Menopause-Related Changes

Women who reach menopause naturally, whether at the average age or earlier, begin to experience physical and emotional changes during perimenopause. Women whose menopause is induced do not go through perimenopause. Instead, they experience menopause-related changes almost immediately. Understanding what changes are considered "normal" is their first step toward coping with these changes.

Menopause is different for each woman. Women who experience natural menopause commonly report irregular menstrual periods, hot flashes, sleep disturbances, and vaginal dryness during perimenopause. Women who have induced menopause have similar changes, except periods cease with the medical intervention. Many factors contribute to the amount of distress caused by these changes, including the life stresses and the physiologic effects of aging and disease, if any. The severity of these changes will vary from woman to woman, but for the most part, they are perfectly natural and normal. Some prefer not to call menopause-related changes "symptoms," a term usually associated with diseases.

Most of the menopause-related changes will not continue far beyond menopause and will stop without treatment. Others are problematic and require medical treatment. Several treatment options are available, although most studies that prove that treatments are effective and safe for menopausal women are with women

Menopause is different for each woman.

Most menopause-related changes will stop without treatment.

experiencing natural menopause at the typical age. Some symptoms at menopause may be signs of other ailments, such as a thyroid disorder. A woman should report any health changes to her healthcare provider for assessment and, if necessary, treatment.

Menstrual Period

During perimenopause, women notice changes in their menstrual periods. During the reproductive years, two of the hormones made by the ovaries – estrogen and progesterone – play important roles in the menstrual cycle. Estrogen causes the endometrium (lining of the uterus) to thicken in preparation for a fertilized egg. Progesterone then causes ripening (secretion of nutrients). If a fertilized egg is not received in the uterus, the ovaries stop making these hormones, and the uterine lining is shed as the menstrual period. Each woman has a unique pattern to her periods.

As a woman reaches perimenopause, changes in both menstrual flow and frequency are common. Most women who experience natural menopause, including premature natural menopause, report irregular periods. These are caused by decreased frequency of ovulation (release of eggs from the ovaries) and erratic levels of ovarian hormones. Initially, menstrual cycle changes can be subtle, and a variety of patterns are possible. Usually a woman's cycle will get shorter, with periods occurring more often than every 28 days. Bleeding may last fewer or more days than previously, and blood flow may be heavier, lighter, or just spotting. Late in perimenopause, skipping periods becomes common. However, some women skip several cycles and then menstruate regularly again. Nearly any menstrual pattern is possible.

Early or Premature Natural Menopause

In women who experience early or premature natural menopause, perimenopause can last for several years, with hormone levels that initially fluctuate from high to low, but eventually decline. Periods become irregular and then stop altogether. Some women also experience hot flashes and vaginal dryness.

Surgery-Induced Menopause

When the ovaries are removed during surgery, the decline in all hormone levels is much more rapid than with premature natural menopause or treatment-induced menopause. Menstrual periods stop immediately, and there is no perimenopause. Women often experience more intense hot flashes and other discomforts. These effects usually occur within days after surgery.

Chemotherapy-Induced Menopause

The effects of chemotherapy on the ovaries usually occur over time, rather than immediately. Women who experience chemotherapy-induced menopause do not go through perimenopause, but they may experience a period of slowly declining hormone levels. Menstrual periods may continue for a while, although they may be irregular. The more gradual the decline in hormone levels, the more gradual the menopause-related symptoms that are likely to occur. Some women experience very minor symptoms, others experience none at all. More dramatic changes in hormone levels, especially in younger women who have high hormone levels before treatment, can result in more severe symptoms that occur more quickly after treatment.

Pelvic Radiation-Induced Menopause

Levels of estrogen often decline quickly and dramatically following pelvic radiation. This can cause menopause-related symptoms, such as hot flashes and vaginal dryness, which may be more severe than those experienced after chemotherapy. Women may also stop menstruating. These changes usually occur within 3 to 6 months of treatment.

Normal vs Abnormal Uterine Bleeding

For most women experiencing natural menopause, whether at the usual time or earlier, changes in menstrual patterns and flow during perimenopause are natural and normal, and no treatment is needed for these changes in uterine bleeding. However, it should not be assumed that all changes in periods are due to approaching menopause. Evaluation by a healthcare provider may be necessary to rule out other conditions that could cause menstrual abnormalities.

A healthcare provider should be consulted right away if any of the following occur: periods that are much heavier than usual, especially with clots; periods lasting more than 7 days, or 2 to 3 (or more) days longer than usual; frequent periods (intervals shorter than 21 days from the start of one period to the start of the next); spotting or bleeding between menstrual periods; or bleeding from the vagina after intercourse. A menstrual diary may be helpful to determine what is normal or abnormal.

Although blood from the vagina usually comes from the uterus, it is possible for the vagina, bladder, rectum, or cervix to be the source. After induced menopause, women who experience any bleeding from the vagina should consult their healthcare provider to determine the cause.

Possible Causes of Abnormal Uterine Bleeding

HORMONAL IMBALANCE. Irregular or heavy bleeding can be caused by an imbalance in estrogen and progesterone production by the ovaries. Other hormone abnormalities, such as a low thyroid hormone level, can also cause changes in menstrual periods.

HORMONAL CONTRACEPTIVES. Use of products such as prescription contraceptives, implants, injections, and intrauterine devices can cause spotting or breakthrough bleeding.

PREGNANCY. Uterine bleeding can occur during a normal pregnancy as well as with ectopic pregnancy or threatened miscarriage.

