National Cancer Institute

Division of Cancer Epidemiology and Genetics

Clinical Genetics Branch

in cooperation with:

The Gynecologic Oncology Group

and

The Cancer Genetics Network

How to Deal with Surgical Menopause: Questions and Answers

An Information Sheet for Women Enrolled in the Ovarian Cancer Prevention and Early Detection Study (GOG-0199)

Some women who are at high risk of ovarian cancer decide, with their health care providers, to have their ovaries removed. This operation, Risk Reducing Salpingo-Oophorectomy (RRSO), has been shown to reduce the risk of ovarian cancer.

This information sheet was created to help you understand the symptoms you may experience after having your ovaries removed.

Ovaries are a woman's main source of the female hormones estrogen and progesterone. These hormones influence the development of a woman's breasts, body shape, and body hair. They also have roles in the menstrual cycle and pregnancy. If you haven't gone through menopause, having both ovaries surgically removed will cause surgical menopause. Surgical menopause, like to natural menopause, may cause symptoms such as hot flashes. The symptoms are caused by the sudden loss of female hormones. But every woman is different, and some women have few or no symptoms. And for many women, most symptoms go away or diminish with time.

Talking with your health care providers about your symptoms may be helpful in developing a plan to control or eliminate these menopause-related issues. Many women write down symptoms and questions before their office visit, to avoid forgetting issues of particular concern. Please refer to the list on the last page of this information sheet for a list of suggested questions and symptoms that you may wish to discuss with your health care provider. The following information sheets were created to provide more detailed information about specific symptoms:

- **Managing Hot Flashes and Night Sweats;**
- **Preventing Vaginal Dryness and Painful Intercourse;**
- **Preventing Osteoporosis;**
- **Dealing with Urinary Symptoms; and**
- **Dealing with Decreased Sex Drive.**

We encourage you to share this information with your health care providers, to help develop a treatment plan together.

1. What is the difference between natural menopause and surgical menopause?

Natural menopause

Menopause (the "change of life") is a natural process that occurs in a woman as part of normal aging. Symptoms such as hot flashes, night sweats, vaginal dryness, pain with sexual intercourse (dyspareunia), and sleep disturbance have been linked to menopause. The symptoms of natural menopause are gradual, as the ovaries slowly stop producing hormones. The lower hormone levels cause menstrual periods to stop. Doctors define natural menopause as the absence of menstrual periods for 12 consecutive months (without a known cause, such as surgery, illness, or medication). The average age for menopause is 50; most women go through natural menopause gradually between the ages of 45 and 55.

Surgical menopause

If a woman is still having periods (has not gone through natural menopause), then surgery to remove the ovaries (RRSO) may cause some women to experience more severe symptoms than women going through natural menopause. So, premenopausal women who undergo RRSO may have symptoms that require treatment. However, every woman is different, and some women have few or no symptoms.

In addition, women who undergo either natural or surgical menopause may develop thinning bones, or osteoporosis, a condition which typically has no symptoms at all in its early stages.

2. What symptoms can I expect after surgery to remove both of my ovaries?

After RRSO surgery, the most common symptoms are:

- Hot flashes
- Night sweats
- Vaginal dryness

A woman's symptoms after surgical menopause may be more severe than the symptoms during natural menopause. Your health care providers can suggest ways to relieve these symptoms.

3. Can Menopausal Hormone Therapy help with these symptoms?

Menopausal Hormone Therapy (MHT) is the use of medications (or medical products) that contain estrogen and/or progesterone to replace the hormones previously made by the ovaries.

Studies have shown that products that contain estrogen or that contain estrogen and progesterone are effective for treating moderate to severe hot flashes, night sweats, and vaginal dryness.

The Food and Drug Administration (FDA) has approved MHT for hot flashes, night sweats, and vaginal dryness. The FDA also has approved MHT for the prevention of thinning bones (osteoporosis) associated with menopause.

4. What kinds of Menopausal Hormone Therapy products are available?

There are many products on the market. Women may use estrogen alone or estrogen combined with progesterone. Estrogen may be used with progesterone in women with a uterus (women who have not had a hysterectomy) to reduce the risk of developing uterine (endometrial) cancer. Progesterone may not be necessary in women who have had a hysterectomy to remove their uterus. MHT is available in pills, transdermal patches applied to the skin, estrogen gels, and vaginal creams, tablets, and rings.

5. What are the risks associated with Menopausal Hormone Therapy?

Women who use MHT (estrogen and/or progesterone) may be at increased risk of heart attack, stroke, blood clots, breast cancer, and uterine cancer. For women without a uterus, estrogen alone does not appear to increase the risk of heart disease, but it does appear to increase the risk of stroke. The Women's Health Initiative (WHI) is a research program that may provide more information about these issues (see question 12: How can I get more technical information to share with my health care providers?).

Common side effects of MHT include bloating, breast tenderness or enlargement, headaches, mood changes, and nausea. Women with a uterus may experience abnormal vaginal bleeding or spotting, symptoms which should be reported to your health care provider immediately.

6. How can I figure out if Menopausal Hormone Therapy is right for me?

Although MHT is the most effective FDA-approved treatment for hot flashes, night sweats, and vaginal dryness, the potential risks may outweigh the benefits for some women. You should talk to your health care providers about your personal and family medical history. You and your health care providers can decide which treatment is best for you.

If MHT is appropriate, experts suggest that health care providers prescribe the lowest effective dose for the shortest time needed to relieve the symptoms. A low dose over a short time reduces the risk of side effects.

7. What if I have a history of Breast Cancer?

Many women who are at increased genetic risk of breast and ovarian cancer are breast cancer survivors themselves. Menopausal symptoms are common in this special group of women, yet despite the frequency of symptoms and their potential impact on quality of life, information about the safety and effectiveness of various treatments is very limited. There is concern among breast cancer survivors and their health care providers that the use of MHT to treat menopausal symptoms may increase the risk of breast cancer recurrence and/or the development of a new breast cancer.

In addition, many breast cancer survivors take tamoxifen (an estrogen-blocking medication) to prevent cancer recurrence. The safety (related to interfering with tamoxifen's potential benefits) and effectiveness (related to controlling symptoms due to low estrogen levels) of the combination of tamoxifen and MHT is unknown. It is also unclear whether the presence or absence of estrogen or progesterone receptors in the breast cancers of such women can be used to make individualized decisions regarding the use of MHT.

For these reasons, MHT is generally not considered for the *initial* management of menopausal symptoms in women with a prior history of breast cancer. Usually, non-hormonal treatments are tried first. However, if other interventions have failed, and the patient has been clearly informed of potential risks and benefits, MHT may be considered for women with significant symptoms related to low estrogen levels. The use of estrogen cream applied directly to the vaginal lining, or low-dose vaginal estrogen rings for vaginal dryness, is generally considered safe after breast cancer, even for women who have not undergone RRSO or hysterectomy. This is believed to be true because only very small amounts of estrogen actually enter the bloodstream when using low-dose vaginal estrogens.

8. What else can I do about hot flashes and night sweats?

There are options other than MHT. Your health care providers can suggest other medications that help treat hot flashes and night sweats.

You also may consider making simple lifestyle changes including:

- dressing in layers
- using a fan
- choosing cold food and drinks
- sleeping in a cool room

Many women find it helpful to quit smoking, exercise regularly, and avoid spicy and hot foods, caffeine, and alcohol.

See ***"Managing Hot Flashes and Night Sweats"*** for more detailed information that you may want to share with your health care providers.

9. What else can I do about vaginal dryness?

There are options other than MHT. Your health care providers can suggest other medications that help treat vaginal dryness. Some women find that a vaginal moisturizer or lubricant helps.

