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The Women's Health Journey Across the Lifespan

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The Women's Health Journey Across the Lifespan

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As we reflect on Women's Health, from the onset of menarche, through the changes marked by perimenopause, leading to the cessation of menses, and on to menopause, there are distinct issues and concerns at these different stages for Canadian women and their partners. Hormonal fluctuations, family planning, childbearing, as well as certain conditions and diseases may reflect this evolving landscape. In this paper, we will explore fundamental areas of a women's hormonal health, by providing a brief overview of her journey.

The Early Reproductive Years

Generally, with the onset of menses, it is reasonable to consider and provide contraceptive counselling for our patients. Despite the variability in timing of menarche for a given patient, the age of consent in Canada is 16. The age of consent is the age at which a young person can legally agree to sexual activity. Age of consent laws apply to all forms of sexual activity, ranging from kissing and fondling to penetrative intercourse. However, a 14- or 15-year-old can consent to sexual activity as long as the partner is less than 5 years older and there is no relationship of trust, authority or dependency or any other exploitation of the young person. There is also a "close in age" exception for 12- and 13-year-olds. A 12- or 13-year-old can consent to sexual activity with a partner as long as the partner is less than 2 years older and there is no relationship of trust, authority or dependency or any other exploitation of the young person.[1] As providers of healthcare, we need to be aware of these parameters and begin counselling our patients, if appropriate, to offer options for protection from unplanned pregnancy.

The Society of Obstetricians and Gynaecologists of Canada (SOGC) reaffirmed in the Contraception Consensus 2015,[2] and later updated during the pandemic, that recommendations for screening, duration of use, follow-up assessments, and the provision of long-acting reversible contraception (LARC) methods as first-line contraception methods should be provided. During pandemic situations, provision of family planning services must be adapted in an evidence-based fashion.[3] For young patients, issues regarding care and counselling may include access, privacy, and timing. As health care professionals, we should be removing any barriers in order to offer care and counselling to young patients.

In Canada, LARC methods can provide reliable contraception that is resistant to fluctuations in healthcare access. We now have various options such as intrauterine devices as well as a single rod implant. Some devices now have Health Canada approval for longer use and provide the patient with options for timing and for interaction with their provider.

Contraceptive pills, patches, and rings can also be offered to young patients. These methods can even be initiated via tele-health for low-risk candidates.[3] While assessing cardiac risk is important, evidence suggests that even a blood pressure measurement can be delayed in an otherwise healthy, low-risk candidate.

Counselling about emergency contraception is important as young patients may be unaware of options that can be initiated up to 5 days after unprotected intercourse.

In-person evaluation of our patients is a very important time to provide counsel about issues related to sexually transmitted diseases, levels of protection with condom use, and primary prevention against the Human Papilloma Virus (HPV) with the HPV vaccine. While both boys and girls in every province and territory are offered vaccines through Public Health in the

school system, uptake is widely variable across the country. For example, during the 2020–2021 period in Ontario, uptake for Grade 7 students was less than 1%, as there were school closures and other barriers to vaccine access.[4] Generally, uptake of the school-based vaccine programs is improving, but primary care practitioners need to be cognizant that many patients may have missed the routine vaccination program.

Women's Fertility

After successful contraception has been achieved for patients during their teens and twenties, what about conception at the next stage of their lives? And what is the risk and impact of sexually transmitted infections (STIs)

According to Delbaere et al. when a woman is younger than 30 years of age, she has an 85% probability to conceive within 1 year. At the age of 30, there is a 75% chance to conceive in the first 12 months. This probability declines to 66% at the age of 35, and 44% at the age of 40. This is due to the effect of aging on the ovary and eggs.[5] Furthermore, older women are more likely to experience a miscarriage than younger women (27% of pregnancies end in a miscarriage at age 40 compared to 16% at age 30 or younger).[2] Advanced maternal age is associated with a prolonged time to conceive, and postponed parenthood may affect the desired family size.

At this time of life, providers should be encouraging healthy lifestyles, with no smoking, reducing alcohol and caffeine intake, proper exercise, and efforts to maintain an ideal weight, because all of these measures increase the chances of conceiving and are important for the long-term health of the children and their parents. However, given the issue of postponing pregnancy, with options such as egg freezing and other interventions often being considered by patients, providers often consult with patients regarding these options.

While egg freezing may be an option for women who strongly desire a child in the future, the current technique is an unreliable insurance. If the woman decides to freeze her eggs before the age of 35, there is a 30–40% probability to conceive when there are 10 eggs available.[6] However, research points out that women interested in elective egg freezing are often at the end of their reproductive life spans (late 30s to early 40s). These women want children but may not currently have a partner with whom to build a family.[7] The chances of having a child at this juncture are rather low, the procedure is expensive, and it is less likely to result in a positive outcome.

