MENOPAUSE after gynaecological cancers

ENGAGe
ESGO | European Network of Gynaecological Cancer Advocacy Groups

Contents

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We have produced this publication to help you better understand and live with menopause after being treated for a gynaecological cancer.

Menopause can cause unpleasant physical and emotional symptoms, including a feeling of loss that decreases quality of life and affects the process of relearning of how your body functions after treatments. We want to introduce menopause as a natural biological condition and then give you useful information about it.

Menopause can cause an emotional shock. Because many of us identify it with our femininity and sexuality, its premature onset or treatment-induced development can be stressful, compounding the other physical symptoms and psychological effects.

During and after gynaecological cancer, our lives change.

Patients have many potential quality-of-life issues. Everything suddenly changes. Menopause, a process which normally takes approximately ten years, may start at once after cancer treatment and be more intense—although shorter—than natural menopause. In addition to the other late effects of the treatment, this becomes another challenge cancer patients may have to face. Patients who still wish to have children find it an even bigger psychological burden, since menopause brings infertility.

We hope that you can use this brochure to find useful information and helpful tips about menopause after gynae cancer treatment. We have also included short quotes from other gynaecological cancer patients to help you understand their experiences with menopause.

What is really important is that you are not alone!

Dare to ask for help if you need it!

I. What is menopause?

Menopause is a natural biological condition.

As a woman ages, her ovaries decline and stop producing oestrogen, the main female sex hormone that controls the female reproductive system.

During menopause, ovaries stop releasing eggs, and the hormonal levels fluctuate (rise and fall irregularly) until they finally fail completely. This marks the end of menstruation and the stopping of the menstrual period.

This usually happens between the ages of 45 and 55 but can occur earlier.

Aging is not the only cause of menopause.

Menopause after medical treatment or surgical treatment is called MEDICAL MENOPAUSE or SURGICAL MENOPAUSE.

- **Medical menopause**, also known as medical-induced menopause, can occur as a result of chemotherapy or radiotherapy which affects the ovaries. It may also occur when a woman is taking medication to suppress ovarian function, for example as part of some breast cancer treatments, or due to endometriosis or premenstrual dysphoric disorder (PMDD).

- **Surgical menopause** happens when both ovaries are removed during surgery. This can happen during hysterectomy due to gynaecological cancer, or prophylactic surgery, but also due to a benign condition like endometriosis.

II. Types of menopause

The types of menopause can also be explained as **physiological** and **artificial** menopause.

- **Physiological** or natural menopause occurs with ageing normally.

- **Artificial** menopause is defined when a woman goes through menopause because of surgical removal of the ovaries or other intervention (e.g., radiotherapy or cytostatic chemotherapy).

- Surgery to remove the ovaries can be performed alone (oophorectomy)
- or with removal of the uterus (hysterectomy)
- or radiotherapy 'zaps' the ovaries so they don't work anymore.

If the ovaries on both sides are removed, or zapped, their production of female hormones will stop. This causes immediate menopause, no matter how old the patient is. This is called surgical/medical primary ovarian insufficiency.

This hormone deficiency causes hot flashes, flushing, fluctuations in blood pressure, unjustified mood swings, depression, and more. Women in menopause become more susceptible to cardiovascular diseases, high blood pressure, myocardial infarction. They lose a significant part of their bone mass

sooner, i.e., osteoporosis develops, and ascending infections and inflammations are more common due to atrophy of the vaginal and bladder epithelium. Difficulty urinating may develop, and sexual intercourse may become painful due to vaginal dryness. Many women may lose their libido.

Of course, removal of the ovaries may be a lifesaving procedure. Some cancers are oestrogen dependent. If you have a family history of breast or ovarian cancer, oophorectomy may prevent developing the disease. Surgical menopause may help in endometriosis also.

The experience of undergoing natural menopause differs dramatically from that of surgical menopause. Natural menopause has a gradual onset in the physiology of the process. Surgical or artificial menopause results in more severe and frequent symptoms and has a great impact on quality of life and may even cause increased mortality.