See ***"Preventing Vaginal Dryness and Painful Intercourse"*** for more detailed information that you may want to share with your health care providers.

10. What can I do to prevent osteoporosis?

To prevent thinning bones after surgical menopause, health care providers recommend that women:

- Take calcium and vitamin D supplements
- Take part in weight-bearing exercise, to promote new bone growth
- Quit smoking
- Limit consumption of alcoholic beverages to no more than one drink per day

Your health care providers may prescribe MHT, calcitonin, bisphosphonates, or other medications that reduce the risk of thinning bones.

To check your bones, your health care providers may order bone density scans every 1 or 2 years.

Because you may be at higher risk of fractures after menopause, you should be extra careful to protect yourself from falling.

See *"Preventing Osteoporosis"* for more detailed information that you may want to share with your health care providers.

11. What other problems might I have after surgical menopause? What can I do about them?

Scientists are not sure whether other symptoms are caused by loss of female hormones. Some symptoms commonly attributed to menopause may actually be a normal part of aging. For example, it is uncertain whether urinary incontinence (leaking from the bladder), increased urinary tract infections, and less interest in sex or changes in sexual response, are linked to menopause in some women. Also, some think that memory loss, back pain, joint stiffness, and fatigue might be associated with menopause. Although it is a common belief that menopause can bring changes in mood, some research shows that mood symptoms observed during the years of natural menopause are likely related to prior depression, life stress, and general medical health, rather than loss of female hormones.

Urinary Symptoms

After menopause, some women have more frequent urinary tract infections. Your health care providers can suggest medications that may help.

Some women have trouble with urine leaking from the bladder (incontinence). Muscle training and bladder training may help.

Women with urinary symptoms may wish to:

- Avoid caffeine
- Drink pure cranberry juice
- Empty the bladder completely
- Wipe front to back after using the toilet
- Avoid feminine hygiene products that contain deodorants
- Bathe the area well every day, especially before and after sex
- Visit a urologist (a doctor who specializes in bladder problems)

See *"Dealing with Urinary Symptoms"* for more detailed information that you may want to share with your health care providers.

Sexual Problems

After menopause, some women have less interest in sex, pain with sexual intercourse (dyspareunia) due to vaginal dryness, or changes in sexual response. Your health care providers may have suggestions to help this situation.

See *"Dealing with Decreased Sex Drive"* for more detailed information that you may want to share with your health care providers.

12. How can I get more technical information to share with my health care providers?

A recent National Institutes of Health (NIH) conference focused on identifying menopausal symptoms and evaluating treatments for them. This conference forms the basis for much of the information found in our information sheets, although a lack of information regarding the benefits and risks associated with menopausal symptom management for women at high risk of ovarian cancer was identified. We supplement their findings with a review of the literature and our own knowledge gained by caring for post-menopausal women.

The following information sheets were created to provide more detailed information about specific menopausal symptoms, and are available on our website, *http://ovariancancer.gog199.cancer.gov/* :

- "Managing Hot Flashes and Night Sweats"
- "Preventing Vaginal Dryness and Painful Intercourse"
- "Preventing Osteoporosis"
- "Dealing with Urinary Symptoms"
- "Dealing with Decreased Sex Drive"

In addition, more technical information can be obtained from:

➤ **National Cancer Institute Fact Sheet: Menopausal Hormone Use and Cancer – Questions and Answers.**
This patient oriented publication summarizes the National Cancer Institute's current recommendations regarding the use of menopausal hormone therapy.
http://www.cancer.gov/cancertopics/factsheet/Risk/menopausal-hormones

➤ **National Institutes of Health State-of-the-Science Conference Statement: Management of Menopause-Related Symptoms.**
This technical journal article summarizes research findings about menopause.
http://consensus.nih.gov/2005/2005MenopausalSymptomsSOS025html.htm

➤ **The Women's Health Initiative (WHI)**
This research program addresses the most common causes of death, disability, and poor quality of life in post-menopausal women.
http://www.nhlbi.nih.gov/whi/

➤ **Health Care Maintenance for Women Undergoing Ovarian Surgery (GOG-0199).**
This brochure can help you make decisions about how to manage your health after surgery.
http://ovariancancer.gog199.cancer.gov/

➤ **Facts About Menopausal Hormone Therapy**
This National Heart, Lung and Blood Institute publication is available at
http://www.nhlbi.nih.gov/health/women/pht_facts.htm

➤ **Drug Information: Estrogen and Progestin.**
This Medline Plus website provides information about MHT.
http://www.nlm.nih.gov/medlineplus/druginfo/medmaster/a601041.html

Possible Questions and Symptoms Related to Surgical Menopause

Issues you may want to Raise with Your Health Care Provider:

- ❑ Is MHT (Menopausal Hormone Therapy) right for me?
- ❑ What are the risks and benefits associated with MHT ***for me***?
- ❑ What kind of side effects am I likely to have from MHT?
- ❑ Could estrogen applied directly to the inside of the vagina ("intra-vaginal estrogen") be used to treat my symptoms, instead of estrogen taken by mouth?
- ❑ Should I have a baseline bone density test done prior to RRSO?
- ❑ How often should my BMD (bone mineral density) test be repeated?
- ❑ Is my blood pressure normal?
- ❑ Is my blood sugar normal?
- ❑ Is my cholesterol normal? How often will you check my blood cholesterol, lipids?
- ❑ Please explain to me what these results of my tests mean, and help me understand what I can do to avoid medical problems related to early menopause.
- ❑ How often should I be getting breast mammograms?
- ❑ Should I be getting breast MRI (magnetic resonance imaging) to screen for breast cancer? How often?
- ❑ Is a daily aspirin appropriate for me?
- ❑ Is there a non-hormonal approach to managing my symptoms?
- ❑ Is the complementary/alternative medical treatment I am considering safe for me to take?
- ❑ Can you prescribe a smoking cessation program for me?

Symptoms to Report to your Health Care Provider:

- ❑ A change in findings on breast self-examination (for example, a new breast lump)
- ❑ Hot flashes (take your diary with you to your appointment)
- ❑ Sleep disturbance
- ❑ Mood changes, especially irritability
- ❑ Leakage of urine with coughing, sneezing or laughter
- ❑ Frequent bladder/urinary tract infections
- ❑ Pain on intercourse
- ❑ Vaginal dryness
- ❑ Decreased desire for sex (libido)

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Managing Hot Flashes and Night Sweats

For Women and their Health Care Providers Seeking more Information after having read "How to Deal with Surgical Menopause: Questions and Answers"

Many postmenopausal women have hot flashes and night sweats. Typically, women describe these symptoms as a sudden increase in perceived body temperature that occurs along with sweating, flushing, and occasionally, heart palpitations (irregular heartbeats).

Hot flashes are more common in black and Latin American women than they are in white women, and are less common in Chinese and Japanese women (1). Cigarette smoking increases the risk of experiencing hot flashes. For most women, hot flashes resolve over a period of several years, but in a small minority (10-15%) they may persist for extended periods of time (1).

These symptoms frequently occur at night. Women report waking up drenched in sweat. When severe, these night-time symptoms can interfere with restful sleep. Hot flashes can significantly reduce quality of life for postmenopausal women, both as a direct result of the symptoms, and indirectly, from insufficient sleep.

Women who undergo premature menopause, as a result of RRSO (risk-reducing salpingo-oophorectomy) surgery, are usually younger than women who undergo natural menopause; these younger women may experience hot flashes or night sweats that are more bothersome than those that occur at the time of natural menopause.

A recent National Institutes of Health (NIH) conference focused on identifying menopausal symptoms and evaluating treatments for them (2). This conference forms the basis for much of the information found in these information sheets, although its report commented that there is a lack of detailed information regarding the benefits and risks associated with menopausal symptom management for women at high risk of ovarian cancer. We have supplemented the conference findings with a review of the literature and our own knowledge gained by caring for postmenopausal women.