Sexually Transmitted Infections

With respect to STIs and their impact on health and fertility, there are a number of infections that have an adverse effect on fertility. The bacteria *Chlamydia trachomatis* and *Neisseria gonorrhoeae* are the major causes of pelvic inflammatory disease (PID). In untreated women, PID results in tubal factor infertility in 10–40% of the cases,[8-10] and increases the probability of ectopic pregnancy by more than 6-fold.[8] *Neisseria gonorrhoeae* and, to a lesser extent, *Chlamydia trachomatis* have also been associated with reduced male fertility[11], and both bacteria have been linked to an increased risk of perinatal complications.[12] *Treponema pallidum*, the bacterial agent of syphilis, causes approximately 10 million new infections per year,[13] and has a dramatic impact on pregnancy. Approximately one-third of untreated cases of syphilis result in perinatal death (stillbirth or neonatal mortality) and another third in congenital infection (reviewed in[12]).

How common are these infections in Canadian women? Information from the Public Health Agency of Canada in 2020 stated the following statistics:

- In the last decade, the rates of chlamydia, gonorrhea, and infectious syphilis have been rising. Between 2011 and 2019, rates have increased by 26% for chlamydia, 171% for gonorrhea, and 389% for infectious syphilis.
- Chlamydia remains the most commonly reported sexually transmitted infection.
- Antimicrobial resistance in gonorrhea remains an important public health concern.[14]
- Increasing rates of infectious syphilis in females have led to increases in the number of congenital syphilis cases.[15]

Overall, the prevalence of chlamydia tends to be highest in the younger age group, the prevalence of gonorrhea is evenly distributed among the age groups, and syphilis tends to be more prevalent in older age groups, particularly those over the age of 30. However, these are broad generalizations, and we have excellent guidelines from the SOGC and the Centers for Disease Control (CDC), which suggest screening

for syphilis in all pregnant women as part of their prenatal care, performing opportunistic testing of women under the age of 25 for both chlamydia and gonorrhea, and testing those over the age of 25 who are at risk.

Prevention, education, and testing remain crucial in addressing this growing public health issue.

Gynecologic Concerns During the Reproductive Years

Two of the most common gynecologic conditions which affect women during the reproductive years are pelvic pain and uterine fibroids. Pelvic pain can be multifactorial and include a diverse number of etiologies including, but not limited to, endometriosis, adenomyosis, irritable bowel syndrome, inflammatory bowel disease, painful bladder syndrome, ovarian cyst pain, ovulatory pain, PID, myofascial pain, neuropathic pain, and pain due to adhesive disease.[16] When evaluating a patient with pelvic pain, reviewing for overlapping conditions and determinants of health such as low socioeconomic status, employment, nutrition, physical activity, sleep disorder, mental health, substance use, and a history of trauma are critical. Management of pelvic pain requires a trauma-informed approach.[17] Endometriosis is a significant cause of pelvic pain, affecting 10% of women and 40–50% of all people reporting having chronic pelvic pain.[18] The mainstay of treatment for endometriosis is a medical approach including the optimization of non-steroidal anti-inflammatory drugs (NSAIDs) and hormonal mediation. First-line management often includes combined hormonal contraceptives (CHCs) [i.e., pill, patch, vaginal ring] or progestins (i.e., pill, injection, implant, intrauterine contraceptive device). Second-line therapies include gonadotropin-releasing hormone (GnRH) agonists, GnRH antagonists, and aromatase inhibitors.[18] Surgical management can be helpful in some situations including the presence of symptomatic endometriomas, deeply infiltrating endometriosis, or as part of a fertility strategy, however, the mainstay of management is medical.

Another major gynecologic condition in the reproductive years is uterine fibroid disease. Fibroids are the most common tumour in the female reproductive tract and a major cause of abnormal uterine bleeding and bulk symptoms. Fibroids can be found in up to 70% of 50-year-old women and the prevalence can be higher in certain ethnic groups such as Black women.[19] Fibroids are often detected during a pelvic examination in symptomatic women or as part of an imaging study. Ultrasound is the first-line imaging modality, however for surgical or interventional radiology planning, magnetic resonance imaging can be considered. Medical management of fibroids for heavy menstrual bleeding includes the use of NSAIDs and tranexamic acid for women wishing to avoid hormonal modulation. CHCs, progestin-only therapies, or GnRH analogs (i.e., leuprolide acetate or relugolix), with hormonal addback for bone protection, are the mainstays of medical management. Uterine artery embolization can also be considered to achieve relief from bleeding and a reduction in bulk symptoms.[19] Surgical management including hysteroscopic myomectomy for symptomatic fibroids in the endometrial cavity, and abdominal management via laparoscopy or laparotomy for myomectomy or hysterectomy, are also strategies for managing fibroid disease. A major fibroid issue can be resultant iron-deficiency anemia. This condition is best treated by managing the underlying disease issue and correcting the anemia by optimizing the iron stores with oral or parenteral iron preparations. Optimization of iron stores is especially important in peri-operative planning to minimize the risk of the requirement for blood products.