FIBROIDS. These noncancerous growths in or around the uterus are a common cause of abnormal uterine bleeding. While many women with fibroid tumors have no symptoms, others may experience dramatic changes in their periods (such as prolonged and/or heavy bleeding), menstrual cramps, back pain, or difficulty with bowel movements or urination. While the cause of fibroids is unknown, they usually shrink after menopause when the ovaries produce much less estrogen. Occasionally, estrogen therapy may stimulate fibroid growth after menopause.

UTERINE LINING ABNORMALITIES. Noncancerous growths in the uterine lining (endometrium), such as polyps, or hyperplasia (overgrowth of the endometrium) can result in abnormal uterine bleeding.

CANCER. In a very small percentage of cases, cancer in the uterus, vagina, or cervix can cause abnormal bleeding from the uterus and/or vagina. Pap smears, endometrial biopsy, ultrasound, and regular pelvic exams can be helpful in diagnosing these serious diseases early enough for effective treatment.

OTHER CAUSES. Factors that interfere with blood clotting sometimes cause uterine bleeding. Conditions of the vagina, cervix, bladder, or rectum could also be the source of the bleeding.

Menopause means the end of natural childbearing.

Several medical procedures are available to determine the cause of abnormal uterine bleeding. These include ultrasound, endometrial biopsy, laparoscopy, hysteroscopy, and dilation and curettage.

Abnormal uterine bleeding caused by changes in the levels of estrogen and progesterone produced by a woman's ovaries can often be regulated with prescription hormones, such as low-dose oral contraceptives. Other prescription hormonal drugs, such as progestogens, are also sometimes used for short-term treatment.

Several surgical procedures are available to treat abnormal bleeding. The appropriate procedure depends on each woman's situation. Options include laparoscopy, hysteroscopy, endometrial ablation, dilation and curettage, myomectomy, and hysterectomy. If uterine fibroids have been diagnosed, the decision to surgically remove them depends on their size, number, and location, as well as the severity of the symptoms they cause. Sometimes, a hysterectomy (removal of the uterus) is required.

Bleeding After Menopause

Periods stop when a woman is past menopause, whether natural or induced, but using some estrogen plus progestogen therapies can cause bleeding to resume. Unless the bleeding is the typical pattern caused by using hormones, women who have uterine bleeding after menopause should see a clinician right away to rule out serious causes, such as cancer.

Fertility

Menopause means the end of natural childbearing. For many women, the end of childbearing is viewed with a sense of freedom. Birth control is no longer needed, and a new stage of life is beginning. But for women experiencing early menopause, the unplanned end of childbearing can be quite disturbing. The very personal decision about whether or not to have children or another child has been made for them – either by early natural menopause or by a disease and the treatment needed to combat that disease. These concerns are often compounded by concerns about the disease itself.

While women who must face the end of childbearing have many common feelings and concerns, their experiences are likely to differ, depending on the cause of their early menopause. Some women and their partners may benefit from professional guidance in dealing with their feelings.

The following presents some of the infertility issues associated with the causes of induced menopause:

- Surgery. As mentioned previously, surgery that removes both ovaries (bilateral oophorectomy) always causes infertility, as the source of eggs is gone. Removing only the uterus (hysterectomy) does not make a woman infertile, but prevents a woman from carrying a fetus and delivering a child. Modern medical techniques, however, may offer childbearing possibilities in these situations.
- Chemotherapy. Whether chemotherapy causes infertility depends on the extent of damage to the ovaries. Some women whose ovaries are damaged by chemotherapy eventually resume menstruation and

become pregnant. For other women, infertility is permanent.

Following chemotherapy, a woman may experience months or even years of irregular ovarian function, during which pregnancy may still be possible and birth control is needed. A woman may go several months without having a period, followed by normal menstruation. Depending on the woman's age and the type of chemotherapy used, normal ovarian function may resume after a period of time. Permanent infertility (menopause) is more likely when an alkylating drug is used or when chemotherapy drugs are used in combination. The risk of menopause from chemotherapy increases with age. Women over age 40 are more likely to experience permanent ovarian damage than younger women.

- Radiation. This type of therapy affects the reproductive system only when it is used to treat the pelvic area. If the ovaries receive a large amount of radiation, they will stop producing hormones (and egg production) – sometimes temporarily, but often permanently.

Radiation therapy is more likely to induce menopause when the ovaries receive high doses of radiation, such as for treatment of cervical cancer. Younger women who receive smaller doses of pelvic radiation, such as for Hodgkin's disease, may start to menstruate again as their ovaries recover.

A woman undergoing pelvic radiation can still become pregnant, although interruption of the menstrual cycle will stop fertility. Women facing this type of procedure should always talk to their healthcare provider before discontinuing birth control.

Birth Control

Reproductive-aged women are not totally protected from pregnancy until menopause. Birth control is not needed following surgery-induced menopause. However, what appears to be early natural or treatment-induced menopause may actually only be temporary and pregnancy may still be possible. If pregnancy is not desired, an effective, safe, and appropriate method of birth control is needed until menopause has been confirmed.

Options for Women Unable to Conceive

Before undergoing treatments or surgery that may cause early menopause, all women should discuss their concerns about childbearing with their healthcare providers and partners. An increasing number of options are available for women who are unable to conceive "naturally."

Women and their partners may be referred to a fertility specialist, who is familiar with the latest fertility technology, such as egg harvesting, in vitro fertilization, and surrogacy. Whether a woman will be able to make use of these technologies depends on her unique circumstances: age, general health, reasons for undergoing treatment, and the type of treatment used. Still other women find great joy and fulfillment through adoption.