You may wish to share these research findings with your health care provider so that you can develop a hot flash treatment plan together.

Menopausal Hormone Therapy

Menopausal hormone therapy (MHT) is the use of medications (or medical products) which contain estrogen and/or progesterone to replace the hormones previously made by the ovaries. MHT is the most effective Food and Drug Administration (FDA)-approved treatment for hot flashes and night sweats. Their use is associated with a 60% to 85% average decrease in the number of hot flashes (1). The goal of controlling these symptoms is to preserve quality of life, while minimizing health risks related to treatment. Information about MHT risks and benefits may be confusing and contradictory. To further complicate treatment decisions, we do not know yet whether women who undergo RRSO because they are at high genetic risk of cancer are more likely than other women to experience adverse outcomes from MHT. That's why careful, individualized decisions about treatments should be made, based on discussions between each woman and her health care provider.

Many women who are at increased genetic risk of breast and ovarian cancer are breast cancer survivors themselves. Menopausal symptoms are common in this special group of women yet, despite the frequency of symptoms and their potential impact on quality of life, information about the safety and effectiveness of various treatments is very limited. There is concern among breast cancer survivors and their health care providers that the use of MHT to treat menopausal symptoms may increase the risk of breast cancer recurrence and/or the development of a new breast cancer.

In addition, many breast cancer survivors take tamoxifen (an estrogen-blocking medication) to prevent cancer recurrence. The safety (related to interfering with tamoxifen's potential benefits) and effectiveness (related to controlling symptoms due to low estrogen levels) of the combination of tamoxifen and MHT is unknown. It is also unclear whether the presence or absence of estrogen or progesterone receptors in the breast cancers of such women can be used to make individualized decisions regarding the use of MHT.

For all these reasons, oral MHT is generally not considered for the initial management of menopausal symptoms in women with a prior history of breast cancer. Usually, non-hormonal treatments are tried first. However, if other interventions have failed, and the patient has been clearly informed of potential risks and benefits, MHT may be considered for women with significant persistent symptoms related to low estrogen levels. The use of estrogen cream applied directly to the vaginal lining, or low-dose vaginal estrogen rings for vaginal dryness, is generally considered safer after breast cancer, even for women who have not undergone RRSO or hysterectomy, since only very small amounts of estrogen actually enter the bloodstream when using low-dose vaginal estrogens.

Common Treatment Approaches for Preventing Hot Flashes and Night Sweats

MENOPAUSAL HORMONE THERAPY

General principles for MHT(3-6)

- Start at the lowest possible estrogen dose.
- If symptoms are not controlled, increase the dose of estrogen gradually, until a satisfactory result is achieved.
  - Doses as low as 0.5 mg of oral micronized estradiol, or 0.3 mg of conjugated equine estrogen (CEE), may provide effective relief.
  - For premature menopause following RRSO, some women may require higher doses, up to 2.5 mg CEE or 2 mg estradiol daily, for adequate symptom relief.
- Use MHT for as short a period of time as possible.
  - Hot flashes gradually decrease over time, and may eventually disappear. Periodically reassess the need for treatment, and attempt to reduce the dose or discontinue therapy completely, if possible.
  - Avoid using MHT for longer than 5 years or beyond age 50 (average age of natural menopause).

- Avoid abrupt discontinuation of MHT treatment; gradual tapering or weaning of the medication dose seems to be better tolerated.

Combination Oral (taken by mouth) Estrogen and Progesterone Therapy

If you still have your uterus and decide to take MHT, doctors typically prescribe estrogen along with progesterone, usually taken as a pill. Progesterone is used because it reduces the risk of developing estrogen-related endometrial (uterine) cancer (6-9). Progesterone is also available as a skin patch, an IUD (intrauterine device), a vaginal gel, suppository, or an injection.

Benefits

- MHT is the most consistently effective therapy for hot flashes and night sweats.

Risks

- The safety of MHT in women at increased genetic risk of breast and ovarian cancer is unknown.
- Recent evidence from the Women's Health Initiative study suggests that the combination of estrogen plus progesterone is associated with an increased risk of breast cancer.
- Doses equivalent to, or greater than, 0.625 mg/day of conjugated equine estrogen (CEE) increase the risk of serious adverse events, specifically stroke, deep vein thrombosis (blood clots in the lower legs) and/or pulmonary embolism (blood clots in the lung).
- Although experts think that lower doses of estrogen may reduce these long-term adverse effects, the precise risks and benefits associated with lower estrogen doses are not known.
- Side effects associated with the progesterone medication may include weight gain, fluid retention (swelling of ankles and feet), mastalgia (breast tenderness), mood changes, bloating, irregular vaginal bleeding, acne, hair loss, fatigue, sedation (may be less if taken at bedtime), and sensitivity of the skin to the sun.

Oral Estrogen Alone

If you have had a total hysterectomy (surgery to remove the uterus and cervix), you can use estrogen alone without progesterone, since women without a uterus cannot develop endometrial cancer (4;10-13).

Benefits, Risks, and Common Treatment Approaches

- See "Combination Oral Estrogen and Progesterone Therapy" (above).
- Estrogen used alone can cause cancer of the lining of the uterus (endometrial cancer) and can cause benign thickening of the lining of the uterus and irregular bleeding in women who have a uterus.

Other Forms of Estrogen/Progesterone for Hot Flashes

In addition to oral medications, estrogen and progesterone are available in other forms such as skin patches, vaginal creams, rings, tablets, or gels (9;13;14).

- **Transdermal (skin patch) estrogen** has been shown to be as effective as oral estrogen for controlling hot flashes. The medication is absorbed from the patch through the skin into the bloodstream. Doses as low as 0.014 to 0.025 mg/day of transdermal estradiol may be effective.
  - It may take up to 4 weeks to observe a reduction in hot flashes after starting transdermal estrogen.
  - Several studies suggest that transdermal estrogen may have fewer side effects than oral estrogen, as well as a lower risk of blood clots.
- **The vaginal estrogen ring** is approved by the FDA for treating hot flashes, night sweats, and vaginal dryness.
  - This soft, flexible ring contains estrogen, and the medication gradually leaks out of the ring into the vagina, all day, every day, for up to 3 months. The medication is absorbed by the tissues that line the vagina. Some of the estrogen may get into the bloodstream, usually in very small amounts.

- Depending on the dose of estrogen released by the ring (which differs by brand), women whose uterus has not been removed may need to take progesterone as well.

- A **synthetic progesterone** medication, such as Megestrol acetate (Megace®).
  - 20 to 80 mg/day is reported to substantially decrease hot flashes.
  - Weight gain is the main side effect associated with this medication.
  - Recent evidence suggests that progesterone is associated with an increased risk of breast cancer.

- **Duration of therapy:** Because no data are available regarding optimal duration of estrogen and progesterone therapy, duration of treatment is tailored to a woman's needs (1;4;7;9;10).

NON-HORMONAL MEDICATIONS FOR NIGHT SWEATS, HOT FLASHES

Medications other than MHT may be prescribed for hot flashes (5;15-19).

Selective Serotonin Re-uptake Inhibitors (SSRIs)

SSRIs are antidepressant medications that can be very effective in reducing the severity and frequency of hot flash episodes. Examples of SSRIs include Effexor® (Venlafaxine), Effexor XR, and Paxil® (Paroxetine HCl). A recent combined analysis of published randomized controlled studies of SSRIs supports the effectiveness of these medications, although the benefits are smaller than those seen with MHT (20).

