

# THE MENOPAUSE HANDBOOK

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A Companion Guide to the Society of Obstetricians and  
Gynaecologists of Canada Menopause Consensus Report

FEBRUARY 2006





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The Society of Obstetricians and Gynaecologists of Canada  
780 Echo Drive, Ottawa, ON K1S 5R7  
Tel: 613-730-4192/1-800-561-2416  
Fax: 613-730-4314  
[www.sogc.org](http://www.sogc.org)

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## About the SOGC

Established in 1944, The Society of Obstetricians and Gynaecologists of Canada (SOGC) is one of North America’s oldest national organizations devoted to the speciality of obstetrics and gynaecology.

The mission of the SOGC is to promote optimal women’s health through leadership, collaboration, education, research and advocacy in the practice of obstetrics and gynaecology.

The Society welcomes all specialists in obstetrics and gynaecology, general practitioners, researchers, nurses, midwives and other healthcare providers in Canada and internationally. English and French are the official languages of the SOGC.

The SOGC’s first mission statement in 1944 read, “The promotion, cultivation and encouragement of the Art and Science of Obstetrics and Gynaecology in Canada.”

## 2006 Menopause Consensus Report

The Society of Obstetricians and Gynaecologists of Canada (SOGC) published the first Menopause Consensus Report in 1994, and has published two updates since then, most recently in 2002.

An expert consensus panel, composed of endocrinologists, gynaecologists, public health and family physicians, a cardiologist and a psychiatrist, reviewed all pertinent evidence published in peer-reviewed journals since the last consensus update in 2002. The publications were rated according to the level of evidence, and the panel reached its conclusions through face-to-face meetings, exchange of information via e-mail and teleconferences.

### Gynaecology with an ‘a’, eh?

The spelling of both Gynecology and Gynaecology is correct. In Canada, it is often spelled gynaecology, after the traditional spelling which used the diphthong æ.

The objective of the panel was to provide guidelines for healthcare providers about the management of natural menopause in symptomatic healthy women as well as in women presenting with vasomotor symptoms, urogenital, sexual, and mood and memory concerns and on specific medical considerations, as well as cardiovascular and cancer issues. All other forms of premature ovarian failure represent special considerations outside the scope of this document.

Following is a list of the Menopause Consensus Report panel members:

### Conference Chairs

- Serge Bélisle, MD, MSc, FRCSC, Montreal QC
- Jennifer Blake, MD, MSc, FRCSC, Toronto ON

### Menopause Guidelines Committee

- Rosemary Basson, MD, MRCP, FRCP (UK), Vancouver BC
- Sophie Desindes, MD, FRCSC, Sherbrooke QC
- Gillian Graves, MD, FRCSC, Halifax NS
- Sophie Grigoriadis, PhD, MD, FRCPC, Toronto ON
- Shawna Johnston, MD, FRCSC, Kingston ON
- André Lalonde, MD, FRCSC, Ottawa ON
- Christina Mills, MD, Ottawa ON
- Lynn Nash, MD, CCFP, FCFP, Ancaster ON
- Robert Reid, MD, FRCSC, Kingston ON
- Timothy Rowe, MD, FRCSC, Vancouver BC
- Vyta Senikas, MD, FRCSC, Ottawa ON
- Michele Turek, MD, FRCPC, Ottawa ON



### Defining & Understanding Menopause

Natural menopause is quite specifically defined and is confirmed when a woman has not had a menstrual period for a 12-month period.<sup>1</sup> Although menopause itself is defined by this specific timing, many people think of menopause as a longer period of transition.

**“Menopause is a point in time. The phrases ‘in menopause’ and ‘going through menopause’ are misnomers, sometimes used to describe perimenopause or the menopause transition. It is appropriate to say that one ‘reaches’ menopause.”<sup>2</sup>**

*~ The North American Menopause Society*

- **Perimenopause** – leading up to menopause, the body begins to produce smaller amounts of female hormones (estrogen and progesterone). Changing hormone levels from month to month can mean the ovaries may release an egg some months, but not others; periods may become lighter or heavier, or farther apart or closer together or may even be missed on occasion. The average age of perimenopause is 45.1 years – but it can start anytime between ages 39 and 51, and can last between two and eight years (the average being five).
- **Menopause** – is “reached” when a woman, due to declining ovarian activity, has her last menstrual period. In the case of natural menopause it is known only in retrospect, and is confirmed after 12 months have passed without a period. Surgical menopause, or menopause induced by chemotherapy or radiation is the last menstrual period before the surgery, or event that led to the loss of ovarian function. Menopause is the loss of ovarian function, not the absence of periods. A woman who has no periods because of, for example a hysterectomy, is not menopausal so long as she continues to have ovarian activity.
- **Postmenopause** – is the time that begins when a woman has reached menopause. When a woman is postmenopausal, she has some additional long-term age-related health considerations such as the development of osteoporosis and cardiovascular disease.<sup>3</sup> As a woman reaches the menopause stages of life, it is a good opportunity to assess overall health and lifestyle choices to address potential long-term health issues.

**There are currently approximately four million Canadian women who are now or have in the past reached menopause.<sup>4</sup> It is a natural stage of life, and will affect every woman differently – from the age of onset to the intensity of symptoms.**

The issue of menopause and postmenopausal health in women is of significance to society in general because of the universality of menopause – it affects all women – and because of the unprecedented increase in the number of postmenopausal women in Canada.<sup>5</sup> As well, rising life expectancy means that not only are there increasing numbers of postmenopausal women, but an increasing proportion of them are in the late postmenopausal years.

- In the 2005 Canadian census, the total number of women over the age of 50 was 5.5 million.<sup>6</sup>
- It is estimated that by 2026, women in this age group will comprise 22 per cent of the Canadian population.<sup>7</sup>
- The average age of menopause in Canada is 51 and it is estimated that a large portion of the population will reach this age in the coming decade.<sup>8</sup>



## Pillar 1: Lifestyle and Wellness

Sound evidence increasingly demonstrates the benefits of healthy lifestyle, diet and exercise in reducing the risk of serious illness, including heart disease<sup>9</sup> and cancer.<sup>10</sup> Several lines of evidence also point to the importance of early childhood health in determining the risk of adult disease.<sup>11,12</sup> More women reaching menopause today have had the advantage of growing up with access to better nutrition, preventive healthcare and information about healthy living. During the past 25 years, the prevalence of heart disease, for example, has progressively fallen.<sup>13</sup>

Many women today reach menopause in unprecedented states of health. Yet at the same time, levels of obesity are rising and physical inactivity is an ongoing concern. In an increasingly diverse society, the challenge is to find answers that are applicable to various populations of women.

### Lifestyle Considerations

Everyone, male and female, should live in a healthy way to protect themselves from disease and enhance quality of life. Proper diet and exercise can have a positive impact on a person's physical and emotional health at any age. For some women reaching menopause, a healthy lifestyle can reduce the severity of symptoms and make the transition easier.

#### Diet

Canada's Food Guide<sup>14</sup> recommends a diet rich in plant-based foods, low in saturated fat and trans-fatty acids, high in dietary fibre, and accompanied by six to eight glasses of water per day. This diet provides adequate nutrients and vitamins for most women through the stages of menopause. It may also be necessary to consider taking supplements to obtain optimal amounts of calcium, vitamin D and folate.