The two-year period before menopause is called **premenopause**, and the two-year period that follows is called **postmenopause**.

Menopause usually occurs between the ages of 45–55.

Menopause is considered pathological if it occurs before the age of 45: **menopausal praecox.**

Menopausal tarda, i.e., late menopause, when regular uterine bleeding ceases only after the age of 55, is not abnormal, but is rare.

The timing of menopause is affected by several factors:

- Ethnicity
- The age at which menstruation began. The later menstruation occurs, the later menopause occurs.
- Relationship status. Menopause usually develops at a later age in married people
- Occupation. Those who do strenuous work may enter menopause earlier.
- Habits, like smoking, can bring menopause earlier.
- Social status. Women with a more privileged lifestyle may enter menopause later.

The following could lead to premature menopause:

- Genetics (X chromosome or autosome)
- Autoimmune ovarian damage
- Environmental factors
- Medical intervention (surgical, radio or chemotherapy)
- Metabolic changes (e.g., galactosaemia, a rare disease)
- Defect in structure/effects of gonadotropin (Salvage syndrome)
- Unexplained / idiopathic

III. The ageing process: What is normal?

By about the age of 40, there are few follicles left in the ovaries and ovulation becomes less common. An increasing proportion of cycles are anovulatory (no egg is released). The ovaries become atrophied and shrink, and eventually menstruation is delayed, i.e., menopause. Oestrogens continue to be produced in the ovaries for a long time, and for many years this will be sufficient to have a significant trophic effect on the breasts, the vagina, the urethra, and the cervix.

As oestrogen levels decrease, changes in the genitals become more pronounced. Hair loss occurs on the pubic mound and vulva and the adipose tissue of the labia decreases. The vagina will wither, and the uterus shrinks and becomes more dense due to the ratio of collagen to elastic elements increasing at the expense of muscle cells.

The breasts become smaller, with reduced elasticity, and glandular tissue is increasingly replaced by adipose tissue. With the onset of menopause, changes associated with a decrease in oestrogen also occur in the autonomic nervous system: irritability, forgetfulness, tendency to depression, headaches, sleep disturbances, hot flashes, decreased ovarian function, obesity, and fat deposition typical of old age.

IV. Pathological diseases in menopause

Bleeding disorders and menstrual disorders are common in premenopause. Any bleeding disorder can indicate a malignancy. In all cases, careful gynaecological examination, including colposcopy and oncocytological sampling should be performed.

Tissue shrinking (involutionary disorders): vaginal atrophy can be so severe that intercourse is painful or even impossible. Itching is unbearable in many cases and also inhibits night rest. Atrophy that appears on the clitoris and the labia majora may be such that they almost disappear.

Cardiovascular diseases: early menopause means an increased risk of coronary heart disease events **(1).** Exercise, proper nutrition, a healthy lifestyle, calcium and vitamin D supplementation, and smoking voidance are especially important.

Osteoporosis: Bone density decreases and bones become fragile, weaker, and more likely to fracture over time. This can be triggered by:

- Oestrogen deficiency
- Calcium metabolism disorder
- Decrease in calcitonin
- Vitamin D deficiency

Walking, Nordic walking, and hiking are the best sports to prevent osteoporosis.

V. Menopause vs climacterium

Climacterium describes the age of change, a 10–15-year transitional period in which ovarian function declines. The period of ovarian function spans about 35–40 years, with large individual differences. Of the approximately 300,000 eggs that existed at the onset of puberty, only a few remain for the time of change. No new eggs are formed after birth.

Follicles that reach only a certain stage of maturation (secondary and tertiary follicles) provide oestrogen levels typical of mature women. The cyclical change in oestrogen levels is based on this baseline value.

Menopause is the end of cyclic ovarian function and refers more specifically to the last regular menstrual period (not followed by another menses for at least a year).