Perimenopause

Perimenopause refers to the period of time in which a woman experiences hormonal instability as a result of the changing ovarian reserve, which leads to the cessation of menses (menopause). In general, for some women, hormonal fluctuations can begin approximately 8 years before the onset of menopause.[20] These hormonal fluctuations can result in one of the most challenging times in a woman's life due to the onset of vasomotor symptoms, worsening sleep, irregular and heavy vaginal bleeding, mood lability, vaginal dryness, and sexual dysfunction. Women may also experience symptoms including hair and nail changes, weight challenges/muscle loss, fatigue, pruritus, and other atypical symptoms. It is also important to remember that perimenopausal women should have access to contraceptive counselling and preventative health screening opportunities. These include mammography, cervical or HPV testing, and colorectal cancer screening programs. The availability of these

screening programs can vary by province. In general, assessment and management of abnormal bleeding is a priority, as women with worsening bleeding (especially if it is heavy, erratic, or post-coital, or accompanied with risk factors such as age >40 years, elevated body mass index,

Menopausal Hormone Therapy (MHT) in Canada

Appropriate Starting Doses

	E only*	E + P combo products
Transdermal MHT	E2 patch 25 mcg, 1-2/wk (Climara Estraderm, Estradot, Oesclim)	E2 45 mcg + 15 mcg LNG/d (Climara Pro)
	E2 gel 0.06%, 1 pump (1.25 g/d) (Estrogel)	E2 50 mcg + NETA 140 mcg/d (Estalis)
	E2 gel 0.1% (0.25 g/d) (Divigel)	E2 0.06% gel (1 pump) + 100 mg MP per day (Estrogel ProPak)

	E only*	P only	E + P combo products	TSEC†	STEAR
Oral MHT	CE 0.3 mg/d (Premarin)	MP 100 mg/d x 14 d (Prometrium)	CE 0.625 mg/d + MPA 2.5 mg/d (Premplus)	0.45 mg CE/20 mg/d + BZA /d (Duavive)	Tibilone, unique compound, Selective Tissue Estrogenic Activity Regulator 2.5 mg
	E2 0.5 mg/d (Estrace)	MPA 2.5 mg/d x 14 d (Provera)	E2 0.5-1.0 mg + NETA 0.5 mg/d (Activelle, Activelle LD)		
	EE 0.3 mg/d (Estragyn)	NETA 2.5 mg/d x 20 d (Norlutate)	E2 1 mg/d + DRSP 1 mg/d (Angeliq)		
			E2 1 mg estradiol/ 100 mg progesterone/d (Bijuva)		

	E only†	
Vaginal MHT	CE cream 0.625 mg/g (0.5 g 2x/wk) (Premarin cream)	E2 ring 2 mg/90 days (Estring)
	Estrone cream 0.1% (0.5 g 1-2x/wk) (Estragyn)	E2 tablet 10 mcg 2x/wk (Vagifem)

* Progestogen is indicated for women with an intact uterus to provide endometrial protection
† No Progestogen required when used at recommended doses.

Table 1. Menopause Hormone Therapy in Canada; *Adapted from SOGC guidlines: Managing menopause, Obstet gynaecolCan. 2014 Sep;36(9):8308.; Individual product monographs*
Abbreviations: MHT: menopausal hormone therapy; **CE:** conjugated estrogens; **E2:** estradiol; **EE:** esterified estrogens; **MP:** micronized progesterone; **MPA:** medroxy progesterone acetate; **NETA:** norethindrone acetate; **LNG:** levonorgestrel; **DRSP:** drospirenone; **TSEC:** tissue selective estrogen complex.

or a history of endometrial hyperplasia) should have a physical exam and be considered for endometrial sampling. Many women who have major perimenopausal concerns benefit from the suppression of ovarian fluctuations by using a CHC or a progestin-only option such as dienogest, drospirenone, or norethindrone acetate daily.