#### Exercise

Regular physical exercise can keep bones and muscles strong, and improve balance, flexibility and agility. Exercise also helps the heart, slows bone loss, enhances self-esteem, reduces stress and plays an important role in maintaining a healthy weight. An optimal activity plan will combine weight-bearing and aerobic activities, with strength or resistance training, and stretching or yoga for flexibility.

In the SOGC's booklet, *Osteoporosis, Let's Talk About It*, the following recommendation can be found:

**Daily physical activity is an important part of a bone-healthy lifestyle. Brisk walking, low impact aerobics and dancing are examples of 'weight bearing' activities that help keep your bones strong. Also effective are 'resistance' exercises such as weight training. With both types of activities, your skeletal system responds to exercise by increasing the bone mass in order to spread the load over a larger amount of bone. At the very least, it appears that exercise slows bone loss.<sup>15</sup>**

#### Weight Gain

As women experience perimenopause, weight gain is common, but not inevitable. This is a result of a natural reduction in the metabolic rate, and in most cases can be minimized or controlled by following a low-fat diet combined with a moderate exercise plan.

#### Stress

Stress can affect quality of life at any age, and for many women, seems to increase during the menopause transition. Stress may result in a variety of physical symptoms, and may aggravate various underlying medical conditions, including cardiovascular disease. Stress reduction strategies that may benefit all individuals include regular exercise, yoga, tai chi, massage, meditation, paced respiration, relaxation techniques, biofeedback and behaviour-modification techniques. Some of these techniques have also been helpful in relieving vasomotor symptoms.



### *Smoking*

In addition to the well-known health risks, quality of life may also be affected in menopausal women who smoke. Higher doses of estrogen may be required to control vasomotor symptoms, and although contraceptive pills are commonly prescribed to control irregular bleeding and vasomotor symptoms during perimenopause, they should not be used by women who smoke, or who use nicotine patches or gum.<sup>16</sup>

### *Alcohol*

Alcohol aggravates menopausal symptoms such as hot flashes, insomnia and depression, and may contribute to weight gain by adding empty calories to the diet. Excess alcohol consumption is often associated with an increased risk of osteoporosis due to calcium and other nutritional deficiencies, and with an increased incidence of falls and fractures due to imbalance. Light to moderate alcohol consumption (1-2 drinks/day) can decrease the risk of heart disease, but may also increase the risk of breast cancer.<sup>17</sup>

### *Caffeine*

Caffeine ingestion may aggravate menopausal symptoms such as hot flashes and insomnia. It is prudent to limit the intake of foods and beverages containing caffeine, and to add low-fat milk to coffee and tea as a means of increasing calcium intake.

### **The 2006 Menopause Consensus Report provides the following recommendations regarding wellness and lifestyle:**

1. Healthcare providers should discuss and encourage initiation of healthy lifestyle choices in menopausal women.
2. Lifestyle modifications, including reducing core body temperature, regular exercise, weight management, smoking cessation, and controlled breathing may be recommended to reduce mild vasomotor symptoms.



## Pillar 2: Symptomatic Treatment

### The Symptoms of Menopause

As a woman approaches menopause, she may begin to experience a variety of symptoms. While 75 per cent<sup>18</sup> of women will experience hot flashes, not all women will experience all the symptoms of menopause, nor will they be felt to the same degree. Some women will have virtually no symptoms at all, while others will feel a significant impact on their quality of life.<sup>19</sup>

- **Hot flashes** – Temperature regulation is affected by menopause: postmenopausal women have a much smaller ‘thermo-neutral zone,’ a temperature range in which they feel comfortable. Estrogen affects the size of the ‘zone’ and influences the amount of blood that flows to the brain, allowing the body to control temperature. Changing estrogen levels associated with perimenopause and menopause can lead to ‘hot flashes’ and sweating. Hot flashes that happen during sleep are called ‘night sweats.’
- **Mood and memory** – Women may experience mood swings, irritability, anxiety and occasional difficulties with memory or concentration. Some women suffer from low self-esteem and depression during the stages of menopause, especially those who see it as a sign of aging.
- **Bladder control** – Lower estrogen levels may lead to thinning of the tissues lining the bladder and urinary tract, resulting in decreased bladder control or the leakage of a small amount of urine (for example, when a woman laughs or sneezes), and increased susceptibility to recurrent urinary tract infections.
- **Appearance** – Because estrogen helps maintain the collagen supporting structure of skin, lower estrogen levels can cause increased wrinkling.
- **Sexual changes** – Low levels of estrogen can cause decreased lubrication and vaginal dryness, which can result in painful intercourse. Lower hormone levels can also affect the sensitivity of, and the blood flow to, the sexual organs.
- **Sleep disturbance** – Up to 38 per cent of women may report some form of sleep disturbance, including sleep latency, night-time waking and sleep apnea. This may be a more prevalent symptom in perimenopausal women and those experiencing surgical menopause.<sup>20</sup>
- **Other symptoms of menopause** – Some women may also experience fatigue or joint pain.

**Three out of four women experiencing the menopause transition have hot flashes. Without treatment, up to half of these women will have hot flashes for five years or more. Some women can even have hot flashes up to the age of 70.**

A thorough consultation with a physician is imperative to properly diagnose perimenopause and menopause, since other conditions, such as thyroid dysfunction, poor glucose control or lifestyle factors can cause similar symptoms.

Clinically speaking, the symptoms caused by the decrease of hormones in a woman’s body starting during perimenopause fall into two categories: *vasomotor* and *urogenital*. Vasomotor symptoms are usually most troublesome in the perimenopause and early postmenopausal years, but generally improve over a period of two to five years; although for some women, symptoms can persist for years or even decades.

In contrast to vasomotor symptoms that appear early and tend to dissipate with time, urogenital symptoms tend to develop progressively in the years or decades following menopause. Urogenital complaints may affect 30 to 50 per cent of women and may be a source of considerable daily discomfort.<sup>21</sup> Vaginal dryness during sexual arousal is often the first symptom noticed.



## Pillar 2: Symptomatic Treatment

### Vasomotor and Urogenital Symptoms <sup>22</sup>

Vasomotor Symptoms	
<p><b>Primary</b></p> <ul style="list-style-type: none"><li>• Hot flashes</li><li>• Night sweats</li><li>• Sleep disturbances</li><li>• Nausea</li><li>• Dizziness</li><li>• Palpitations</li><li>• Anxiety attacks</li></ul> <p><b>Secondary</b></p> <ul style="list-style-type: none"><li>• Fatigue</li><li>• Irritability</li><li>• Changes in mood, concentration and memory</li></ul>	<p>Appear during perimenopause and tend to dissipate with time</p>
Urogenital and Sexual Symptoms	
<ul style="list-style-type: none"><li>• Vaginal dryness, discharge, bleeding</li><li>• Recurrent urinary infections, urge and stress incontinence</li><li>• Decreased or loss of libido</li></ul>	<p>Develop progressively in the years or decades following menopause</p>

Hormone therapy (HT) remains the most effective option for disruptive symptoms. While it may take up to four weeks of treatment to notice a response, 77 per cent of women see a reduction in hot flashes and 78 per cent experience sleep improvement.<sup>23</sup> Both oral and transdermal routes of administration are effective for symptomatic relief.<sup>24</sup>



## Pillar 2: Symptomatic Treatment

### The 2006 Menopause Consensus Report provides the following recommendations regarding Symptomatic Treatment:

1. Healthcare providers should offer hormone therapy (ET/estrogen-progestin therapy) as the most effective therapy for the medical management of menopausal symptoms.
2. The primary indication for hormone therapy (HT) should be for the management of moderate to severe menopausal symptoms.
3. HT should be prescribed at the lowest effective dose, although the long-term risk/benefit ratio of lower dose HT has not been demonstrated.
4. HT should be prescribed for the appropriate duration to achieve treatment goals while taking into consideration risks and benefits and the woman's quality of life.
5. HT may be prescribed for an extended period, following proper counselling, if the woman decides that for her the benefits outweigh the risks. Periodic re-evaluation is strongly recommended.
6. Progestins alone or low-dose oral contraceptives can be offered as alternatives for the relief of menopausal symptoms especially during the transition phase.
7. Non-hormonal prescription therapies, including antidepressant agents, gabapentine, clonidine and bellergal, can be prescribed as alternatives to HT to reduce vasomotor symptoms.
8. Healthcare providers may offer identified complementary and alternative medicine with demonstrated efficacy for mild menopausal symptoms.
9. Complementary and alternative medicine, including black cohosh, red clover-derived isoflavone and vitamin E, may be recommended for the reduction of mild vasomotor symptoms. Long-term efficacy and safety data are still lacking.