Menopause is expected at the average age of 50 (48–52 years old). The cessation of menstrual bleeding is a consequence of ovarian failure. The last period divides the climacterium into two parts (pre- and postmenopausal). The cycles may already have been irregular for a few years before actual menopause. Oestrogen is produced in sufficient quantities in the absence of corpus luteum. In most cases, this explains any abnormal bleeding during these years, though the possibility of a malignant tumour should be ruled out for sure.

VI. Hormones

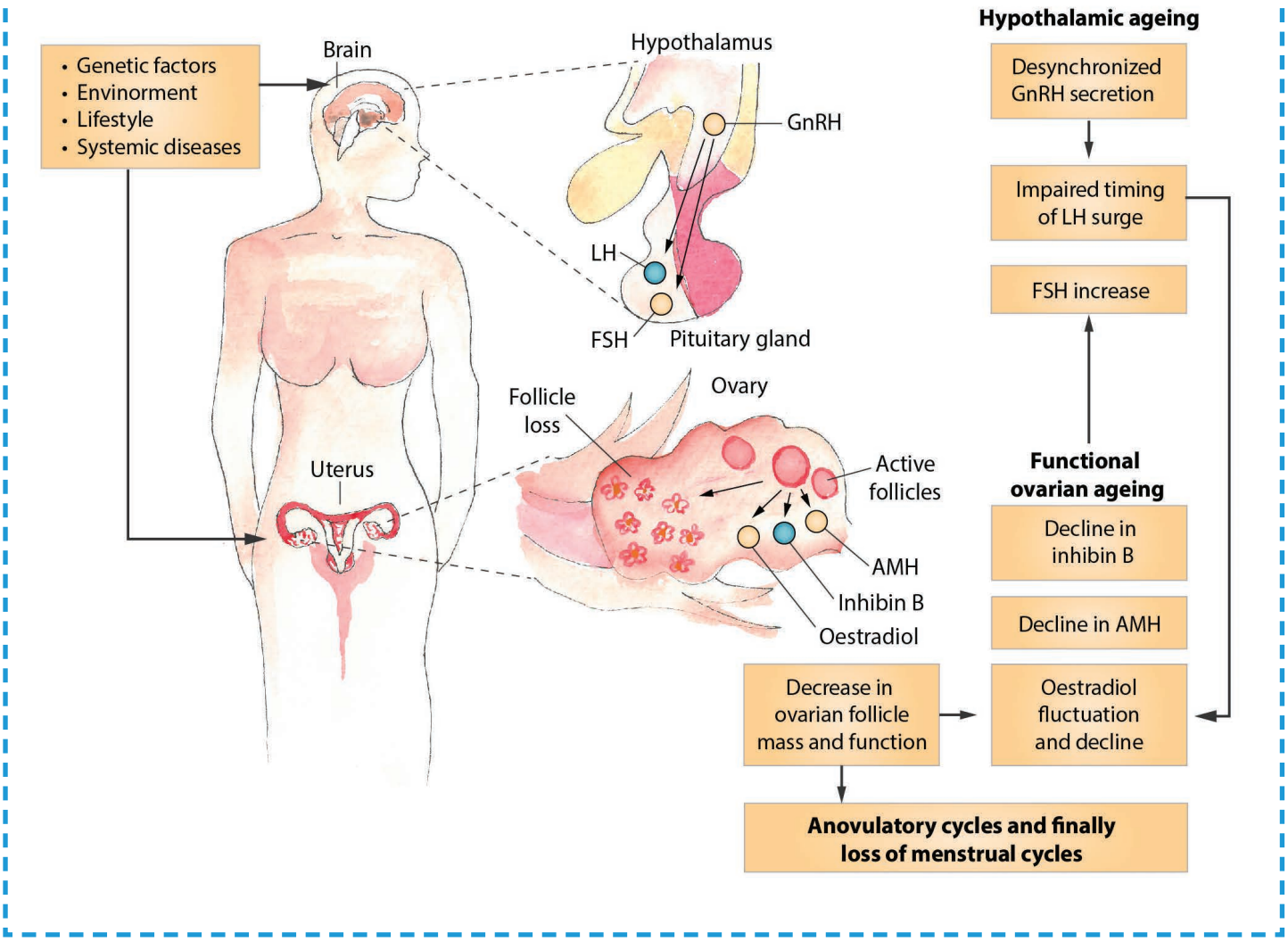
Hormones are naturally occurring substances in the body that circulate in the blood and control the activity of certain cells or organs.