Benefits
- SSRIs have been shown to substantially decrease hot flash frequency and severity.
- Typically, short-term use (1 or 2 weeks) is sufficient to determine if an SSRI is going to be beneficial.
- More prolonged therapy is generally required to obtain maximum symptom control.
- SSRIs are an appropriate first-line treatment for women who decline or cannot take MHT.
- A possible bonus effect is an improvement in clinical depression, should that be a co-existing medical problem.

Risks
- Possible side effects of SSRIs may include restlessness, fatigue, dry mouth, decreased appetite, constipation, difficulty sleeping and nausea. The chances of experiencing side effects are greater at higher medication doses.

Common SSRI treatment approaches for hot flash control
- Effexor® (Venlafaxine):
  - Start at dose of 17.5 mg/day to 37 mg/day (the dose for treating depression or anxiety disorder is 75 mg/day to 225 mg/day).
  - Gradually increase to a maximum of 75 mg/day, as needed.
  - Studies report that dosages of 150 mg/day or higher do not yield additional benefit relative to hot flash control.
  - Effexor XR (the long-acting form of Effexor) may be useful.

- Paxil® (Paroxetine HCl):
  - Start at dose 10.0 to 12.5 mg/day.
  - Gradually increase the dose up to 25 mg/day.

Duration of therapy: No data are available regarding optimum duration of treatment. Decision-making should be individualized, based on discussions with your health care provider about possible benefits and risks.

Belladonna-phenobarbital-ergotamine preparations (Bellergal-S®)

Some women report that belladonna preparations help them cope with hot flashes (17;21-23). A recent combined analysis of published randomized controlled studies of hot flash management identified only one trial of this preparation. It was judged to be of poor quality, and did not support the value of belladonna in treating hot flashes (20).

Benefits

- Belladonna is reported to decrease hot flashes, and is an FDA-approved treatment for menopausal symptoms.

Risks

- This combination medication has the potential for abuse and addiction because it contains a barbiturate.
- It may be difficult to take during the day because of its sedative effect.
- Side effects include dry mouth, dizziness and sleepiness.

Common Treatment Schedule for Hot Flash Control

- 1 tablet once or twice daily.

Duration of therapy: No data are available regarding optimum duration of treatment. Decision-making should be individualized, based on discussions with your health care provider, with careful consideration of the potential for abuse or addiction.

Clonidine Hydrochloride (Catapres®)

This blood pressure medication has been found to reduce the frequency and severity of hot flash episodes (5;6;17;24;25). A recent combined analysis of published randomized controlled studies of clonidine supports the effectiveness of this medication, although the benefits are smaller than those seen with MHT (20).

Benefits

- Clonidine has been shown to decrease hot flashes.
- It may be an appropriate second-line treatment for women who decline or can't tolerate MHT or SSRI treatment.

Risks

- Side effects may include dry mouth, dizziness, drowsiness, tiredness, lightheadedness, constipation, decreased sexual desire, lethargy, low blood pressure, and difficulty sleeping.
- Some patients find it difficult to take this medication over a long period of time. Among women participating in clinical trials of clonidine, there have been high dropout rates because of its numerous side effects.

Common Treatment Schedule for Hot Flash Control

- Apply transdermal patch of 0.1 mg/day.
- May increase the dose to 0.2 to 0.3 mg/day, if needed and if tolerated.
- Take oral doses in the range of 0.1 to 0.4 mg/day.
- May take an extra dose at night to prevent awakening.

Duration of therapy: No data are available regarding optimum duration of treatment. Decision-making should be individualized, based on discussions with your health care provider.

Gabapentin (Neurontin®)

This medication is generally used to treat epilepsy and related neurological conditions, but it also may reduce the frequency and severity of hot flash episodes (18;26;27). A recent combined analysis of published randomized controlled studies of gabapentin supports the effectiveness of this medication, although the benefits are smaller than those seen with MHT (20).

Benefits

- Neurontin is reported to decrease hot flashes.

Risks

- Side effects may include lightheadedness, mild swelling of the ankles, or difficulty achieving orgasm.

Common Treatment Schedule for Hot Flash Control

- Start at a relatively low dose, such as 100 mg/day.
- May gradually increase the dose to as much as 300 mg, three times a day.
- The greatest improvement in hot flash frequency was observed in women taking the 900 mg/day dose.

Duration of therapy: No data are available regarding optimum duration of treatment. Decision-making should be individualized, based on discussions with your health care provider.

COMPLEMENTARY AND ALTERNATIVE MEDICINES (CAM)

As is generally the case with most CAMs, the safety and/or efficacy of the approaches listed below are unknown, as most are not regulated by the FDA. If women choose to use these approaches in an effort to reduce hot flashes or night sweats, it is recommended that they first discuss this with their health care provider, to avoid unexpected side effects from interactions with other medications (9;25;28).

Phytoestrogens

Phytoestrogens are plant-derived substances that possess some of estrogen's biological effects (9;25;28). The active ingredients in these products are thought to be members of a family of chemicals called "isoflavones." Red clover and soy products are among the common sources used to create these medications. Others include tofu, tempeh, whole-grain cereals, seeds, certain fruits/vegetables. In commercial supplements, phytoestrogens have been either extracted from the plants in which they occur, or made in the laboratory, and turned into pills or capsules that can be taken as a medication (9;25;28).

A recent combined analysis of published randomized controlled studies of isoflavones showed no benefit related to the red clover-derived preparations, and provided mixed evidence regarding the effectiveness of the soy-derived preparations, although the benefits from soy are smaller than those seen with MHT (20). Other experts, reviewing these and additional data, have concluded that the overall evidence does not show benefit from phytoestrogens in the treatment of hot flashes (1).

- Side effects were similar between subjects taking phytoestrogens and those taking placebo in several clinical trials.
- Although these are considered to be benign, natural, herbal preparations, they do in fact have at least some estrogen-like biologic effects.
  - It is possible that estrogen-like side effects might occur as well.
  - One long-term study did suggest an increased rate of endometrial thickening after 5 years of soy isoflavone use.
- Be sure to discuss with your Health Care Provider how much phytoestrogen you can safely take.

OTHER NON-PRESCRIPTION MEDICATIONS

Black Cohosh

Some women report an improvement in hot flashes associated with the use of this herbal preparation, but the English language medical literature does not contain evidence of a consistent benefit (8;24;27). A recent NIH-sponsored clinical trial studied the effectiveness of black cohosh versus placebo pills for hot flash control, and found no evidence of benefit for black cohosh (29).

- Daily doses range from 20 to 40mg/day for 6 months.
- In clinical trials, few side effects were reported (side effects included: headaches, gastric complaints, heaviness in the legs, and weight problems).
- Black cohosh may have estrogen-like effects, some of which may be undesirable.

Miscellaneous

Small studies, generally of poor quality, have been performed to evaluate the value of a wide variety of other preparations, including flaxseed, kava, Dong Quai root, ginseng, evening primrose oil, and wild yam (9;25;28;30). The available data do not show evidence of benefit in the treatment of hot flashes.

Relaxation techniques

Relaxation techniques include yoga, massage, meditation, leisure bath, and slow, deep, paced respiration. Several reports have suggested that women may experience some relief of hot flashes with the use of these techniques (30-33).

Acupuncture, Biofeedback, Hypnosis

There are no data supporting the efficacy of acupuncture, biofeedback, or hypnosis in the treatment of hot flashes or night sweats (25).

Lifestyle/Environmental Changes

Women can adopt healthy behaviors in an effort to minimize hot flashes and night sweats (23;29;30).

- Keep a diary of when hot flashes and night sweats occur. This will help identify triggers to their occurrence or times when medication loses its effectiveness.
- Keep body temperature cool:
  - dress in layers
  - use a fan
  - choose cold food and drinks
  - sleep in cool room
- Exercise regularly. Physically active women report fewer hot flashes than do sedentary women.
- Do not smoke.
- Eat a healthy diet, and avoid dietary triggers to hot flash occurrence (avoid spicy/hot foods, caffeine, and alcohol).