See Pillar 3 (next section) for more information and recommendations regarding Urogenital/Sexual Health.



### Vaginal Atrophy

Vulvovaginal atrophy, also known as vaginal atrophy, is a common urogenital complaint among women in their postmenopausal years. Up to 50 per cent of postmenopausal women experience vaginal dryness, soreness and painful sex.<sup>25</sup> Without the production of estrogen, the skin and support tissues of the vulva (“lips”) and vagina become thin and less elastic. This is an inevitable consequence of menopause and the majority of women will experience some form of symptoms.

Vaginal dryness is commonly the first reported symptom of vaginal atrophy. This is due to a reduction in the production of mucus by the glands of the vagina. Thinning of the vaginal and vulval skin can follow, which in turn makes them more easily damaged. This damage can be exacerbated during sex. Even quite gentle friction, such as the thin and dry vulval lips rubbing on underwear, can cause soreness. Many women also dislike the outward changes in the appearance of the vulva as they lose their plumpness.

If vaginal atrophy is left untreated, it can result in worsening symptoms such as: higher risk of recurrent urinary tract infections; higher risk of vaginal infections and bleeding; loss of interest in sexual activity; and, loss of control of urination (incontinence).<sup>26</sup>

A change in the normal vaginal discharge is something noticed by most women after menopause. Without estrogen, the pH (acidity) of the vaginal secretions change and the normal discharge becomes more alkaline. This pH affects the balance of the micro-organisms in the natural secretions, which in turn suppresses the normal levels of “good” bacteria. The discharge becomes watery, discoloured and has a slight odour. This often leads to vaginal burning and vulval irritation.

Some women seek advice from their doctor for these symptoms of vaginal atrophy, but many just worry alone, and don’t ask for help. It is not unusual for many women to avoid sex as it becomes more painful. Because of this, relationships can suffer.

The SOGC Clinical Practice Guidelines (2004) recommend that healthcare providers routinely assess postmenopausal women for the symptoms and signs of vaginal atrophy, a common condition that exerts significant negative effects on quality of life.<sup>27</sup>



## Pillar 3: Urogenital/Sexual Health

### *Management of Vaginal Atrophy*

Some options that may help include:

- Avoidance of soap (replace with a water-based cream, available from most pharmacies).
- Treatment of underlying skin problems with topical cream, after guidance by a physician.
- Treatment of altered vaginal flora with appropriate antibiotics, after an examination (this is short-term and may be administered orally or sometimes directly into the vagina; this treatment may need to be repeated).
- Local estrogen therapy, delivered in the vagina by a cream, tablet or ring.

Vaginal dryness, soreness, burning, vulval irritation and chafing all respond well to local estrogen treatments. This can also greatly help with discomfort, and pain during sex, correcting the vaginal pH and stopping the overgrowth of abnormal vaginal flora. Local low dose treatment with estrogen has been found to have significant effect on the postmenopausal urogenital symptoms related to atrophy.<sup>28</sup>

### *Sexual Health*

Many women report a decrease in sexual feelings or activity during the perimenopause and postmenopausal years. For some, this is a source of distress and concern, while others report no dissatisfaction with their sexual relationships. Researchers on female sexuality have found it to be complex, with multiple biological, social and behavioural factors interacting. Testosterone levels do not correlate with sexual function. A growing literature suggests that women who have had surgical menopause may benefit from testosterone replacement. For women who have gone through a spontaneous menopause, the role of testosterone is not clear, and there are no large-scale studies addressing this question. Currently there are no testosterone therapies approved by Health Canada for Canadian women.

### **The 2006 Menopause Consensus Report provides the following recommendations related to Urogenital and Sexual Health:**

#### *Urogenital Concerns:*

1. Conjugated estrogen (CE) cream, an intravaginal sustained-release estradiol ring or estradiol vaginal tablets are recommended as effective treatment for vulvovaginal atrophy.
2. Routine progestin co-therapy is not required for endometrial protection in women receiving vaginal estrogen therapy in appropriate dose.
3. Vaginal lubricants may be recommended for subjective symptom improvement of dyspareunia (difficult or painful sexual intercourse).
4. Healthcare providers can offer polycarbophil gel (a vaginal moisturizer) as an effective treatment for symptoms of vulvovaginal atrophy including dryness and dyspareunia.
5. Effective surgical treatment options, including Burch colposuspension and the TVT procedure, are recommended for the treatment of stress urinary incontinence.
6. Effective non-surgical treatment options, such as weight loss (in obese women), pelvic floor physiotherapy with or without biofeedback, weighted vaginal cones, functional electrical stimulation, and/or intravaginal pessaries, can be recommended for the treatment of stress urinary incontinence.
7. Lifestyle modification, bladder drill, and antimuscarinic therapy are recommended for the treatment of urge urinary incontinence.
8. Estrogen therapy (ET) should not be recommended for the treatment of postmenopausal urge or stress urinary incontinence.
9. Vaginal estrogen therapy can be recommended for the prevention of recurrent urinary tract infections in postmenopausal women.
10. Local estrogen therapy is recommended if hormone therapy is prescribed for vulvovaginal symptoms alone.



### *Sexual Concerns:*

1. Androgen therapy may be considered for selected women with acquired sexual desire/interest disorders after comprehensive assessment, systemic estrogen therapy and appropriate counselling. Androgen therapy is still investigational and long-term safety data are lacking.
2. A biopsychosexual assessment of preferably both partners (when appropriate), identifying intrapersonal, contextual, interpersonal and biological factors, is recommended prior to treatment of women's sexual problems.
3. For women with vaginal atrophy, local estrogen should be prescribed to improve vulvovaginal atrophy-associated dyspareunia.
4. Routine evaluation of sex hormone levels in postmenopausal women with sexual problems is not recommended. Available androgen assays neither reflect total androgen activity, nor correlate with sexual function.
5. Any investigational testosterone therapy included in the management of selected women with acquired sexual desire/interest disorder, typically associated with an arousal disorder, should only be initiated by clinicians experienced in women's sexual dysfunction and with informed consent from the woman. The investigational nature, lack of long-term safety data, need for systemic estrogen therapy, and careful follow-up must be explained.