How do hormones work?

Hormones are chemical messengers that travel throughout the body and affect the cells in many different ways. They coordinate very complex processes in the human body such as growth, fertility, arousal, and metabolism.

Hormones are produced by glands in the body called endocrine glands (the word endocrine means secreting internally). The production of hormones from the endocrine glands happens in response to a signal from the brain. The ovaries are perhaps the most familiar endocrine glands producing female sex hormones. Other endocrine glands are adrenal glands, thyroid, and pancreas. These glands are involved mainly in growth, metabolism, and stress responses.

All cells in the body are exposed to hormones, but not all cells react. For a cell to respond to a certain hormone it has to have a receptor for this hormone. When the hormone binds to its receptor it causes a biological response within the cell. The response ends when the "bond" between the hormone and its receptor is broken down by the body.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• Envinorment
• Lifestyle
• Systemic diseases
Brain
Hypothalamus
GnRH
LH
FSH
Pituitary gland
Ovary
Follicle loss
Active follicles
Uterus
AMH
Inhibin B
Oestradiol
Hypothalamic ageing
Desynchronized GnRH secretion
Impaired timing of LH surge
FSH increase
Functional ovarian ageing
Decline in inhibin B
Decline in AMH
Oestradiol fluctuation and decline
Decrease in ovarian follicle mass and function
Anovulatory cycles and finally loss of menstrual cycles

Types of hormones

Female hormones include: oestrogen, progesterone, melatonin, cortisol, insulin
Male hormones include: testosterone, epithosterone, androsterone, etiocholanolone

Female sex hormones

• Oestrogen:

Oestrogens: estrone, oestradiol, and estriol.

They are primarily involved in the regulation of the menstrual cycle. Oestrogen is produced by the ovaries. Oestrogen promotes the development of secondary female sexual characteristics in both the breasts and the womb. It is stored in fat cells, multiplies, and is not easily excreted. Oestrogen is present in the first half of the menstrual cycle.

• Progesterone:

Also known as corpus luteum. An oestrogen counterbalancing hormone. It is produced in the ovaries, and in small amounts in the adrenal glands. It is present in the second half of the cycle and is produced after a follicular rupture.

Its main functions are to regulate menstruation and to support pregnancy. Progesterone is produced by the placenta and adrenal glands. It stimulates the development of glands and the formation of new blood vessels. Progesterone prepares the body for pregnancy.

High progesterone levels do not usually cause any negative health effects.

Low progesterone levels affect fertility as well as menstruation.

Low progesterone levels can contribute to certain conditions:

- Miscarriage
- Poor ovarian function
- Lack of menstruation
- Infertility
- Low sexual desire
- Weight gain

• Melatonin:

Helps you sleep at night but plays a role in appetite and energy levels, as well as in the immune system.

• Cortisol:

Best known as the stress hormone produced by the adrenal glands. It plays a role in the development of memory, the regulation of blood sugar levels, and the maintenance of the body's salt-water balance. It also promotes or limits inflammation.

• Insulin

It plays an important role in metabolic processes as it helps to convert digested food into energy. Its job is to get the sugar out of the blood into the cells.

Male sex hormones

Male sex hormones are called androgens, which are produced by the testicles, but are also found in the adrenal glands. These regulate sperm production, libido, and fertility and affect puberty, stimulate secondary sexual characteristics, and ensure the proper development of muscles and healthy bones.

• Testosterone:

One of the steroid hormones produced by the Leydig cells of the testis (a minimal amount is also produced in the ovaries and adrenal glands). During adolescence, testosterone levels rise, stimulating sperm production and genital development. This hormone causes secondary sexual characteristics, such as facial hair, to become more pronounced, and is also responsible for sexual desire and aggression.