Hot Flashes

The most common menopause-associated symptom is the hot flash (sometimes called a "hot flush"). Among US and Canadian women who experience natural menopause, more than two-thirds have hot flashes. For these

women, many hot flashes are easily tolerated, others are annoying or embarrassing, and still others can be debilitating. Most women experiencing natural menopause have hot flashes for 3 to 5 years. However, there is no way of knowing when they will stop.

Menopause is not the only cause of hot flashes.

Following surgical menopause, almost all women have severe hot flashes that begin immediately after surgery and last longer than those in women reaching menopause naturally. In US women who undergo surgery-induced menopause, up to 90% report hot flashes. Over time, however, symptom severity and rates are about the same as those experienced by women who reach menopause naturally.

Although the exact cause is still a matter of speculation, hot flashes are thought to result from changes in the part of the brain that regulates the body's temperature (hypothalamus). If the hypothalamus mistakenly senses that the woman is too warm, it starts a chain of events to cool her down. Blood vessels near the surface of the skin begin to dilate (enlarge), which increases blood flow to the surface in an attempt to radiate body heat. This produces a red, flushed look to the face and neck. It may also trigger perspiration to help cool the body. An increased pulse rate and a sensation of rapid heart beating may also occur. A cold chill often follows. A few women experience only the chill.

Hot flashes that occur at night can disrupt sleep, even if they are not strong enough to cause awakening. If heavy perspiration occurs with the hot flashes, the condition is called night sweats. While it is a myth that menopause itself makes a woman irritable, inadequate sleep causes fatigue, which may lead to irritability.

Menopause is not the only cause of hot flashes. On occasion, other medical conditions, such as thyroid disease and infections, can result in this symptom. In addition, a few drug therapies sometimes prescribed for women, such as tamoxifen (Nolvadex) for cancer therapy and raloxifene (Evista) for prevention or treatment of osteoporosis, can cause hot flashes and night sweats. A woman should not assume that her hot flashes are menopause related. Other potential causes should be ruled out by her healthcare provider, if menopause doesn't seem likely or if a woman has other unusual symptoms.

Hot flashes often increase with stress and may be associated with palpitations (rapid heartbeat) and feelings of anxiety. The unsettling feeling that precedes a hot flash can trigger a "panic attack" in women with a history of these events.

Treatment

Good news! There are many effective ways to relieve hot flashes and sometimes eliminate them entirely. The best choice for treatment depends on how severe they are. Women should be reminded that using no treatment is an option, since hot flashes will typically stop on their own over time.

Mild hot flashes can often be controlled with the following lifestyle changes:

- Identify and avoid personal hot flash triggers. These could include external heat (such as a warm room or using a hair dryer), strong emotions, hot drinks, hot or spicy foods, alcohol, caffeine, and cigarette smoking.
- Keep cool by dressing in layers, using a fan, and sleeping in a cool room.

- Try paced respiration (deep, slow abdominal breathing) when a hot flash is starting.
- Exercise regularly to reduce stress and promote better, more restorative sleep.
- Reduce stress through meditation, yoga, biofeedback, positive visualization, massage, or by taking a leisurely bath.

Some women report relief from mild hot flashes by using therapies such as black cohosh pills, pills or foods containing isoflavones, vitamin E, or topical progesterone cream, which can be purchased without a prescription. However, compelling scientific evidence to support the benefits and safety of these therapies is lacking. (See Complementary and Alternative Medicine for more.) Women who report relief from certain hot flash treatments may be experiencing a "placebo effect." In studies, women taking a placebo (inactive) medication reported up to a 40% reduction in hot flashes.

The most effective medical treatment for hot flashes is prescription estrogen, and it is the only government-approved therapy (see Box) for treating this menopause-related symptom. Relief is typically achieved within a few days, although lower doses may require a few weeks to work. Severe hot flashes can often be managed only with estrogen. Estrogen pills and patches are proven therapies. Except for the vaginal estradiol acetate vaginal ring (Femring), vaginal estrogen is not effective for hot flash relief.

When using estrogen, the lowest effective dose should be used for the shortest time necessary to avoid increased risks associated with higher doses and long-term use. Stopping therapy will determine if hot flashes are still present. Slowly tapering estrogen is recommended to help avoid rebound hot flashes that may be severe. If hot flashes recur, estrogen may be reinstituted and stopped at a later time.

What Does Government Approval Mean?

The federal regulatory bodies in the United States and Canada for drug approval are the US Food and Drug Administration (FDA) and the Health Products and Food Branch of Health Canada (HPFB). In the prescription drug approval process, a manufacturer must send scientific study evidence about a product to the appropriate regulatory body. Drug effectiveness, dosage, side effects, and possible risks are evaluated. If FDA or HPFB approval is given, the product may be offered on the market for the approved health indication(s). All advertising and education from the manufacturer must comply with federally approved prescribing information (packaging insert). Once a drug is available on the market, clinicians can also legally prescribe it for "off-label" use (use not government approved). An example would be prescribing the antidepressant venlafaxine (Effexor) to treat hot flashes.

(See Prescription Therapy for more, including contraindications and side effects.)

Other prescription drugs are sometimes used to treat hot flashes, but they are not government approved for this use. However, there is research to document potential relief from these drugs for some women. Combination estrogen-progestogen birth control pills may provide hot flash relief as well as effective contraception and other benefits, such as decreased risk for osteoporosis. Other hormones that may also provide relief of hot flashes include medroxyprogesterone acetate (Provera) and megestrol acetate (Megace). Nonhormonal drugs that may offer relief include antidepressants, such as paroxetine (Paxil), fluoxetine (Prozac), and venlafaxine (Effexor); antihypertensives, such as clonidine (marketed as Catapres in the United States and Dixarit in Canada); and the antiseizure

drug gabapentin (Neurontin). Each therapy has its own contraindications and side effects, so not all are appropriate options for all women. Other medications are being studied for treating hot flashes, so more options may be available in the future.