### **Discussing Difficult Problems with a Healthcare Professional**

Tips for discussing “embarrassing” problems with a healthcare professional include:

- Make a list of what you want to discuss.
- Discuss the most important or most difficult questions first.
- Write down what the doctor tells you.
- If there is anything that you don't understand, ask for clarification.
- If you feel embarrassed, take along some information with you. It can be difficult to discuss embarrassing problems face-to-face, but if you find information on the Internet or in a book or magazine about your symptoms, you can use this to help explain and avoid having to make eye contact with your physician while discussing the problem.
- If you still feel unable to discuss the subject, write it all down and hand it to the doctor.
- Don't wait to be asked – give the doctor any information that you may feel is relevant including a history of the condition, symptoms, the impact they are causing you, any lifestyle factors that may have contributed, any medication you are taking, etc.



The two cancers of primary concern to women assessing their options for managing the symptoms of menopause, are endometrial and breast cancer. Of particular interest is the relationship between various cancers and hormone therapy.

### Endometrial Cancer

Some evidence indicates that unopposed estrogen replacement therapy (ERT) increases the risk of endometrial cancer.<sup>29</sup> However, it is recommended that progestins or progesterone added to an ERT regimen markedly reduces the risk of developing both endometrial hyperplasia and cancer, although no hormone therapy regimen has proven completely protective.<sup>30</sup>

Hormone therapy (HT) has traditionally been withheld from women after treatment for endometrial cancer, based on the belief that it may increase the risk of recurrence. This belief, however, has never been substantiated. The SOGC recommends that women with a past history of early stage (stage I), low grade (grade 1 or 2) endometrial cancer may take HT to control distressing vasomotor symptoms.<sup>31</sup>

### Breast Cancer

Recently, the release of information from significant studies, such as the Women's Health Initiative (WHI),<sup>32</sup> has added to the debate about hormone therapy and its impact on breast cancer risk. Results of the WHI study found a slight increased risk of breast cancer after five years of HT treatment; however, it does not significantly increase the baseline (usual) risk of breast cancer. The risk increases from 0.1 to 0.2 per 10,000 women. When assessing the results of the WHI study it is also important to note that the participants ranged in age from 50 to 79, and the average age of participants was 63.2 years.<sup>33</sup> This average age is significant given the incidence of breast cancer increases with age (most breast cancers occur after the age of 60).

Additionally, key findings from the estrogen only arm of WHI (a sub-set of women who had a hysterectomy, so required estrogen only) showed no significant effect on the risk of breast cancer.<sup>34</sup> And in fact there was a trend to reduced risk.

All women face an increased risk of breast cancer as they age. If a woman lives to age 85, she will have a one in nine chance of developing breast cancer. Most breast cancers occur after age 60 and deaths from breast cancer in Canada are actually decreasing.<sup>35</sup>

**The increased risk for breast cancer after five years of combined estrogen-progestin therapy is similar in magnitude to other lifestyle variables such as fewer pregnancies and reduced breast-feeding, postmenopausal obesity, excessive alcohol or cigarette use, and lack of regular exercise. – SOGC 2006 Menopause Consensus Report**

The greatest single risk factor for breast cancer, after gender and advancing age, is the presence of two or more affected first order relatives. There are a number of commonly experienced risks, including being 20 per cent overweight, delaying childbirth until 30 or older, consuming two glasses of alcohol daily and lack of regular exercise. Long-term use of HT is of comparable magnitude to this group of risk factors.



## Pillar 4: Cancer

### Risk Factors for Breast Cancer<sup>36</sup>

Factor	Baseline breast cancers* per 1,000 women	Additional cancers per 1,000 women	Total cancers per 1,000 women
No HT use (baseline)	45	0	45
5 years of HT use	45	2	47
10 years of HT use	45	6	51
15 years of HT use	45	12	57
Alcohol consumption (2 drinks per day)	45	27	72
Lack of regular exercise (<4 hours/week)	45	27	72
Late menopause (10-year delay)	45	13	58
Body mass index (10 kg/m <sup>2</sup> increase)	45	14	59
Weight gain after meno- pause (>=20 kg)	45	45	90

\*Baseline or basic risk applies to all women and is due to factors that cannot be controlled (e.g., aging, gender)

Further, in a study published in the *British Medical Journal* in August 2005, researchers suggested that a woman's risk of developing breast cancer while taking hormone therapy may be even lower than previously thought. The evidence provided may help doctors weigh the individual benefits and risks of treatment more accurately.<sup>37</sup>

### Cumulative absolute risk and additional risk of breast cancer with duration of use of hormone therapy.

Age at calculation (years)	Age range (years)	Risk with no hormone replacement therapy		Additional risk (%) with combination therapy*				(% with oestrogen only therapy* (years of use)			
		Ratio <sup>†</sup>	%	3 years	5 years	10 years	15 years	3 years	5 years	10 years	15 years
40	40-79	1 in 14	7.21	0.18	0.38	1.18	2.22	0.05	0.12	0.34	0.64
45	45-79	1 in 15	6.76	0.26	0.52	1.45	2.54	0.07	0.15	0.41	0.73
50	50-79	1 in 16	6.10	0.31	0.60	1.59	2.82	0.09	0.18	0.45	0.81
55	55-79	1 in 19	5.30	0.33	0.64	1.76	3.17	0.09	0.19	0.50	0.91
60	60-79	1 in 23	4.44	0.37	0.73	2.01	3.51	0.10	0.21	0.57	1.00
65	65-79	1 in 29	3.48	0.42	0.84	2.19	3.27	0.12	0.25	0.62	0.91
70	70-79	1 in 42	2.37	0.47	0.88	1.64	–	0.13	0.25	0.50	–
75	75-79	1 in 88	1.14	0.43	0.58	–	–	0.12	0.14	–	–

\*The additional risk for a specific formulation and duration of use can be added to the baseline risk with no hormone therapy to provide an estimate of a woman's specific cumulative absolute risk of breast cancer from a specific age to age 79 years.

<sup>†</sup>The ratio is calculated as the reciprocal of the cumulative absolute breast cancer risk (%) of non-users.



### Other Cancers

Combined HT is associated with a reduced risk of colorectal cancer and a possible small increase in the risk of ovarian cancer. These effects are very small, however, and should not impact decision-making about the use of HT for distressing vasomotor symptoms. There is too little information to comment on any relationship between HT use and cancers of the cervix, vagina or vulva.<sup>38</sup>

### The 2006 Menopause Consensus Report provides the following recommendations related to cancer:

1. All unscheduled uterine bleeding should be investigated because no estrogen-progestin regimen is completely protective against endometrial carcinoma.
2. Estrogen-progestin therapy may be offered to women with low-grade adenocarcinoma of the endometrium who have moderate to severe menopausal symptoms.
3. Healthcare providers should periodically review the risks and benefits of prescribing HT to a menopausal woman in light of the association between duration of use and breast cancer risk.
4. Healthcare providers may prescribe HT for menopausal symptoms in women at increased risk of breast cancer with appropriate counselling and surveillance.
5. Healthcare providers should clearly discuss the uncertainty of risks associated with HT after a diagnosis of breast cancer in women seeking treatment for distressing symptoms.



## Pillar 5: Osteoporosis Treatment

Osteoporosis is a skeletal disease characterized by low bone mass and deterioration of bone tissue, with increased bone fragility and susceptibility to fracture.<sup>39</sup> Postmenopausal status and advanced age account for about 80 per cent of cases of osteoporosis.<sup>40</sup> All postmenopausal women should be evaluated for osteoporosis; a combination of medical history, physical examination and selected diagnostic tests may be required.