Menopause

Menopause by definition is the time when a woman has gone 12 months without a menstrual period, which in Canada occurs at an average age of 51. While the remaining time after that final period is sometimes referred to as post-menopause, in reality, the rest of one's life is in menopause. While bleeding and menstrual cycles may have ceased, women may still continue to suffer with many symptoms. These include:

- Hot flashes, chills, night sweats
- Sleep issues
- Mood changes
- Bladder issues
- Vaginal issues and changes in sexual function
- Loss of bone
- Increase in aches or joint pain
- Changes in cholesterol levels
- Weight gain and slowed metabolism
- Thinning hair and dry skin
- Loss of breast fullness
- Irregular, unexpected bleeding

Most symptoms are related to the decline in estrogen levels. Fluctuations of hormone levels tend to have a greater impact on the symptoms; thus, some symptoms may diminish, often later in menopause.

As of 2024, we have excellent guidelines pertaining to the options for the treatment of menopausal symptoms for those patients with symptoms that are subjectively impacting their quality of life. The Menopause Society, www.menopause.org, offers guidelines that help individual practitioners review the risks and benefits of various treatment options. Other organizations that offer clear guidelines include the International Menopause Society, www.imsociety.org, and the Canadian Menopause Society, www.sigmamenopause.com. Generally, all guidelines agree that the safest time to initiate menopausal hormone therapy is before the age of 60 or within 10 years of the final menstrual period. The appropriate, often lowest, effective dose of systemic menopausal hormone therapy (MHT) that is consistent with treatment goals and provides benefits while minimizing risks for the individual woman should be the therapeutic goal **(Table 1)**. Long-term use of hormone therapy, which includes therapy for women aged older than 60 years, may be considered for healthy women at a low risk of cardiovascular disease and breast cancer. This therapy can be beneficial for those with persistent vasomotor symptoms

Medication Name (generic/Trade)	Dosage
Conjugated estrogen cream (Premarin)	0.5 mg PV for 14 days, then twice weekly
0.1% Estrone cream (Estragyn)	0.5-4 g PV for 14 days, then twice weekly
17 B-estradiol suppositories (Vagifem)	10 mcg tab PV for 14 days, then twice weekly
17 B-estradiol vaginal ring (Estring)	1 ring PV, change every 3 months
17 B-estradiol vaginal suppositories (Imvexxy)	4 or 10 mcg suppository PV for 14 days, then twice weekly
Prasterone (Intrarosa)	6.5 mg vaginal ovules PV QHS
Ospemiphene (Osphena) (oral estrogen agonist/ antagonist)	60 mg PO OD

Table 2. Options for the Management of Genitourinary Syndrome of Menopause; *courtesy of Vivien Brown, MD and Kelsey Mills, MD*

Abbreviations: OD: once daily; **PO:** by mouth; **PV:** per vagina; **QHS:** every night at bedtime

or who are at an elevated risk of fracture and for whom other therapies are not appropriate. Factors that should be considered include the severity of symptoms, the effectiveness of alternative non-hormonal interventions, and the underlying risk for osteoporosis, coronary heart disease, a cerebrovascular accident, venous thromboembolism, and breast cancer. Hormone therapy does not need to be routinely discontinued in women aged older than 60 or 65 years.[21]

Currently in Canada we have several treatment options for managing menopausal symptoms, including systemic hormones, taken either orally or transdermally, local hormone and other treatments that are taken for vaginal symptoms, as well as guidance on some medications with off label use that have been shown to be effective for those patients in whom hormone therapy may be contraindicated given their personal history.

Genitourinary syndrome of menopause (GSM) refers to a constellation of symptoms including dyspareunia, urinary frequency and urgency, recurrent urinary tract infections, vaginal dryness, and other concerns such as urethral caruncles.[22] Treatment for this collection of symptoms has no maximum length of use, a rare occurrence of contraindications, and does not require additional progestin for endometrial protection. There are currently 7 options for the management of GSM in Canada **(Table 2)**. Given our aging population and the fact that most women will live approximately one-third of their lives in the post-menopause period, the safety of long-term use of these products is reassuring. Furthermore, the impact of these treatments on urinary symptoms, including infections and continence, should not be overlooked. This is because these urinary symptoms, unlike hot flashes and night sweats, increase with time in most patients and have a major impact on their quality of life.

Interestingly, a new category of non-hormonal medications is being researched and is under Health Canada review. This category of medications are the neurokinin B receptor antagonists. These medications work by blocking the neurokinin receptor, thus preventing the activation of the temperature control system. This completely novel drug that is non-hormonal and very specific to brain temperature regulation offers a new opportunity for treatment for symptomatic women.

Conclusion

As health care providers to women, we acknowledge the tremendous changes and challenges women face as they move from menarche to menopause. We have endeavoured to identify key moments during this journey to equip health care providers with an overview of important health concepts during this time. Our role is to assist women in navigating these challenges, with a focus on long-term health, quality of life, and personalized options.

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