Treatment of insomnia should first focus on improving sleep routine.

Sleep Disturbances

Some women experience menopause-related sleep disturbances, especially if hormone changes provoke hot flashes or sweats during the night. Hot flashes seem to have the most adverse effect on sleep in women with surgery-induced menopause, regardless of age.

Lack of sleep or poor quality sleep can cause irritability and can make it more difficult to cope with menopause-related changes or, in the case of induced menopause, the woman's illness and/or treatment. Difficulty coping can lead to stress which, in turn, can have a negative effect on sleep.

Sleep is adequate when one can function in an alert state during desired waking hours. Most adults need between 6 and 9 hours of sleep each night. Treatment of sleep disturbances should first focus on improving the woman's sleep routine, such as avoiding heavy meals in the evening and adjusting levels of light, noise, and temperature. Avoiding alcohol, caffeine, and nicotine throughout the entire day, not just during the evening, can help increase sleep efficiency and total sleep time. Daily exercise can also help ease insomnia in many women, but exercising close to bedtime may have the opposite effect.

Maintaining a sleep-conducive environment (quiet, cool, dark) can also help. The bedroom should only be used for sleep and sexual activities. Those who do not fall asleep in 15 minutes should get up, leave the bedroom to engage in relaxing activities elsewhere, and return to bed when drowsy. This may be repeated as necessary. Having a regular sleep schedule will also help. This includes getting up at a consistent time, regardless of bed time, even on weekends.

When lifestyle changes fail to alleviate sleep disturbances, a clinician should be consulted to discuss other options and to rule out disorders, such as thyroid abnormalities, allergies, anemia, or apnea (breathing problems). Although estrogen is not government approved for treatment of insomnia, research has demonstrated that it may improve sleep in some women, mainly by reducing hot flashes and night sweats. Some herbal therapies, such as valerian, are reported to help sleep, but research is lacking. Prescription drugs that induce sleep may be used to break a cycle of insomnia, but only as a short-term solution. Women with serious sleep disturbances may benefit from referral to a sleep center.

Vulvovaginal Symptoms

During their life, at least one-third of all women will experience some symptoms in the vulvovaginal area (external female genitals and vagina). These symptoms range from mildly annoying to debilitating.

As women reach natural menopause, decreases in internal estrogen levels may result in vulvovaginal changes, although not all women develop troublesome symptoms. Estrogen loss causes tissues of the vulva and the lining of the vagina to become thin, dry, and less elastic – a condition known as atrophy. Vaginal secretions diminish, resulting in decreased lubrication. Loss of estrogen also results in a decrease in vaginal fluid and an

increase in vaginal pH, changing the healthy acidic environment to an alkaline one that is more susceptible to vaginal infection.

Without treatment, the problem may worsen, and the vaginal tissues can become inflamed, a condition called atrophic vaginitis. Fragile vaginal tissues are prone to injury, tearing, and bleeding during sexual intercourse or even a pelvic examination. The resulting pain can intensify to the point where sexual intercourse is no longer pleasurable or possible.

Women should not assume that their vulvovaginal problems are due to the reduced estrogen levels associated with menopause. These symptoms should be investigated by a clinician to identify the cause. All women at menopause and beyond should have a thorough, regular evaluation of vulvovaginal health, regardless of whether they have symptoms or are sexually active.

Menopause-related vulvovaginal symptoms usually don't become troublesome until several years after menopause. However, for those women who experience early menopause, this can occur at a younger age. Menopause induced by chemotherapy or pelvic radiation therapy can damage vaginal tissue, resulting in very severe vaginal symptoms (see Sexual Function).

Vaginal moisturizers are available without a prescription and may help maintain vaginal moisture in women with mild vaginal atrophy. Regular sexual stimulation, which promotes blood flow to the genital area, can also help maintain vaginal health.

If vaginal dryness is moderate or severe and nonprescription approaches are ineffective, estrogen therapy is recommended. Prescription estrogen therapy has been proven to restore the thickness and elasticity of vaginal tissues, restore healthy vaginal pH (acidity), and relieve vaginal dryness. Improvements usually occur within a few weeks of starting therapy, although relief of severe atrophy can take much longer. All estrogen dosage forms are effective and government approved for this use. Severe vaginal atrophy may respond more quickly to the vaginal forms of estrogen (cream, tablet, or ring) than to pills and patches. Short-term vaginal estrogen may even be an option for women with hormone-related cancer. Risks and benefits must be weighed in each case.

Sexual Function

A woman's sexual function is not only affected by vaginal health, but also by issues such as desire, arousal, and orgasm. Sexual feelings, desires, and activities are a natural part of life. Many women remain sexually active throughout their lives, although sexual desire decreases with age in both men and women. Lower desire is common in women in their late 40s and 50s as the declining hormone production at menopause contributes to changes in sexual function. The degree of impact varies from woman to woman.

Women who experience early menopause are at an age when they are more likely to enjoy frequent sexual activity and may be more disturbed by any sexual function changes. In today's youth-oriented society, women who have reached menopause may fear rejection by their partner. Women without a partner may feel as if they can no longer "compete" with their same-age peers, now that they have reached menopause.

Most women experiencing early menopause are able to enjoy a fulfilling sex life.

Women at menopause who are tired or irritable from hot flashes and night sweats may also notice a decrease in desire for intimacy. Furthermore, as women age, declining androgen levels (primarily testosterone, a hormone partially produced by the ovaries) can result in reduced sexual drive.