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National Cancer Institute

Division of Cancer Epidemiology and Genetics

Clinical Genetics Branch

in cooperation with:

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and

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Preventing Osteoporosis

Information for Women Enrolled in the Ovarian Cancer Prevention and Early Detection Study (GOG-0199) to Share with Their Health Care Providers after having read "How to Deal with Surgical Menopause: Questions and Answers"

The critical issue related to bone health for women undergoing surgical menopause is recognizing that bone loss starts immediately following surgery. Consequently, these patients merit preventive treatment, to keep bone loss to a minimum, and careful monitoring to identify whether sufficient bone loss has occurred despite standard treatment to warrant more aggressive therapy.

Women at risk of bone loss should be advised to take oral calcium and vitamin D supplements, avoid tobacco exposure, and engage in regular, weight-bearing exercise. The latter should include muscle strengthening and balance training, aimed at reducing the likelihood of falling. A bone density scan (also known as DXA or DEXA bone density scan) is suggested before risk-reducing salpingo-oophorectomy (RRSO) is performed, to establish a baseline, with follow-up scans performed every 1 to 2 years after surgery.

The recent NIH State-of-the-Science Conference on Management of Menopause-Related Symptoms focused on identifying menopausal symptoms and assessing treatments for them on the basis of existing scientific evidence, which comes from the experience of treating mild to severe bone loss in the general population (1). The NIH Conference forms the basis for much of the information that follows, and we have supplemented their findings with a review of the recent literature, as well as our own experience in caring for postmenopausal women.

You may wish to share these research findings with your health care provider so that you can develop an osteoporosis prevention and treatment plan together.

Calcium and Vitamin D

- Oral calcium and vitamin D represent the current standard-of-care aimed at preventing bone loss in postmenopausal women.
- Vitamin D helps the body to absorb calcium more efficiently.
- Moderate exposure to sunlight helps the body make its own vitamin D.
- See Table 1 for a summary of currently available calcium/vitamin D preparations (2).

Table 1. Calcium and Vitamin D Supplementation for Postmenopausal Women.*

Supplement	Preparation	Recommended Daily Total	Frequency of Doses	Comment
Calcium		1200–1500 mg	Two or three times daily	Side effects: nausea, constipation
Calcium carbonate		200–600 mg	Two or three times daily	Food enhances absorption
	Caltrate	600 mg	Twice daily	With or without vitamin D, at a dose of 200 IU; food enhances absorption†
	OsCal	250–600 mg	Two or four times daily	Fasting enhances absorption; with or without vitamin D
	Tums	200–500 mg	Two or three times daily	Available as chewable antacid tablets and pills
	Viactiv	500 mg	Twice daily	Available as flavored "chews"; with vitamin D†
Calcium lactate		42–84 mg	Five or six times daily	Requires taking many tablets very often
Calcium citrate				
	Citracal	200–500 mg	Two or four times daily	With or without vitamin D, at a dose of 200 IU; food enhances absorption†
Calcium phosphate	Posture	600 mg	Twice daily	Posture is the only calcium phosphate preparation available
Vitamin D	600–800 IU (15–20 μg) daily	Daily	Taken any time of the day	
	Multivitamin	400 IU per pill	Daily or twice daily	Good absorption; may contain vitamin D_2 or D_3
	Vitamin D	400 IU per pill	Daily or twice daily	Good absorption
	Calcium with vitamin D†	125–400 IU per pill	Daily or twice daily	The dose of vitamin D varies in different supplements
	Ergocalciferol (vitamin D_2)	50,000 IU per capsule	Once weekly	For vitamin D deficiency, vitamin D_3 is preferred
	Cholecalciferol (vitamin D_3)‡	50,000 IU per capsule	Once weekly	For vitamin D deficiency

* Adequate intake of vitamin D for older postmenopausal women, as established by the Institute of Medicine in 1997, is 600 IU daily; persons living in northern latitudes often have lower serum vitamin D levels and are thought to require 800 IU daily. The recommended daily totals are for elemental calcium and elemental vitamin D.

† Often calcium supplements contain vitamin D, but the dose and type of vitamin D vary (e.g., 125 IU to 400 IU per tablet). Similarly, vitamin D supplements often include calcium at various doses (e.g., 125 mg to 500 mg per tablet). Supplements need to be examined carefully by both the patient and the provider, so that proper doses are administered.

‡ Vitamin D_3 is preferred for replacement in persons with vitamin D deficiency, because it can be measured more accurately than D_2 and is absorbed better. However, high doses (e.g., 50,000 IU) can be difficult to obtain. Vitamin D_2 is derived from plant sources. It can be obtained from most formularies and pharmacies. Regardless of the type of vitamin D, treatment with high doses should not continue beyond three months and should be followed by a repeated measurement of the serum 25(OH)vitamin D level. If supplementation is successful in raising the serum level, a dose of 800 IU per day is used for maintenance. If supplementation is unsuccessful and the assay is valid, then consideration should be given to malabsorption, particularly gluten enteropathy.

Benefits

- There is a low risk of complications or adverse reactions associated with these supplements, and they are available without prescription.

Risks

- Calcium supplements may cause constipation.
- Excessive doses of these supplements may cause elevated calcium levels in the blood (hypercalcemia). Hypercalcemia may cause deep bone or flank (side) pain, kidney stones, loss of appetite, nausea, vomiting, thirst, or lack of energy.

Common Osteoporosis Prevention Approach

- Calcium: 1200 mg of calcium by mouth each day (usually two doses of 600 mg each).
- Vitamin D: The generally accepted minimum dose is 400 IU of vitamin D daily. A recent study suggests that 700 to 800 IU of vitamin D daily is optimal to prevent fractures when taken with calcium.
- Women taking calcium are encouraged to drink 8 to 10 glasses of fluid per day.

Duration of therapy: Treatment is often administered indefinitely, as long as it is well tolerated. No data are available regarding optimum duration of treatment. Decision-making should be individualized, in discussion with your health care provider.

Lifestyle Modifications

A woman can adopt healthy behaviors to prevent bone loss and the harmful consequences of bone thinning (3).

- Take part in regular weight-bearing exercise (walking, jogging, dancing, weight lifting, etc) at least 3 days per week.
- Participate in muscle strengthening and balance improvement exercises.
- Do not smoke.
- Limit consumption of alcoholic beverages to no more than 1 drink per day.
- Prevent yourself from falling:
  - make sure there is adequate lighting throughout the house (especially at night)
  - avoid loose electric cords or wires on the floor
  - avoid highly polished floors
  - avoid scatter rugs
  - mop up spills immediately
  - avoid icy areas in the winter (porch, driveway)

Hormonal Medications

The goal of symptom control is to preserve quality of life while minimizing health risks related to treatment. Information about the risks and benefits of menopausal hormone therapy (MHT) may be confusing and contradictory. To further complicate treatment decisions, we do not know yet whether high-risk women who undergo RRSO may be more likely than other women to experience adverse outcomes from MHT.

Oral Estrogen

Estrogen is effective in reducing bone loss in postmenopausal women (1;4;5).

Benefits

- Women's Health Initiative (WHI) data show that MHT does provide protection against hip, spine, and wrist fractures in postmenopausal women.

Risks

- Doses equivalent to, or greater than, 0.625mg/day of conjugated equine estrogen (CEE) increase the risk of serious adverse events, specifically stroke, deep vein thrombosis (blood clots in the lower legs), and/or pulmonary embolism (blood clots in the lung).
- Although experts think that lower doses of estrogen may reduce these long-term adverse effects, the precise risks and benefits associated with using reduced estrogen doses are not known.