Most people achieve peak bone mass around the age of 20. At about age 35, bone density starts to decline, leading to thinner bones as we age. For women, this process speeds up after menopause because estrogen, which normally slows bone loss, declines.

Women can lose three to five per cent of their bone mass each year for an average of 10 years after menopause. It is possible for a woman to lose as much as 30 per cent of her total bone mass during the years following menopause, leading to postmenopausal osteoporosis (weak, thin bones). Weaker bones are more susceptible to fracture, primarily in the hips, wrists and vertebrae, which can lead to disability, pain, deformity and even death.

With an estimated two million Canadian women having osteoporosis,<sup>41</sup> it is a major health concern. Unfortunately, women may not experience any signs or symptoms of bone loss until they have had a fracture – hence the disease's moniker, “the silent thief.”

### Risk Factors for Osteoporosis

#### Personal

- Female
- Older age
- Postmenopausal
- Experienced early menopause, natural or surgical (before age 40)
- Family history of osteoporosis, especially osteoporotic fractures
- White or Asian race
- Thin and small boned
- History of irregular periods, no periods or eating disorder

#### Lifestyle

- Infrequent exercise
- Life-long low calcium intake
- Low vitamin D intake
- Cigarette smoking
- Caffeine (more than three cups of coffee per day)
- Alcohol (consistently more than two drinks per day)

#### Drugs

- Corticosteroids
- Antiepileptic drugs
- High dose thyroid medication



## Pillar 5: Osteoporosis Treatment

### *HT and Osteoporosis*

While exercise and appropriate nutrition throughout life are important to maximize peak bone density, lifestyle modifications alone may not be sufficient to prevent osteoporosis.

Estrogen can be used to prevent the bone loss leading to osteoporosis. It has been documented that estrogen has this positive effect on 90 per cent of all women, no matter what their age. If a woman has been diagnosed with osteoporosis, estrogen can stabilize or even improve bone density. Although HT can help to prevent postmenopausal osteoporosis, it is not generally used as the primary medication for the prevention and treatment of osteoporosis. Rather, HT has the secondary benefit of providing bone protection if taken, short-term, for the relief of menopausal symptoms. When the distressing menopausal symptoms have subsided, other non-hormonal therapies to prevent or treat osteoporosis can be explored.<sup>42</sup>

The Women's Health Initiative, a randomized controlled clinical trial, demonstrates the ability of postmenopausal hormone therapy to prevent fractures at the hip, vertebrae and other sites.<sup>43</sup>

### *Osteoporosis Recommendations*

Guidelines for healthcare providers on the diagnosis and clinical management of postmenopausal osteoporosis were undertaken by a separate Committee, which included:

#### **Authors**

- Jacques P. Brown, MD, FRCPC, Quebec QC
- Michel Fortier, MD, FRCSC, Quebec QC

#### **Committee Members**

- Heather Frame, MD, CFPC, Winnipeg MB
- Alexandra Papaioannou, MD, FRCPC, Hamilton ON
- Chui Kin Yuen, MD, FRCSC, Winnipeg MB

### **The Canadian Consensus Conference on Osteoporosis made the following recommendations related to Osteoporosis and Menopause:**

1. Evaluation of osteoporosis in postmenopausal women should include the assessment of clinical risk factors for low bone mineral density (BMD) and BMD testing.
2. Postmenopausal women with historical height loss greater than 6 cm, prospective height loss greater than 2 cm, kyphosis, or acute incapacitating back pain syndrome should be sent for spine radiographs with a specific request to rule out vertebral fractures.
3. Hormone therapy should be prescribed to symptomatic postmenopausal women as the most effective therapy for symptom relief and a reasonable choice for the prevention of bone loss and fracture. The risks should be weighted against the benefits if estrogen therapy is being used solely for fracture prevention.



## Appendix I: Key Recommendations from the 2006 Menopause Consensus Report

Following is a list of key recommendations provided in the 2006 Menopause Consensus Report, with related chapters of the report identified.

### I. General Recommendations

1. Healthcare providers should discuss and encourage initiation of healthy lifestyle choices in menopausal women.
2. The primary indication for hormone therapy (HT) should be for the management of moderate to severe menopausal symptoms.
3. HT should not be prescribed for primary or secondary prevention of cardiovascular disease (CVD) or for primary prevention of dementia.
4. Local estrogen therapy (ET) is recommended if HT is prescribed for vulvovaginal symptoms alone.
5. HT should be prescribed for the appropriate duration to achieve treatment goals while taking into consideration risks and benefits and the woman's quality of life.
6. HT should be prescribed at the lowest effective dose, although the long-term risk/benefit ratio of lower dose HT has not been demonstrated.
7. The primary indication for progestin use should be endometrial protection in those women using systemic estrogen therapy who have an intact uterus.
8. HT may be prescribed for an extended period, following proper counselling, if the woman decides that for her the benefits outweigh the risks. Periodic re-evaluation is strongly recommended.
9. Androgen therapy may be considered for selected women with acquired sexual desire/interest disorders after comprehensive assessment, systemic estrogen therapy and appropriate counselling. Androgen therapy is still investigational and long-term safety data are lacking.
10. Healthcare providers may offer identified complementary and alternative medicine with demonstrated efficacy for mild menopausal symptoms.

### II. Specific Recommendations

#### Menopause and Age-Related Concerns (Chapter 2)

1. Lifestyle modifications, including reducing core body temperature, regular exercise, weight management, smoking cessation, and controlled breathing may be recommended to reduce mild vasomotor symptoms.
2. Healthcare providers should offer HT (ET/estrogen-progestin therapy) as the most effective therapy for the medical management of menopausal symptoms.
3. Progestins alone or low-dose oral contraceptives can be offered as alternatives for the relief of menopausal symptoms especially during the transition phase.
4. Non-hormonal prescription therapies, including antidepressant agents, gabapentine, clonidine, and bellergal, can be prescribed as alternatives to HT to reduce vasomotor symptoms.
5. Complementary and alternative medicine, including black cohosh, red clover-derived isoflavone and vitamin E, may be recommended for the reduction of mild vasomotor symptoms. Long-term efficacy and safety data are still lacking.
6. Any unexpected bleeding that occurs after 12 months of amenorrhea is considered postmenopausal bleeding and should be investigated.
7. If prescribing HT to older postmenopausal women, low or ultra-low dose ET should be preferred.



### II. Specific Recommendations (*cont'd*)

#### Urogenital Concerns (Chapter 3)

1. Conjugated estrogen (CE) cream, an intravaginal sustained-release estradiol ring, or estradiol vaginal tablets are recommended as effective treatment for vulvovaginal atrophy.
2. Routine progestin co-therapy is not required for endometrial protection in women receiving vaginal estrogen therapy in appropriate dose.
3. Vaginal lubricants may be recommended for subjective symptom improvement of dyspareunia.
4. Healthcare providers can offer polycarbophil gel (a vaginal moisturizer) as an effective treatment for symptoms of vulvovaginal atrophy including dryness and dyspareunia.
5. Effective surgical treatment options, including Burch colposuspension and the TVT procedure, are recommended for the treatment of stress urinary incontinence.
6. Effective non-surgical treatment options, such as weight loss (in obese women), pelvic floor physiotherapy with or without biofeedback, weighted vaginal cones, functional electrical stimulation, and/or intravaginal pessaries, can be recommended for the treatment of stress urinary incontinence.
7. Lifestyle modification, bladder drill, and antimuscarinic therapy are recommended for the treatment of urge urinary incontinence.
8. Estrogen therapy should not be recommended for the treatment of postmenopausal urge or stress urinary incontinence.
9. Vaginal estrogen therapy can be recommended for the prevention of recurrent urinary tract infections in postmenopausal women.