Induced menopause may result in a dramatic decline in androgen. In addition, women who undergo cancer treatment often have additional emotional concerns that may affect their sexual desire.

After a period of adjustment, however, most women experiencing early menopause are able to enjoy a fulfilling sex life. In the meantime, knowing what to expect during this time of change may make coping easier.

Many factors influence sexual function, including the following:

- Previous attitudes often dictate a woman's view of sexuality as she ages. In general, women who enjoyed sex in their younger years continue to do so as they age.
- Having no available partner or a partner who has lost interest in sex or has a decreased capacity for sexual activity.
- Stressors, such as family and relationship issues.
- Health conditions related to disease or surgery or to associated conditions, such as sleep disturbances, fatigue, incontinence, and depression, can affect sexual desire or result in sexual avoidance.
- Medications, such as those for high blood pressure and depression, can create problems with sexual desire and orgasmic capacity.
- Changes in the vagina brought on by falling estrogen levels at menopause can make intercourse painful, which may lead to avoidance of sexual activity.

Surgery-Induced Menopause

Surgical procedures (for cancer or benign conditions) that cause early menopause vary greatly in their effects on the vagina. Some have no direct effect on vaginal tissues, while others include removal of a part of the vaginal walls or involve vaginal reconstruction. Prior to surgery, the woman should talk to her clinician to find out if this will occur, and what can be done to alleviate vaginal effects after the surgery.

Sexual function after surgery-induced menopause also may be affected by a range of other factors, including pain or fear of pain (on the part of the woman and her partner). Women may also experience a loss of sexual desire due to the abrupt decline in androgen levels after removal of the ovaries. A woman may feel unattractive and may avoid initiating sexual encounters after a surgical procedure, such as removal of a breast or the uterus. Likewise, her partner may avoid intercourse, fearing that sexual activity will cause her pain. Other issues, such as stress and fears or preoccupation with long-term health, can have an impact on sexual desire. Also, problems with vaginal lubrication can lead to painful intercourse and avoidance of subsequent sexual activity.

Hysterectomy typically has no effect on sexual function, although some women may notice a slight change in sensation during intercourse and orgasm. Women and their partners need reassurance that removal of the uterus does not mean losing sexual desire

and femininity. In fact, many women have improved sex lives after hysterectomy due to relief from pain and bleeding, and the lack of need for birth control. However, hysterectomy may result in disruption of blood flow to the ovaries, causing them to shut down prematurely, which lowers the levels of estrogen and androgen.

Chemotherapy-Induced Menopause

The side effects of chemotherapy – including extreme fatigue and nausea – can dramatically reduce sexual desire. It is difficult for a woman to feel sexual when she doesn't feel physically well. Some chemotherapy drugs can irritate the vaginal lining, which often becomes dry and inflamed. Also, yeast infections are common during chemotherapy, especially in women taking steroids or strong antibiotics. Effective treatments are available for these problems. Weight changes during chemotherapy, as well as hair loss and other physical changes, can have a negative effect on body image. Women may feel less comfortable about being intimate with a partner.

Depending on the extent of the ovarian damage caused by chemotherapy, the ovaries may continue to produce low levels of testosterone after treatment. If testosterone levels decline significantly, a loss of sexual desire may occur, although the ability to obtain pleasure from touching remains. In some cases, intimacy takes on a new meaning. Partners may feel closer to each other and can experience pleasure and comfort from touching and cuddling.

Pelvic Radiation-Induced Menopause

As with chemotherapy, the extent of the ovarian damage caused by radiation will determine if the ovaries are able to continue to produce low levels of androgen after treatment. If not, loss of sexual desire may occur.

Pelvic radiation can cause vaginal itching, burning, and dryness. The vagina may feel tender during treatment and for a few weeks afterwards. The walls of the vagina may become tough and fibrous, and may lose the ability to stretch. Pelvic radiation can also make the vaginal lining thin and fragile and prone to vaginal sores or ulcers. Vaginal scarring from radiation therapy can shorten the vagina, making intercourse impossible. Formation of scar tissue can be prevented by stretching the vaginal walls, either by having sexual intercourse at least three or four times per week or by using a vaginal dilator or fingers to stretch the vagina. Women may also experience pain due to changes in the vaginal size or moistness. Pain can interfere with a woman's ability to reach orgasm. It can also cause a problem called "vaginismus," in which the muscles around the opening of the vagina become tense, closing off the vagina and preventing penetration. Effective treatments are available for these problems, and women should talk to their healthcare providers about which treatments will be the best for them.

During pelvic radiation treatment, some women are advised not to have intercourse. Most women are able to resume sex within a few weeks after treatment ends. Women and their partners sometimes discover new intimacy after pelvic radiation therapy, as they continue to find pleasure in touching and cuddling, and explore new ways to be close until (and after) intercourse is resumed.

Important Sexual Function Issues

- Types of sexual relations
- Types of sexual activities
- Relationship quality
- Number of sexual partners, past and present
- Sexual orientation
- Habits related to self-stimulation
- Ability to achieve orgasm
- Changes in sexual interest
- Changes in arousal
- Pain during vaginal penetration
- Adherence to safer sex practices
- History of and testing for sexually transmitted infections
- Birth control method(s) used
- Satisfaction level with current sex life
- Medications and remedies used, both prescription and nonprescription

Treatment

Many women who enjoyed and were comfortable with sexual relations before early menopause, whether natural or induced, continue to experience sexual pleasure afterward. The healthcare provider may ask various questions to determine if treatment is needed (see Box above).