Common Treatment Approach

- Evidence suggests that 0.3 mg/day of CEE or 0.5 mg/day of estradiol maintains bone density nearly as well as higher doses.
- Estrogen therapy is generally combined with the female hormone progesterone in women who have not had their uterus removed (have not had a hysterectomy), because estrogen given alone increases the risk of endometrial cancer.

Duration of therapy: Data regarding optimal duration of therapy do not exist. Other points to consider:

- If low-dose estrogen is required after RRSO in order to ease the transition from pre- to post-menopause, it may help to preserve bone density at the same time.
- Recent evidence from the Women's Health Initiative suggests that the combination of estrogen and progesterone is associated with an increased risk of breast cancer.
- Try to avoid using estrogen for more than 5 years, or beyond age 50, in an effort to minimize the risk of breast cancer.
- The bone-protecting effect of estrogen disappears quickly once it is stopped.
- Avoid abrupt discontinuation of estrogen therapy; tapering or weaning schedules seems to be better tolerated (9).
- If estrogen therapy is discontinued, consider switching to other bone protective medications, such as bisphosphonates or SERMs (Selective Estrogen Receptor Modulators), as indicated by the results of bone densitometry.
- See Table 2 for a summary of the various medications used to prevent or treat osteoporosis.

Table 2. Medications Approved by the Food and Drug Administration for the Treatment or Prevention of Postmenopausal Osteoporosis.*

Drug	Method of Administration and Dose	Reduction in Risk of Fracture	Side Effect	FDA Approval
Bisphosphonates	Oral		Esophagitis, myalgias	For treatment and prevention†
Alendronate	35–70 mg weekly, 5–10 mg daily	Vertebral, nonvertebral, and hip fracture		
Risedronate	30–35 mg weekly, 5 mg daily	Vertebral, nonvertebral, and hip fracture		
Ibandronate	150 mg monthly, 2.5 mg daily	Vertebral fracture	First dose‡	
SERM	Oral			For treatment and prevention
Raloxifene	60 mg daily	Vertebral fracture only	Hot flashes, nausea, DVT, leg cramps	
Anabolic agents	Subcutaneous, daily			
PTH (1–34) (teriparatide)	20 μg	Vertebral and nonvertebral fracture	Hypercalcemia, nausea, leg cramps	Approved for treatment only; generally used for severe osteoporosis
Calcitonin§	Subcutaneous or nasal, 100–200 IU	Vertebral fracture only	Nasal stuffiness, nausea	Approved for treatment only
Estrogens	Oral or transdermal		Risk of DVT, risk of cardiovascular disease, breast cancer	Approved for prevention only
Conjugated equine estrogens	Oral, 0.30–1.25 mg daily	Vertebral, nonvertebral, and hip fracture (at dose of 0.625 mg daily)		
17β-estradiol¶	Oral, 0.025–0.10 mg, or transdermal twice weekly	No data from randomized, controlled trials		For prevention only
	Ultra-low-dose (0.014 mg/day, given weekly)	No data available		

* All agents approved for treatment have demonstrated efficacy in reducing fractures, as determined in randomized, placebo-controlled trials with fracture as the primary end point. DVT denotes deep-vein thrombosis, SERM selective estrogen-receptor modulator, and PTH parathyroid hormone.
† There has been limited post-marketing experience with ibandronate for prevention.
‡ There may be a response to the first dose at 150 mg consisting of myalgias, joint aches, and low-grade fever, which is similar to a response to the first intravenous administration of bisphosphonates containing nitrogen.
§ The use of calcitonin is not generally recommended.
¶ A reduction in the risk of hip fracture has not been established for 17β-estradiol in a randomized, controlled trial.

Transdermal Estrogen (Estrogen Patch)

Benefits

- Considered to be as effective as bisphosphonates (see below) in preventing osteoporosis (6).
- Helps to maintain a constant level of estrogen in the bloodstream.
- Some studies report that the estrogen patch may be safer than oral estrogen in smokers (7;8).

Risks

- Although the evidence is not solid, several studies suggest that the estrogen patch may have fewer side effects and a lower incidence of adverse events (particularly, a lower risk of venous thrombosis) than oral estrogen.

Common Treatment Approach for Bone Preservation

- The effective dosage range of the estrogen patch may be as low as 0.025 to 0.1 mg/day (9).

Duration of therapy: No data are available regarding optimum duration of treatment. Decision-making should be individualized, based upon discussion with your health care provider.

Selective Estrogen Receptor Modulators (SERMS)

These medications were originally developed to treat breast cancer, by blocking the effects of estrogen in the body. Common brands include tamoxifen (Nolvadex®) and raloxifene (Evista®). Over time, it has become clear that these drugs possess some estrogen-like biological effects as well. So, for example, both tamoxifen and raloxifene protect against bone loss, just like estrogen does.

Benefits

- SERMS reduce bone loss and the risk of bone fracture.
- They may decrease LDL ("bad") cholesterol and total cholesterol, although it is not proven that these lipid changes alter the risk of coronary disease.
- SERMS also substantially decrease the risk of breast cancer in the opposite breast among women with breast cancer, and among women from the general population who are at modestly increased risk of breast cancer (10;11). It is uncertain, at present, whether these medications lower the risk of breast cancer in women who are at increased genetic risk of breast and ovarian cancer, although several studies suggest that they may.

Risks

- SERMs increase the risk of blood clots, leg cramps, and hot flashes. A woman with a history of blood clots should not take SERMs.
- Tamoxifen is associated with an increased risk of endometrial cancer, while raloxifene is not associated with this risk.
- Generally, SERMS are not used at the same time as menopausal estrogen therapy.

Common Treatment Approach for Bone Preservation

- Tamoxifen: 20 mg/day.
- Raloxifene: 60 mg/day.

Duration of therapy: No data are available regarding optimum duration of treatment. Decision-making should be individualized, based on discussions with your health care provider.

Parathyroid Hormone

Parathyroid hormone is made naturally by the body, and is part of the system by which the body maintains normal bone density. It works by stimulating new bone growth, rather than preventing further bone loss. It can be administered as a medication.

Benefits

- Parathyroid hormone helps to improve bone density by stimulating the formation of new bone tissue.

Risks

- Side effects are usually mild and may include dizziness, leg cramps, and fast heart rate.

Common Treatment Approach for Bone Preservation

- Once-a-day injection into the soft tissue of the thigh or abdomen.

Duration of therapy: The use of parathyroid hormone as a treatment for osteoporosis is limited to two years or less. Decision-making should be individualized, based upon discussion with your health care provider.

Calcitonin

Calcitonin is a hormone made naturally by the body, and is also part of the system by which the body maintains normal bone density. It can be administered as a medication. Brands of calcitonin include Miacalcin® and Calcimar®.

Benefits

- Calcitonin inhibits bone removal and promotes new bone formation.

Risks

- Side effects may include headaches, dizziness, diarrhea, decreased appetite, nose bleeds (with the nasal form of the medication), and nasal irritation.

Common Treatment Approaches for Bone Preservation

- Daily administration of injectable calcitonin (200 IU/ml), or metered-dose intranasal spray 200 IU per inhaler activation (0.09 ml/puff).
- To achieve the best results, patients should continue to take standard doses of calcium & vitamin D along with calcitonin.

Duration of therapy: No data are available regarding optimum duration of treatment. Decision-making should be individualized, based on discussions with your health care provider.

Bisphosphonates

This family of medications represents a non-hormonal alternative to preventing and treating bone loss. Many of these medications can be taken by mouth. Common brands include Risedronate (Actonel®), Alendronate (Fosamax®), Zoledronic acid (Zometa®), Etidronate (Didronel®), and Ibandronate (Boniva®).