• Androsterone:

Cholesterol, a steroid hormone derivative produced in the adrenal gland, also pushes the nitrogen balance in a positive direction. It is a major component of men's body odour.

• Epitestosterone:

A natural steroid, its levels are highest in young men.

Stress hormones and menopause

When under stress (whether physical or emotional) our body produces two main stress hormones: cortisol and adrenaline.

These hormones are responsible for the "flight, fight, or freeze" reaction we experience under stress. Stress hormones are produced by our adrenal glands (which sit just on top of our kidneys). During menopause, the adrenal glands take over some of the production of oestrogen and progesterone from the ovaries. However, if the body is experiencing stress (for example, from a bad diet, relationship status, mental health, etc.) the adrenal glands produce these hormones over the production of oestrogen and progesterone. In stress situations, the body will always choose "survival" over "fertility".

During menopause, high levels of cortisol will cause worsening of some symptoms associated with menopause such as:

- Sleep disturbance
- Fatigue and low energy
- Digestion problems
- Weight gain
- Mood swings
- Low sex drive

Although we still do not know for sure if menopause in itself causes stress and subsequently a rise in stress hormones, studies have shown that it is beneficial to focus on stress-reducing strategies during perimenopause and menopause such as: healthy diet, regular exercise, and widening and strengthening the social support system **(2,3)**

Who can have hormone replacement therapy (HRT)?

Hormone replacement refers to supplying the otherwise naturally occurring oestrogen and progesterone hormones in the form of tablets, injections, or patches. Here it is important to differentiate between the different reasons why we would give hormone replacement therapy.

Reason 1: Naturally occurring menopause

This is a natural physiological process that happens in the body. Physiological processes do not necessarily need any form of medical therapy. However, if the symptoms of menopause are bothersome then the goal of therapy is to reduce these symptoms caused by the low oestrogen and progesterone levels in the body.

Reason 2: Early menopause (younger than 45 years of age)

This can happen for a variety of reasons including as a result of cancer treatment (surgery for removal of ovaries, chemotherapy, or radiotherapy). In this case, the goal of therapy is to reduce the risks of low oestrogen and progesterone levels (such as osteoporosis and cardiac diseases) as well as reducing the symptoms associated with menopause. In these cases, hormone replacement therapy has been proven to reduce the risk for cardiac disease and osteoporosis **(reference).** HRT is generally given until the average age at which menopause would have been reached (50–51 years of age).

Many women are worried about the risks of taking hormone replacement therapy if they have had gynaecological cancer. However, HRT can be given (and sometimes needs to be given) in certain situations after careful consultation with your doctor. Here is an overview on the various gynaecological cancers:

• Endometrial cancer (womb cancer):

The risk of HRT after the treatment of endometrial cancer has not been adequately studied {3} so there is not enough scientific evidence to either recommend or refuse hormone replacement therapy in women who have had endometrial cancer.

In women with treated endometrial cancer, HRT may be considered for menopausal symptoms that significantly impact and limit the quality of life and if other non-hormonal therapies have not been successful **(4)**.

If the main symptom is a dry vagina in patients after therapy for endometrial cancer, then this should be treated at first with non-hormonal creams or lubricants. If this is unsuccessful, then local oestrogen--containing creams can be considered.

Also, after careful risk-benefit assessment and extensive informed consent, HRT with oestrogen-progestin combination may be prescribed after operated early endometrial cancer. However, it is not recommended in advanced stage cancers **(5)**.

• Cervical, vulvar, and vaginal cancers:

In these cancers, HRT can be safely recommended following consultation with the doctor **(5)**.

- **Ovarian cancer:**

Here again there is not enough scientific evidence to make a reliable statement regarding the safety of HRT after treatment of ovarian cancer **(4)**.

However, according to previous studies, hormone therapy with oestrogen and progesterone combinations is possible after careful risk-benefit assessment.