The hectic pace of life can interfere with emotional and physical intimacy, and couples may take their sex lives for granted. Some couples fail to make time for quality sexual encounters. Men may experience a lack of sexual interest or difficulty achieving erection or ejaculation, and may need more manual or oral stimulation of the penis. Women, too, may need increased time and stimulation for arousal, adequate lubrication, and orgasm. Foreplay time can be extended to accommodate longer arousal time. The sexual routine can be changed, such as having sex in the morning when energy levels are higher, or experimenting with positions other than the standard "missionary" position.

Intercourse does not have to be the primary sexual activity. More attention can be devoted to other sexual behaviors, such as oral sex, massage, sensual baths, manual stimulation, and caressing. Masturbation can be explored as an alternative to intercourse or enjoyed by women without partners. Using a vibrator or dildo may enhance sexual pleasure. With all sexual issues, good communication between partners is important.

Understanding these factors, making adjustments, and getting any necessary medical treatments can alleviate anxiety and improve sexual activity.

Some nonprescription and prescription treatments are available to help improve sexual function. Vaginal lubricants can decrease friction during sexual intercourse; only water-soluble (not oil) products should be used (see Nonprescription Remedies). If vaginal dryness is moderate or severe and nonprescription approaches are ineffective, estrogen therapy is an option, as lack of estrogen is often the cause of the problem. Vaginal estrogen products may be appropriate for some women who have had certain cancers, although this is not recommended by all cancer specialists.

Drug therapy to improve sexual drive or arousal, especially in women, is a field still in its infancy. No drug product is currently government approved for this indication in women, although many studies are being conducted. A small number of studies have produced conflicting results on estrogen's ability to improve sexual drive or arousal. Estrogen probably does not improve sex drive, although it can relieve discomfort or pain from vaginal atrophy. Adding androgen to estrogen therapy may be helpful in boosting sexual desire. Other prescription drugs and nonprescription therapies advertised to improve female sexual drive or arousal are not recommended because of a lack of data on safety and effectiveness. Also, it is not advisable for women to use any product advertised for improving male sexual function.

While many women find it difficult to discuss the intimate aspects of their sexual relations, healthcare providers are better able to help them achieve optimal sexual health after an open discussion on sexual history and lifestyle. Referral to a specialist in sexual counseling is sometimes helpful.

Protection Is Essential

Regardless of menopausal status, women still require protection from sexually transmitted infections (STIs), sometimes called "sexually transmitted diseases" or STDs. These include syphilis, chlamydia, gonorrhea, hepatitis B, and HIV (the AIDS virus). Some infections are transmitted even when protection is used. This includes herpes, which is primarily an infection without any symptoms and is transmitted in the absence of visible ulcers.

The most common sexually transmitted infection is the human papillomavirus (HPV), which is usually cleared to undetectable levels by an individual's immune response.

Safer Sex Guidelines

- Choose partners selectively.
- Discuss sexual history with a partner; don't let embarrassment compromise health.
- Always insist that male partners use a latex condom for genital, oral, and anal sex, unless in a long-term, mutually monogamous relationship. Never use petroleum-based products (Vaseline, baby oil) to lubricate condoms because they can damage the condom, potentially causing a leak.
- Keep medically fit and have a regular physical exam, including a Pap smear and tests to identify STIs, if indicated.
- If exposed to an STI, or after a confirmed diagnosis, urge any partner(s) to be examined and treated.

Cervical cancer is a rare occurrence after HPV infection, when high-risk types persist. About 1% to 2% of women develop genital warts after exposure to certain low-risk types of HPV. It is transmitted through skin-to-skin contact, even without actual intercourse.

The risk of contracting an STI is a lifelong concern for sexually active women who are not in a long-term, mutually monogamous relationship. STIs are more easily transmitted from man to woman than from woman to man. If exposed, women are twice as likely as men to contract gonorrhea, hepatitis B, and HIV. What's more, STIs are less likely to produce symptoms in women and, therefore, are more difficult to diagnose until serious problems develop.

Sexually active postmenopausal women with vaginal atrophy may be at increased risk for STIs because the delicate vaginal tissue is prone to small tears that can act as pathways for infection. Following safer sex guidelines is important for all women (see Box above).

Although lesbians have fewer STIs than heterosexual women, STIs can be passed from woman to woman. Additional precautions include the following:

- Prevent transfer of any body fluids, including menstrual blood and vaginal fluids, from cuts or other openings;
- During oral or vulva-to-vulva sex, cover the partner's vaginal area with a latex barrier to avoid contact with vaginal secretions;
- Avoid sharing sex toys and either clean them in hot, soapy water or use a new condom before switching users.

Urinary Concerns

Urinary symptoms, including incontinence (persistent, involuntary leaking of urine) and recurring urinary tract infections (UTIs) become more common with aging. These symptoms may be partially affected by menopause. Lack of estrogen can cause thinning of the lining of the urethra, the outlet for the bladder.

Incontinence

Women who reach menopause may experience one or more of the following conditions:

- Frequency – the need to urinate more often;
- Nocturia – a need to get out of bed to urinate several times during the night;
- Stress incontinence – urine leakage upon coughing, laughing, sneezing, or lifting;
- Painful urination – sometimes the result of a UTI;
- Urgency – an urgent need to urinate;
- Urge incontinence – the urgent need to urinate and the inability to get to a toilet on time, resulting in involuntary loss of urine.

Stress incontinence is most common around menopause and typically does not worsen with aging, but the incidence of urge incontinence appears to increase with the number of years after menopause.