Benefits

These products are very effective against bone loss, and they also promote new bone formation.

- They are increasingly becoming the non-hormonal treatment of choice for osteoporosis in many postmenopausal women.
- Bisphosphonates are recommended for women who choose not to use estrogen after RRSO.
- It has been reported that, after several years of use, Fosamax® has a residual effect on bone density that may last for up to a year or longer.

Risks

- Heartburn, acid-indigestion (reflux esophagitis), gastritis, and other digestive problems are common. These side effects can be minimized if oral medications are taken with a large amount of water, followed by sitting upright or standing for at least 30 minutes after the pill has been taken.
- Preliminary evidence suggests that "vacations" from long-term use of Risedronate (Actonel®) and Alendronate (Fosamax®) should be considered to reduce the risk of developing brittle bones (12). Such vacations may reduce the risk of fracture from excessive suppression of bone remodeling.

Common Treatment Approach for Bone Preservation

- Treatment with these medications varies widely, depending on the specific bisphosphonate that is used.

Duration of therapy: No data are available regarding optimum duration of treatment. Decision-making should be individualized, based on discussions with your health care provider.

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Preventing Vaginal Dryness and Painful Intercourse: Research Findings

Information for Women Enrolled in the Ovarian Cancer Prevention and Early Detection Study (GOG-0199) to Share with Their Health Care Providers after having read "How to Deal with Surgical Menopause: Questions and Answers"

Vaginal dryness and painful intercourse are symptoms reported by many women experiencing menopause. Because these problems generally do not improve as time passes, they may significantly disturb a woman's quality of life.

If vaginal dryness is the only menopause-related symptom a woman is experiencing, oral estrogen is generally not the first choice for treatment. Instead, the woman may be prescribed a form of estrogen that can be delivered directly to the vaginal lining (in the form of a cream, ring, or tablet), and avoid exposing other tissues to un-needed estrogen.

You may wish to share these research findings with your health care provider so that you can develop a vaginal dryness/painful intercourse treatment plan together.

HORMONAL MEDICATIONS

Oral estrogen

Estrogen medications that are taken by mouth to treat or prevent other menopausal problems can help reduce vaginal symptoms at the same time (1-4).

Benefits

- Estrogen therapy helps to correct the thinning, dryness, and loss of elasticity that occurs in the vaginal lining of postmenopausal women.
- Estrogen therapy may relieve pain or discomfort during sexual intercourse.

Risks

- Doses equivalent to, or greater than, 0.625 mg/day of conjugated equine estrogen (CEE) increase the risk of serious side effects, specifically stroke, deep vein thrombosis (blood clots in the lower legs), and/or pulmonary embolism (blood clots in the lung).
- Although experts think that lower doses of estrogen may reduce these long-term adverse effects, the precise risks and benefits associated with this strategy are not known.

Common Oral Estrogen Treatment Approaches for Vaginal Dryness/Painful Intercourse

- Start at the lowest possible estrogen dose.
- Increase the dose gradually, if needed, to achieve satisfactory symptom control.
- Doses as low as 0.5 mg/day of oral micronized estradiol or 0.3 mg/day of oral CEE may provide effective relief.

Duration of Therapy: No data are available regarding optimum duration of treatment. Decision-making should be individualized, based on discussions with your health care provider. Generally accepted approaches include the following (1;3-6):

- Use the lowest medication dose that provides satisfactory symptom relief.
- Increase the dose of estrogen if the starting dose does not control symptoms to your satisfaction.
- Use oral estrogen for as short a period of time as possible.
- Avoid using menopausal hormone therapy for longer than 5 years or beyond age 50.
- If vaginal symptoms continue when oral estrogen is stopped, consider switching to an intra-vaginal estrogen cream, ring or suppository.
- Periodically reassess the efficacy of treatment, and attempt to reduce or discontinue therapy, if possible.
- Avoid abrupt discontinuation of treatment; gradual tapering or weaning of this medication seems to be better tolerated.

Other Forms of Estrogen for Vaginal Dryness/Painful Intercourse

In addition to oral estrogen medications, other forms of estrogen include estrogen skin patches, vaginal rings, and creams (1;7).

Benefits

- Transdermal (skin patch) estrogen helps maintain a constant level of estrogen in the bloodstream. Several studies suggest that transdermal estrogen may have fewer side effects and a reduced incidence of adverse events (particularly a lower risk of venous thrombosis) than oral estrogen.
- Some studies report that the estrogen patch may be safer than oral estrogen in smokers, because smoking may reduce or eliminate the favorable effects of estrogen taken by mouth (such as improved bone mass or density).
- Relatively small amounts of estrogen are absorbed into the body from vaginal rings or creams.
- Estrogen ring, cream, or tablets may control vaginal dryness and help prevent the vaginal tissue from becoming thinner and more easily irritated.
- The intra-vaginal estrogen ring usually does not interfere with intercourse.

Risks

- Although experts think that low-dose estrogen products may reduce the risk of side effects associated with long-term estrogen use, the precise risks and benefits related to vaginal estrogen are not well-defined.

Common Treatment Approaches for Vaginal Dryness/Painful Intercourse

- Vaginal rings inserted into the vagina may remain in place for up to three months.
  - They deliver estrogen directly to vaginal tissue, as a sustained, continuous release of medication.
  - Intra-vaginal rings must be changed every 3 months, by the patient or physician, when the ring has no more estrogen in it.
- Vaginal creams can be used daily, or as directed in the package insert.
- Vaginal tablets can be used daily for the first two weeks and then twice a week, or as directed by your health care provider.

Duration of Therapy: See above.

Non-hormonal Treatments

Many non-hormonal products are on the market, including vaginal moisturizers (such as Replens®) and water-soluble lubricants (such as Astroglide®). Whereas estrogens improve the thickness and elasticity of the vaginal lining, moisturizers and lubricants do not. For this reason, the effect of the lubricant is temporary, and it may need to be reapplied before each episode of intercourse. Also, some women do not like the consistency or the smell of lubricants.

Benefits

- These preparations work right away, and they are available without a prescription.

Risks

- These preparations have no significant side effects.

Common Treatment Approach for Vaginal Dryness/Painful Intercourse

- Use vaginal moisturizing agents on a regular basis and lubricants during sexual intercourse.

Duration of therapy: No data are available regarding optimum duration of treatment. Decision-making should be individualized, based on discussions with your health care provider.

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National Cancer Institute

Division of Cancer Epidemiology and Genetics

Clinical Genetics Branch

in cooperation with:

The Gynecologic Oncology Group

and

The Cancer Genetics Network

Dealing with Urinary Symptoms: Research Findings

Information for Women Enrolled in the Ovarian Cancer Prevention and Early Detection Study (GOG-0199) to Share with Their Health Care Providers after having read "How to Deal with Surgical Menopause: Questions and Answers"

Menopausal women frequently experience urinary symptoms, such as recurrent urinary tract infections (UTIs) and bladder leakage (incontinence), which can have a negative impact on their quality of life. However, it is unclear whether these urinary symptoms are directly related to the postmenopausal decrease in female hormones. For example, bladder leakage can be caused by many medical conditions, including recurrent UTIs, nerve damage from diabetes or stroke, and changes in the bladder related to childbirth.

You may wish to share these research findings with your health care provider so that you can develop a urinary symptom treatment plan together.

DEALING WITH RECURRENT URINARY TRACT INFECTIONS (UTI)

HORMONAL MEDICATIONS

Estrogen Cream, Ring, or Tablet

Estrogen can be delivered directly to the vaginal lining with products in the form of creams, rings, or tablets (1-5).

