which is funded by the Kronos Longevity Research Institute, a not-for-profit entity.

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