#### Sexual Concerns (Chapter 4)

1. A biopsychosocial assessment of preferably both partners (when appropriate), identifying intrapersonal, contextual, interpersonal and biological factors, is recommended prior to treatment of women's sexual problems.
2. For women with vaginal atrophy, local estrogen should be prescribed to improve vulvovaginal atrophy-associated dyspareunia.
3. Routine evaluation of sex hormone levels in postmenopausal women with sexual problems is not recommended. Available androgen assays neither reflect total androgen activity, nor correlate with sexual function.
4. Any investigational testosterone therapy included in the management of selected women with acquired sexual desire/interest disorder, typically associated with an arousal disorder, should only be initiated by clinicians experienced in women's sexual dysfunction and with informed consent from the woman. The investigational nature, lack of long-term safety data, need for systemic estrogen therapy, and careful follow-up must be explained.

#### Mood and Memory (Chapter 5)

1. Estrogen alone may be offered as an effective treatment for depressive disorders in perimenopausal women and may augment clinical response to antidepressant treatment, specifically SSRIs. The use of antidepressant medication, however, is supported with the most research evidence.
2. Estrogen can be prescribed to enhance mood in women with depressive symptoms. The effect appears to be greater for perimenopausal symptomatic women than for postmenopausal women.



3. Estrogen therapy is not currently recommended for reducing the risk of developing dementia in postmenopausal women or for retarding the progression or deterioration in women with diagnosed Alzheimer's disease.

### II. Specific Recommendations (cont'd)

#### Specific Medical Considerations (Chapter 8)

1. HT should be offered to women with premature ovarian failure (POF) or early menopause, and its use can be recommended until the age of natural menopause.
2. Estrogen therapy can be offered to women who have undergone surgical menopause for the treatment of endometriosis.
3. Menopausal women undergoing pelvic surgery should be given appropriate thromboembolic prophylaxis.
4. Healthcare providers may prescribe HT to diabetic women for the relief of menopausal symptoms.

#### Cardiovascular Disease (Chapter 9)

1. Healthcare providers should not initiate or continue HT for the sole purpose of preventing CVD (coronary artery disease and stroke).
2. Healthcare providers should abstain from prescribing HT in women at high risk for venous thromboembolic disease.
3. Healthcare providers should consider other evidence-based therapies and interventions to effectively reduce the risk of CVD events in women with or without vascular disease.

#### Cancer (Chapter 10)

1. All unscheduled uterine bleeding should be investigated because no estrogen-progestin regimen is completely protective against endometrial carcinoma.
2. Estrogen-progestin therapy may be offered to women with low-grade adenocarcinoma of the endometrium who have moderate to severe menopausal symptoms.
3. Healthcare providers should periodically review the risks and benefits of prescribing HT to a menopausal woman in light of the association between duration of use and breast cancer risk.
4. Healthcare providers may prescribe HT for menopausal symptoms in women at increased risk of breast cancer with appropriate counselling and surveillance (women in the Women's Health Initiative [WHI] study with high Gael scores were at no greater risk of breast cancer than women with low risk scores).
5. Healthcare providers should clearly discuss the uncertainty of risks associated with HT after a diagnosis of breast cancer in women seeking treatment for distressing symptoms.



## Appendix II: About Hormone Therapy

Hormone therapy (HT) for the symptoms of menopause is used to replace the hormones that the ovaries stop making, primarily estrogen.<sup>44</sup> HT can contain estrogen alone (ET) or it can be in an estrogen-progestin combination (EPT), depending on the woman's situation and needs.

For a woman who has undergone a hysterectomy, and therefore has no uterus, estrogen alone is used.<sup>45</sup> A progestin is not required for women who have an intact uterus; however, the addition of the progestin helps to protect the uterus from endometrial cancer.

While some women (5 to 10 per cent) may experience side effects from the use of estrogen, such as breast tenderness, nausea, headache and bloating, they are often dose-related, and may resolve with continued use, a decrease in dose, or a substitution with another preparation.

A woman should not be prescribed estrogen when the following exists:

- Unexplained vaginal bleeding
- Acute liver disease
- Active thromboembolic disease
- Known or suspected breast cancer
- Caution is also recommended in patients with a history of cardiovascular disease and hypertriglyceridemia (the presence of an excess of triglycerides in the blood)<sup>46</sup>

Side effects of progestins can include alterations in mood, breast tenderness and bloating, and can often be alleviated by switching from one progestin formulation to another.<sup>47</sup>

Contraindications to progestin use include:

- Known or suspected breast cancer
- Undiagnosed vaginal bleeding
- Pregnancy



### Duration of HT Use

Many menopausal symptoms can be controlled with short-term use of HT; however, HT may also be prescribed for long-term use in some instances with yearly re-evaluation by physician and patient. Every woman should be informed by her healthcare provider of the potential benefits and risks associated with any treatment option being considered.<sup>48</sup>

### The SOGC advises:<sup>49</sup>

- *HT is a safe and effective option for short-term use (up to five years) for the treatment of moderate to severe menopausal symptoms such as hot flashes, night sweats, mood swings, insomnia, difficulty concentrating and vaginal dryness. In addition, HT has the secondary benefit of providing protection against osteoporosis and colon cancer.*
- *If you are currently taking HT, especially if used for more than five years, it is important that you evaluate your situation. Consult with your healthcare provider on a yearly basis to review your dosage, your reasons for taking HT and your risks and benefits. If you decide to stop HT, your healthcare provider will advise you how to safely stop treatment.*
- *HT may also be prescribed for long-term use depending on your preference and situation, but once again, it is important to consult with your healthcare provider on a yearly basis to evaluate your risks and benefits.*

In a position statement issued by The North American Menopause Society (NAMS) in 2004, based on a review and analysis of published evidence, the following recommendation was made in terms of treatment duration:<sup>50</sup>

- *The Panel concluded that with regard to duration of use, a general guiding principle should be for the lowest effective dose and time consistent with treatment goals. The Panel recognized that symptoms can recur when therapy is discontinued, independent of age and duration of ET/EPT use. The Panel agreed that the decision to continue hormone therapy should be individualized, and based on:*
  - *Severity of symptoms;*
  - *Current risk-benefit considerations;*
  - *The woman, in consultation with her healthcare provider, believes that continuation of therapy is warranted.*
- *Extended use of the lowest effective dose for treatment goals of ET or EPT is acceptable under the following circumstances, provided the woman is well aware of the potential risks and benefits and that there is clinical supervision:*
  - *For the woman for whom, in her opinion, benefits of menopause symptom relief outweigh risks, notably after failing an attempt to withdraw treatment;*
  - *For women who are at high risk for osteoporotic fracture and also have moderate to severe menopause symptoms;*
  - *For further prevention of bone loss in women with established reduction in bone mass when alternate therapies are not appropriate for that woman or cause side effects, or when the outcomes of the extended use of alternate therapies are unknown.*



### Systemic and Local HT

There are two HT approach options for women: **systemic** hormone therapy (taken as a pill, gel or patch), which restores estrogen throughout the body; and **local** hormone therapy, which is taken as a vaginal estrogen cream, tablet or ring, and restores estrogen in the vaginal area.