Benefits

- Vaginal estrogen has been shown to significantly reduce the rate of recurrent urinary tract infections (6;7).
- Experts think that low doses of vaginal estrogen are likely to reduce the risk of side effects associated with long-term estrogen taken by mouth or patch.

Risks

- The precise risks related to vaginal estrogen are not well-defined.

Common Vaginal Estrogen Treatment Approaches for UTI Prevention

- Vaginal estrogen rings can remain in place for up to three months. They deliver estrogen directly to the vaginal lining, in a continuous manner.
- Vaginal estrogen creams can be applied to the lining of the vagina daily.
- Vaginal estrogen tablets can be inserted daily for the first two weeks, and then twice a week, or as directed by your healthcare provider.

Duration of Therapy: No data are available regarding duration of treatment. Decision-making should be individualized with input from your health care provider.

Lifestyle Changes to Prevent Recurrent UTI

- Drink pure cranberry **juice** (not cranberry *drink*).
- Follow basic hygiene practices:
  - Drink plenty of fluids - at least 8-10 cups of liquid a day.
  - Urinate frequently.
  - Empty your bladder completely.
  - Wash your genital area daily, especially before and after sexual intercourse.
  - Wipe front-to-back after urinating or having a bowel movement.
  - Do not apply feminine hygiene products that contain deodorants to the genital area.

BLADDER LEAKAGE

HORMONAL MEDICATIONS

Estrogen

In the past, it was assumed that estrogen helped to prevent bladder leakage in postmenopausal women. Newer evidence suggests that this is not correct, and that it may actually make bladder leakage worse. Experts now recommend against the use of menopausal hormone therapy (either estrogen alone or combined with progesterone) to prevent or treat bladder leakage (8;9).

Non-hormonal Medications

There are various prescription medications that may be used to improve bladder function and decrease leakage. These include Detrol®, Ditropan®, Oxytrol™ (patch), and Sanctura™. Many of these medicines have important side effects, so they are best used under direct medical supervision. You can discuss options with your health care provider. These medications may also be used along with complementary and alternative approaches.

Complementary and Alternative Treatments for Bladder Leakage

Although complementary and alternative approaches sound simple, it is important that they be done correctly for maximum benefit. Ask your health care provider for detailed instructions to ensure the best results.

Bladder Training

Bladder training focuses on improving bladder function by changing urinating habits. It helps to keep a diary to record urination patterns and changes in frequency as a result of training. Several websites provide specific instruction in these techniques (10;11).

Kegel Exercises/Bladder Muscle Training

There is evidence that regular practice of bladder (or pelvic floor) muscle exercise reduces bladder leakage. Most people notice decreased leakage within 4 to 6 weeks, but it may take as long as 3 months to see a significant change. More information on the details related to these exercises can be found on the web (12).

Biofeedback

Biofeedback helps some women become more aware of signals warning that the bladder needs to be emptied. It helps some women regain control over the muscles in the bladder and urethra.

Lifestyle Changes to Prevent Bladder Leakage

- Limit caffeine intake to prevent or reduce urinary urgency (the sensation of needing to empty your bladder).
- Drink pure cranberry **juice** (not cranberry *drink*).
- Perform daily Kegel exercises to strengthen pelvic floor muscles, as described above.
- Follow basic hygiene practices:
  - Drink plenty of fluids - at least 8-10 cups of liquid a day.
  - Urinate frequently.
  - Empty your bladder completely.
  - Wash your genital area daily, especially before and after sexual intercourse.
  - Wipe front-to-back after urinating or having a bowel movement.
  - Do not apply feminine hygiene products that contain deodorants to the genital area.

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Dealing with Decreased Sex Drive: research findings

Information for Women Enrolled in the Ovarian Cancer Prevention and Early Detection Study (GOG-0199) to Share with Their Health Care Providers after having read "How to Deal with Surgical Menopause: Questions and Answers"

Decreased libido (interest in sex) is reported by many women who are experiencing menopause. Because this problem generally does not improve as time passes, it may significantly diminish a woman's quality of life.

You may wish to share these research findings with your health care provider so that you can develop a treatment plan together, aimed at improving your libido.

HORMONAL MEDICATIONS

Oral estrogen and testosterone have been prescribed for women with low sex drive(1-4); in general, estrogen does not appear to be helpful, while testosterone may improve this symptom.

Oral Estrogen

- Estrogen therapy has no proven direct effect on sexual drive or libido.
- Oral estrogen, particularly conjugated equine estrogens (CEE), may actually make libido worse, because it reduces the amount of testosterone in the blood.
- In general, estrogen is not widely recommended as a treatment for reduced libido, although this option may be chosen after discussion with your health care provider.

Testosterone (Androgens)

Benefits

- Testosterone has been shown to improve or increase libido in postmenopausal women, including women undergoing surgical menopause.
- Testosterone may also increase bone density.

Risks

- Women sshould discuss the use of testosterone carefully with their health care providers before starting this medication, to fully understand potential side effects.
- Side effects of testosterone therapy may include increased facial hair growth, weight gain, acne, and deepening of the voice.
- Since some women may choose not to continue testosterone therapy as a result of unacceptable side effects, it may be beneficial to start with low-dose, oral testosterone. The dose may be increased, if needed. If the medication is found to be both effective and acceptable, consideration could be given to switching to a depot (long-acting) injectable form of testosterone.
- Taking very high doses of testosterone can have potentially serious side effects (e.g. liver damage).

Common Treatment Approach for Treatment of Decreased Libido

- There are many different forms of testosterone available and standard doses of this hormone have not been established. A Phase III trial investigating the efficacy and safety of a testosterone patch is currently underway.

Duration of Therapy: No data are available regarding optimum duration of treatment. Decision-making should be individualized, based on discussions with your health care provider.

NON-HORMONAL TREATMENTS

Antidepressants

At doses lower than those used to treat depression, an antidepressant may help improve sex drive (5-8).

Benefits

- May improve libido, especially if it is due to depression or other mood disorders.

Risks

- Risks are specific to the particular antidepressant medication prescribed.
- General side effects may include agitation, restlessness, fatigue, dry mouth, decreased appetite, constipation, increased blood pressure, nausea, or vomiting.
- At higher doses, some antidepressants may make sexual dysfunction worse.

Common Treatment Approaches for Management of Decreased Libido

- Therapy must be individualized.
- There is a lower risk of making sexual dysfunction worse when lower medication doses are used.
- Specific drug doses will depend upon which antidepressant is prescribed.

Duration of Therapy: No data available regarding optimum duration of treatment. Decision-making should be individualized, in discussions with your health care provider.

COMPLEMENTARY AND ALTERNATIVE MEDICINE (CAM)

As is generally the case with most CAMs, the safety and/or efficacy of the approaches listed below are unknown, as most are not FDA-regulated. If women choose to use these approaches in an effort to improve sexual function, it is recommended that they inform their health care professional, particularly to avoid unexpected side effects due interference with other medications they may be taking (9;10).

Dehydroepiandrosterone (DHEA) dietary supplement

- There is some evidence of benefit for improving libido.
- DHEA supplements can be obtained without prescription; they are not regulated by the FDA.
- Side effects related to the use of DHEA may include elevated cholesterol levels, acne, and facial hair growth.

Lifestyle Changes

- Doing daily Kegel exercises (also described in the section on Preventing Urinary Tract Infections and Bladder Leakage) strengthens the pelvic and vaginal muscles, which may preserve the elasticity of the vagina (11).
- It may also be helpful to remain sexually active.
- Seeking advice from a behavioral therapist with expertise in managing sexual problems/issues may be helpful.

Further information related to sexuality and reproductive issues can be found on the National Cancer Institute's website at:

http://www.cancer.gov/cancertopics/pdq/supportivecare/sexuality/HealthProfessional/page5/print

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