In addition to aging and decreased levels of estrogen, other possible factors contributing to urinary incontinence are the following:

- High volume of fluid intake or drinking late at night;
- Infections of the bladder or of the urethra;
- Weakening of the pelvic muscle, nerves, and ligaments due to natural aging or previous damage from childbirth injury, particularly deliveries requiring use of forceps;
- Irritation of the bladder with smoking, drinking alcohol or caffeine, eating high-acid foods (such as grapefruit or tomatoes);
- Certain prescription medications, such as diuretics and some tranquilizers;
- Being significantly overweight;
- Other medical conditions, such as stroke, diabetes mellitus, and the nerve disorder multiple sclerosis.

Associated Problems

Fecal incontinence (involuntary leaking of feces) has been observed in up to one-quarter of women who have urinary incontinence. This condition may be related to lack of estrogen or to aging (or both).

Diminished estrogen levels may also play a role in urinary tract infections. Without estrogen, the urethra shortens, minimizing its defense against bacteria. These infections are also associated with urinary incontinence. This could be caused by the use of containment pads, which can provide an

environment for bacterial growth, and decreased intake of water and other fluids, which encourages the buildup of bacteria in the bladder.

Treatment

Today, there are many strategies to treat incontinence (see Box) and more are in development. The best option depends on the type and cause of incontinence and the impact of incontinence on quality of life. An effective approach teams the woman with a physician and a continence educator (typically a nurse) for coaching and support. When urinary incontinence does not improve with initial treatment, a physician with expertise in female urology or urogynecology should be consulted. A specialist is also recommended when there is a complex condition, such as a neurological disease, or when surgery is being considered.

Urinary tract infections are treated with antibiotics. Studies have shown that estrogen helps prevent recurrent UTIs in postmenopausal women. Nondrug strategies for preventing UTIs include the following:

- Void within 1 hour of the urge to urinate;
- Wipe from front to back after a bowel movement to prevent spreading bacteria;
- Change underwear daily;
- Wear underwear with a cotton crotch to minimize moisture retention;
- Avoid tight jeans and other pants (including pantyhose) that hold in heat and moisture;
- Decrease use of hot tubs and highly chlorinated pools;
- Avoid perfumed toilet paper, powders, and bubble baths;
- Do not use feminine hygiene products that irritate the urethra;
- Do not consume foods and beverages that are bladder irritants, such as coffee, tea, and alcohol;
- Drink cranberry juice to increase the acidity of the urine in the bladder.

Strategies for Managing Urinary Incontinence

DRINK WATER. Urine is more dilute and less irritating to the bladder when ample water is consumed.

AVOID BLADDER IRRITANTS. Certain foods and beverages high in caffeine (such as coffee, tea, cola drinks, or chocolate) or acid (such as grapefruit, orange, tomato, coffee, or soft drinks) can irritate the bladder and cause incontinence.

GOOD HYGIENE. Keep genitals clean. Avoid wearing a soiled urine or fecal containment pad for long periods.

KEGEL EXERCISES. Urogenital muscle exercises that are sometimes helpful for stress incontinence.

VAGINAL CONES. Small cone-shaped devices placed and held in the vagina to help a woman determine which muscles to contract and relax for Kegels.

ELECTRICAL STIMULATION. Painless therapy to retrain the muscles used in urination.

BIOFEEDBACK. Training the senses to control bodily functions.

TIMED VOIDING. A technique for urge incontinence in which a woman urinates at regular, short intervals, then extends the intervals between voiding.

MEDICATIONS. Several are available for different causes and types of incontinence.

SURGERY. For complex problems and to correct anatomical defects.

Some health changes at midlife may be more related to aging than menopause.

Other Health Changes

Women who experience menopause at midlife often report other health changes that may be more related to aging than menopause. These changes include weight gain, heart palpitations, joint pain, headache, and changes in the skin, eyes, hair, teeth, and mouth. It's not known how early menopause affects these health conditions.

Weight Gain

Beginning in their 40s, many women gain weight. Midlife weight gain appears to be mostly related to aging and lifestyle, although menopause itself has not been ruled out.

Weight gain is often accelerated in women with breast cancer who reach menopause.

Exercise seems to have the most beneficial effect on minimizing fat gain and maintaining muscle, thereby reducing body size and burning more calories. Any woman who is looking for a higher muscle-to-fat ratio will find more rewarding results from resistance-type exercises, such as weight lifting.

Heart Palpitations

Some scientific evidence links rapid, irregular heart beat (palpitations) with diminished estrogen levels. An increase in heart rate can occur during a hot flash, which some women may interpret as a heart problem. Palpitations may also be the result of thyroid disease or anxiety experienced with mood changes or from more serious psychological upset. It is unlikely that palpitations experienced around menopause are related to serious heart disease. Nevertheless, women should report heart palpitations to their healthcare provider so serious illness can be ruled out.

Joint Pain

Another change often noticed at midlife is painful joints. Osteoarthritis, the most common form of joint disease, increases in frequency with aging. It particularly affects women after menopause, even if it is reached early. Considerable research is ongoing to clarify the relationship between hormones and arthritis. Suffering from joint pain is not inevitable. A woman's healthcare provider can recommend the best type of exercises to help alleviate pain and, if needed, various therapy options.

Headache

Studies suggest that menopause may play a role in headaches. There are several types of headaches, as well as several potential causes. Women at increased risk for menopause-related hormonal headaches are those sensitive to hormone fluctuations, usually indicated by a history of headaches around menstrual periods or when taking oral contraceptives.

Headaches related to hormone fluctuations at perimenopause can sometimes be relieved through hormone therapy that attempts to level the fluctuations. With migraine headaches, estrogen may make them better or worse. Evidence indicates that some types of progestogen therapy (used in some contraceptives and as menopause therapy with estrogen in women with a uterus) may aggravate headaches.