*Systemic* HT can be very effective in relieving a variety of symptoms such as hot flashes, night sweats, mood swings, irritability, insomnia, palpitations, joint aches, vaginal dryness and discomfort, and urinary frequency. While hot flashes may start to improve in as little as one month, treatment may take three to six months to become fully effective. Systemic HT may not be appropriate for all women, and, for some women, it is not an effective means of relieving vaginal symptoms.

When vaginal symptoms are a consideration, a *local* HT formulation may be the preferred option. Local estrogen will raise the local hormone levels, but not affect the whole body. Extra progestin is not usually needed with local estrogen, since the doses do not affect the endometrium when used in the short-term. Local HT is also a viable option for women with contraindications or who have intolerance to systemic estrogen therapy.

*Local* HT has also been proven to prevent urinary tract infections, a common urogenital complaint among women following menopause. In a randomized double-blind study by Raz and Stamm, the incidence of recurrent urinary tract infection in postmenopausal women treated with intravaginal estrogen was significantly reduced to 0.5 episodes per patient-year compared to 5.9 episodes per patient-year in women treated with placebo.<sup>51</sup>



**The 2006 Menopause Consensus Report provides the following recommendations regarding HT use:  
(As outlined in Pillars)**

1. Healthcare providers should offer HT (ET/estrogen-progestin therapy) as the most effective therapy for the medical management of menopausal symptoms.
2. The primary indication for hormone therapy (HT) should be for the management of moderate to severe menopausal symptoms.
3. HT should be prescribed at the lowest effective dose, although the long-term risk/benefit ratio of lower dose HT has not been demonstrated.
4. HT should be prescribed for the appropriate duration to achieve treatment goals while taking into consideration risks and benefits and the woman's quality of life.
5. HT may be prescribed for an extended period, following proper counselling, if the woman decides that for her the benefits outweigh the risks. Periodic re-evaluation is strongly recommended.
6. Progestins alone or low-dose oral contraceptives can be offered as alternatives for the relief of menopausal symptoms especially during the transition phase.
7. Conjugated estrogen (CE) cream, an intravaginal sustained-release estradiol ring, or estradiol vaginal tablets are recommended as effective treatment for vulvovaginal atrophy.
8. Estrogen therapy should not be recommended for the treatment of postmenopausal urge or stress urinary incontinence.
9. Vaginal estrogen therapy can be recommended for the prevention of recurrent urinary tract infections in postmenopausal women.
10. Local estrogen therapy is recommended if HT is prescribed for vulvovaginal symptoms alone.
11. For women with vaginal atrophy, local estrogen should be prescribed to improve vulvovaginal atrophy-associated dyspareunia.
12. Estrogen-progestin therapy may be offered to women with low-grade adenocarcinoma of the endometrium who have moderate to severe menopausal symptoms.
13. Routine progestin co-therapy is not required for endometrial protection in women receiving vaginal estrogen therapy in appropriate dose.
14. Healthcare providers should periodically review the risks and benefits of prescribing HT to a menopausal woman in light of the association between duration of use and breast cancer risk.
15. Healthcare providers may prescribe HT for menopausal symptoms in women at increased risk of breast cancer with appropriate counselling and surveillance.
16. Healthcare providers should clearly discuss the uncertainty of risks associated with HT after a diagnosis of breast cancer in women seeking treatment for distressing symptoms.
17. Hormone therapy should be prescribed to symptomatic postmenopausal women as the most effective therapy for symptom relief and a reasonable choice for the prevention of bone loss and fracture. The risks should be weighed against the benefits if estrogen therapy is being used solely for fracture prevention.



### References

- 1 Accessed and retrieved on August 13, 2005 from Society of Obstetricians and Gynaecologists of Canada: Hormone Replacement Therapy – Your Questions Answered: [http://sogc.medical.org/pub\\_ed/tearDownMyth/page4\\_e.shtml](http://sogc.medical.org/pub_ed/tearDownMyth/page4_e.shtml)
- 2 Accessed and retrieved on August 13, 2005 from North American Menopause Society: [www.menopause.org/about/meno/04A.pdf](http://www.menopause.org/about/meno/04A.pdf); page '9'.
- 3 Accessed and retrieved on August 13, 2005 from Society of Obstetricians and Gynaecologists of Canada: [http://sogc.medical.org/pub\\_ed/menop/english/menoguide/p4\\_e.shtml](http://sogc.medical.org/pub_ed/menop/english/menoguide/p4_e.shtml)
- 4 Accessed and retrieved on August 13, 2005 from Society of Obstetricians and Gynaecologists of Canada: [http://sogc.medical.org/pub\\_ed/menop/english/menoguide/p1\\_e.shtml](http://sogc.medical.org/pub_ed/menop/english/menoguide/p1_e.shtml)
- 5 Canadian Consensus Conference on Menopause, 2006 Update, *J Obstet Gynaecol Can* 2006;28(2) Supplement.
- 6 Canadian Consensus Conference on Menopause, 2006 Update, *J Obstet Gynaecol Can* 2006;28(2) Supplement.
- 7 Canadian Consensus Conference on Menopause, 2006 Update, *J Obstet Gynaecol Can* 2006;28(2) Supplement.
- 8 Canadian Consensus Conference on Menopause, 2006 Update, *J Obstet Gynaecol Can* 2006;28(2) Supplement.
- 9 Yusuf S, Hawken S, Ounpuu S, et al.; INTERHEART study investigators. "Effect of potentially modifiable risk factors associated with myocardial infarction in 52 countries (the INTERHEART study): case-control study." *Lancet* 2004;364(9438): 937-52.
- 10 Canadian Consensus Conference on Menopause, 2006 Update, *J Obstet Gynaecol Can* 2006;28(2) Supplement.
- 11 Rich-Edwards JW, Stampfer MJ, Manson JE, et al. "Breast-feeding during infancy and the risk of cardiovascular disease in adulthood." *Epidemiology* 2004;15(5):550-6.
- 12 Steinberger J, Daniels SR. "Obesity, insulin resistance, diabetes, and cardiovascular risk in children: an American Heart Association scientific statement from the Atherosclerosis, Hypertension, and Obesity in the Young Committee (Council on Cardiovascular Disease in the Young) and the Diabetes Committee (Council on Nutrition, Physical Activity, and Metabolism)." *Circulation* 2003;107(10): 1448-53.
- 13 Canadian Consensus Conference on Menopause, 2006 Update, *J Obstet Gynaecol Can* 2006;28(2) Supplement.
- 14 Accessed and retrieved on January 26, 2006 from Health Canada. The Canada Food Guide. Ottawa: Health Canada 2001. [http://www.hc-sc.gc.ca/fn-an/food-guide-aliment/index\\_e.html](http://www.hc-sc.gc.ca/fn-an/food-guide-aliment/index_e.html) (From the SOGC – Canadian Consensus Conference on Menopause and Osteoporosis. 2002 Update. *J Obstet Gynaecol Can* 2002;24(10)).
- 15 Accessed and retrieved on August 14, 2005 from Society of Obstetricians and Gynaecologists of Canada. What You Can Do to Protect Your Bones: [www.sogc.org/pub\\_ed/menop/english/Osteoporosis/p6\\_e.shtml](http://www.sogc.org/pub_ed/menop/english/Osteoporosis/p6_e.shtml)
- 16 Canadian Consensus Conference on Menopause and Osteoporosis. 2002 Update. *J Obstet Gynaecol Can* 2002;24(10).
- 17 Canadian Consensus Conference on Menopause and Osteoporosis. 2002 Update. *J Obstet Gynaecol Can* 2002;24(10).
- 18 Canadian Consensus Conference on Menopause, 2006 Update, *J Obstet Gynaecol Can* 2006;28(2) Supplement.
- 19 Accessed and retrieved on August 13, 2005 from Society of Obstetricians and Gynaecologists of Canada: [http://sogc.medical.org/pub\\_ed/menop/english/menoguide/p3\\_e.shtml](http://sogc.medical.org/pub_ed/menop/english/menoguide/p3_e.shtml)
- 20 Canadian Consensus Conference on Menopause, 2006 Update, *J Obstet Gynaecol Can* 2006;28(2) Supplement.
- 21 Belisle S, Fluker MR, and the Consensus Conference Writing Group. "Canadian Consensus Conference on Menopause and Osteoporosis." *J Obstet Gynaecol Can* 1998;20:1243-72 (part I) and 1998;21:37-70 (part II).
- 22 Fluker, M. "HRT in older women: Is it ever too late?" *BC Medical Journal* 2001;43(9):517-20.
- 23 Canadian Consensus Conference on Menopause, 2006 Update, *J Obstet Gynaecol Can* 2006;28(2) Supplement.
- 24 Canadian Consensus Conference on Menopause, 2006 Update, *J Obstet Gynaecol Can* 2006;28(2) Supplement.
- 25 Canadian Consensus Conference on Menopause, 2006 Update, *J Obstet Gynaecol Can* 2006;28(2) Supplement.
- 26 Pandit L., Ouslander JG. "Postmenopausal vaginal atrophy and atrophic vaginitis." *Am J Med Sci.* 1997;314:228-231.