Skin Changes

The skin actually ages rather well, eventually undergoing normal loss of collagen and elasticity, which creates slight sags and wrinkles. It also becomes more dry and flaky with age. Exposure to sunlight, however, causes more marked aging. In smokers, the effects of aging on the skin are more

pronounced, particularly with wrinkles around the lips and dark circles under the eyes.

Hormones play an important role in skin health. Diminished levels of estrogen at menopause, including early menopause, contribute to a decline in skin collagen and thickness. This decline is more rapid in the years right after menopause than in later ones.

Estrogen therapy may have beneficial effects on skin, but it cannot reverse genetic aging or sun damage, or change any risk of skin cancer. Some women using high doses of estrogen may have increased facial skin color that persists even after therapy is stopped.

The effects of androgen, even at normal levels, can increase acne more in adult women than in adolescents. The adult variety is mostly on the lower face, particularly along the chin and neck. Some women who experiencing natural menopause will develop acne (especially those who had acne during their teen years), usually due to an increase in the ratio of the hormone androgen to estrogen. However, some women who experience surgical menopause have less acne because their internal androgen levels plummet after the ovaries are removed.

Adult acne rarely responds to teenage acne therapies (lotions, soaps, antibiotics). Oral contraceptives may help with adult acne. At least two oral contraceptives (Estrostep, Ortho Tri-Cyclen) have been FDA-approved for this use. In Canada, the oral contraceptive DIANE-35 is approved for the treatment of severe acne.

A small percentage of menopausal women report irritating sensations to the skin, ranging from severe itching to phantom symptoms of "ants crawling on their skin." This condition, called "formication" (from the Greek word for ant), is difficult to diagnose and even more difficult to treat. There are no scientific studies to guide clinicians. Sometimes hormone therapy or antihistamines will help.

Skin damage can be prevented by protecting it through use of a good sunscreen. However, sunscreen blocks vitamin D absorption from the sun, so women who use sunscreens may need to take a vitamin D supplement to obtain the recommended amount. Drinking plenty of water helps keep skin hydrated and healthy. In addition to avoiding smoking, other skin-healthy habits include avoiding stress and getting adequate exercise and sleep. Dry skin is best prevented by avoiding hot, soapy showers and baths. The use of bath oil or heavy lotion applied to wet skin immediately after bathing will help skin stay lubricated and more resistant to damage.

Hair Changes

Women experiencing natural menopause can have excessive hair growth in areas of the body where hair follicles are most androgen-sensitive, such as the chin, upper lip, and cheeks. This condition is thought to be due to the imbalance of androgen to estrogen associated with the decreased estrogen levels. Women often report a large "rogue hair" on their chin that seems to grow to a great length almost overnight. Hair thinning, a condition that is typically genetic, may also occur in response to a shift in the balance between estrogen and androgen. However, improvement has been observed in women experiencing surgical menopause because the internal androgen levels fall when the ovaries are removed.

Androgen therapy may result in hair loss. Some women also report hair loss with estrogen therapy, although others report estrogen slows hair loss. Much more

Early menopause often gives rise to concerns about body image, sexuality, and infertility.

information is needed about how to treat hair loss. Finding the cause is often difficult. Women suffering from severe hair loss should consult a skin specialist (dermatologist).

Getting older increases the likelihood for hair to become gray and more brittle. Eating a healthy diet, adding a daily multivitamin, and avoiding harsh chemicals and sunlight that dry the hair will help keep hair healthy.

Eye Changes

Various eye changes may occur during times of fluctuating hormone levels, such as during the menstrual cycle, pregnancy, and perimenopause. Eyesight and eye shape may be altered, making contact lenses more difficult to tolerate.

After menopause, dry eyes is one of the most common symptoms reported, along with light sensitivity, blurred vision, increased tearing, tired eyes, swollen or reddened eyelids, or scratchiness. Therapies are available to help relieve dry eye syndrome. If symptoms persist, an eye specialist (ophthalmologist) should be consulted.

Most women in their 40s have an increased need for corrective lenses for reading. Also becoming more common with age are eye diseases, such as cataracts, glaucoma, and macular degeneration. Regular eye checkups are helpful in finding the disease at a more treatable stage.

Mouth & Dental Changes

After menopause, even early menopause, women may have an increase in tooth loss, need for dentures, and gingival (gum) bleeding and inflammation. Good dental hygiene and regular checkups become more important than ever. Some dental changes may be related to diminished levels of estrogen. Often, tooth loss is a sign of an underlying bone disorder, such as osteoporosis. A woman's primary healthcare provider should be advised of any changes observed by her dentist and other dental health professionals.

Emotional Health

Regardless of age, the emotional issues that may arise in relation to early menopause vary greatly from one woman to another, and depend on a wide variety of factors. Early menopause often gives rise to concerns about body image, sexuality, and infertility, or a feeling of growing old prematurely. For women who experience induced menopause at a young age – especially as a result of treatment for a serious, possibly life-threatening illness – these feelings may be greatly intensified. These women must also cope with the underlying disease, condition, or treatment that induced menopause.

Emotional and physical health are closely linked. Physical illness or discomfort can cause emotional distress, and emotional upset can negatively affect the body's ability to heal and remain healthy.

Concerns about Infertility

Infertility related to early menopause can cause a range of emotions. These perfectly normal emotions may include the following:

- Feelings of failure and even guilt over the end of fertility at an earlier age than expected;
- A lasting feeling of grief and loss for the children a woman hoped to have, similar to that experienced after the death of a loved one;
- Feelings of jealousy and resentment toward peers who are still able to have children, and guilt over having those feelings;