## References

- 27 Johnston SL, Farrell SA, Bouchard C, et al. "SOGC Clinical Practice Guidelines. The Detection and Management of Vaginal Atrophy." *J Obstet Gynaecol Can* 2004;26:503-508.
- 28 Eriksen PS, Rasmussen H. "Low dose 17 beta-estradiol vaginal tablets in the treatment of atrophic vaginitis: a double-blind placebo controlled study." *Eur J Obstet Gynecol Reprod Biol.* 1992;44(2):137-44.
- 29 Canadian Consensus Conference on Menopause, 2006 Update, *J Obstet Gynaecol Can* 2006;28(2) Supplement.
- 30 Canadian Consensus Conference on Menopause, 2006 Update, *J Obstet Gynaecol Can* 2006;28(2) Supplement.
- 31 Canadian Consensus Conference on Menopause, 2006 Update, *J Obstet Gynaecol Can* 2006;28(2) Supplement.
- 32 Writing Group for the Women's Health Initiative Investigators. "Risks and benefits of estrogen plus progestin in healthy postmenopausal women: Principal results from the Women's Health Initiative Randomized Controlled Trial." *J Am Med Assoc* 2002;288:321-33.
- 33 Accessed and retrieved on May 27, 2005 from Society of Obstetricians and Gynaecologists of Canada: [www.sogc.org/pub\\_ed/hrt/index\\_e.shtml](http://www.sogc.org/pub_ed/hrt/index_e.shtml)
- 34 Accessed and retrieved on November 7, 2005 from NIH News: WHI Study Finds No Heart Disease Benefit, Increased Stroke Risk With Estrogen Alone: <http://www.nih.gov/news/pr/apr2004/nhlbi-13.htm>
- 35 Accessed and retrieved on August 14, 2005 from Society of Obstetricians and Gynaecologists of Canada: [http://sogc.medical.org/pub\\_ed/menop/english/menoguide/p4\\_e.shtml](http://sogc.medical.org/pub_ed/menop/english/menoguide/p4_e.shtml)
- 36 Accessed and retrieved on August 14, 2005 from Society of Obstetricians and Gynaecologists of Canada: [http://sogc.medical.org/pub\\_ed/menop/english/menoguide/p4\\_e.shtml](http://sogc.medical.org/pub_ed/menop/english/menoguide/p4_e.shtml)
- 37 Coombs, NJ, et al. "Hormone replacement therapy and breast cancer: estimate of risk." *BMJ* 2005;331:347-49
- 38 Canadian Consensus Conference on Menopause, 2006 Update, *J Obstet Gynaecol Can* 2006;28(2) Supplement
- 39 "Consensus development conference: diagnosis, prophylaxis and treatment of osteoporosis." *Am J Med* 1993;94(24):646-50 (no author listed)
- 40 Barrett-Connor E. "The economic and human cost of osteoporotic fracture." *Am J Med* 1995;98(24):24-35
- 41 Goeree R O B, Pettitt D B, Cuddy L, Ferraz M, Adachi J. "An assessment of the burden of illness due to osteoporosis in Canada." *J Obstet Gynaecol Can* 1996:15-24
- 42 Accessed and retrieved on November 7, 2005 from Society of Obstetricians and Gynaecologists of Canada. Osteoporosis, Let's Talk about it: [www.sogc.org/pub\\_ed/menop/english/Osteoporosis/p6\\_e.shtml](http://www.sogc.org/pub_ed/menop/english/Osteoporosis/p6_e.shtml)
- 43 Writing Group for the Women's Health Initiatives Investigators. "Risks and benefits of Estrogen plus progestin in healthy postmenopausal women." *J Am Med Assoc* 2002;288: 321-33
- 44 Access and retrieved on May 27, 2005 from Society of Obstetricians and Gynaecologists of Canada: [http://www.sogc.org/pub\\_ed/menop/english/menoguide/p8\\_e.shtml#whatdoineedtoknow](http://www.sogc.org/pub_ed/menop/english/menoguide/p8_e.shtml#whatdoineedtoknow)
- 45 Accessed and retrieved on August 8, 2005 from The North American Menopause Society. "Estrogen and progestogen use in peri- and postmenopausal women." *The Female Patient* February 2005: <http://www.menopause.org/HTstatementTFP.htm>
- 46 Canadian Consensus Conference on Menopause and Osteoporosis 2002 Update. *J Obstet Gynaecol Can*, 2002;24(10).
- 47 Society of Obstetricians and Gynaecologists of Canada. Canadian Consensus Conference on Menopause and Osteoporosis. 2002 Update. *J Obstet Gynaecol Can*, 2002;24(10).
- 48 Accessed and retrieved on August 14, 2005 from Society of Obstetricians and Gynaecologists of Canada: [http://sogc.medical.org/pub\\_ed/hrt/index\\_e.shtml](http://sogc.medical.org/pub_ed/hrt/index_e.shtml) and [http://sogc.medical.org/pub\\_ed/monop/english/menoguide/p8\\_e.shtml](http://sogc.medical.org/pub_ed/monop/english/menoguide/p8_e.shtml)
- 49 Accessed and retrieved on May 27, 2005 from Society of Obstetricians and Gynaecologists of Canada; Hormone Therapy and You; Question: Now that I'm aware of the outcome of this study (WHI), what should I retain: [http://www.sogc.org/pub\\_ed/hrt/index\\_e.shtml](http://www.sogc.org/pub_ed/hrt/index_e.shtml)
- 50 The North American Menopause Society. "Recommendations for estrogen and progestogen use in peri- and postmenopausal women: October 2004 position statement of The North American Menopause Society." *Menopause* 2004; 11(6, Part 1 of 2):589-600.
- 51 Raz R, Stamm WE. "A controlled trial of intravaginal estriol in postmenopausal women with recurrent urinary tract infections." *N Engl J Med* 1993;329:753-7.