Natural hormone replacements

Several alternative and complementary treatments have been advocated to reduce symptoms of low oestrogen, including phytoestrogens (soy and red clover), black cohosh, evening primrose oil, dong quai, panax ginseng, wild yam, and vitamin E.

For some of these treatments, studies have shown a slight reduction in symptoms. However, these studies are small and of low scientific quality. In addition, they do not provide information about whether the treatment is safe. **(6)**

VII. Symptoms of menopause

Common menopause symptoms include:

- **Hot flashes:** a short sudden feeling of heat that brings sweat, usually around the face, neck and chest, but sometimes involving the whole body. It might lead to a sense of feeling cold.
- **Night sweats:** hot flashes that occur at night and don't let you sleep
- **Difficulty sleeping** that may make you feel tired and irritable during the day
- **Loss of libido:** reduced sex drive
- **Loss of memory and concentration, brain fog**
- **Vaginal dryness** that might lead to itchiness and pain and discomfort during sex
- **Headaches**
- **Psychological disorders**, including anxiety and mood swings
- **Heart palpitations:** heartbeats that suddenly become more noticeable
- **Hair loss**
- **Dry and ageing skin**
- **Joint stiffness, aches, and pains**
- **Reduced muscle mass**
- **Recurrent urinary tract infections**
- **Impatience**
- **Weight gain**

Menopause can also increase your risk of developing osteoporosis (decreased bone density).

VIII. Don't Panic! Treatment and support for surgically and medically induced menopause

Artificial menopause is defined as surgical removal of the ovaries or other intervention (e.g., radiotherapy or cytostatic chemotherapy). Some of the symptoms of climacterium—menopause—get worse and can cause symptoms beyond what is considered physiological.

If the ovaries on both sides are removed, your body can no longer produce female hormones. This deficiency causes vegetative symptoms of climacterium: hot flashes, flushing, fluctuations in blood pressure, unjustified mood swings, depression. This can make you more susceptible to cardiovascular diseases, high blood pressure, myocardial infarction, and you may lose a significant part of their bone mass sooner (i.e., osteoporosis develops), ascending infections and inflammations become more common due to the atrophy of the vaginal and bladder epithelium. Difficulty urinating may develop, and sexual intercourse may become painful.

With hormone-shedding agents, these symptoms can be alleviated or eliminated, obviously considering age and other factors such as the type of disease, and hormone sensitivity.

Most women who undergo a surgical intervention which results in ovarian insufficiency develop severe symptoms of oestrogen deficiency. Loss of ovarian hormones induces sudden and early menopause with increased risk of osteoporosis, cardiovascular diseases, dementia, genitourinary health problems, and sexual disfunction. The onset of syndromes is sudden and more dramatic than in natural menopause.

Because of the many symptoms associated with the lack of oestrogen, your doctor may offer you a hormone replacement therapy (HRT).

The current opinion in gynaecological oncology suggests ovarian conservation in every woman under age 45, if possible, or starting HRT after the operation as soon as possible and continuing until age 51 or older.

The treatment and support may be **hormonal replacement therapy and nonhormonal therapies.**

Non-hormonal therapies and support

Lifestyle and behaviour

A healthy diet and lifestyle and regular exercise may improve your quality of life and reduce the risk of cardiovascular diseases at any age. Jogging, Pilates, or yoga may be appropriate in maintaining a healthy weight. Limiting sweets and caffeine intake and smoking cessation may be helpful also. Avoiding spicy food and alcohol can help for hot flashes.

Psychological tools, such as cognitive behaviour therapy and relaxation techniques, are useful as well.

SSRI, antidepressants

For severe mood disorders or depression, you may need prescribed medication, like SSRI, gabapentin, or clonidine. Consult your GP or oncologist for the options available to you.

Complementary and herbal therapies

Many women undergoing natural menopause use herbal medication, most of them suggested to combat hot flashes. These over-the-counter medications are not tested as rigorously as prescribed medications are, and they may even interact with oncology medication, so please consult your oncologist before taking them.

They include:

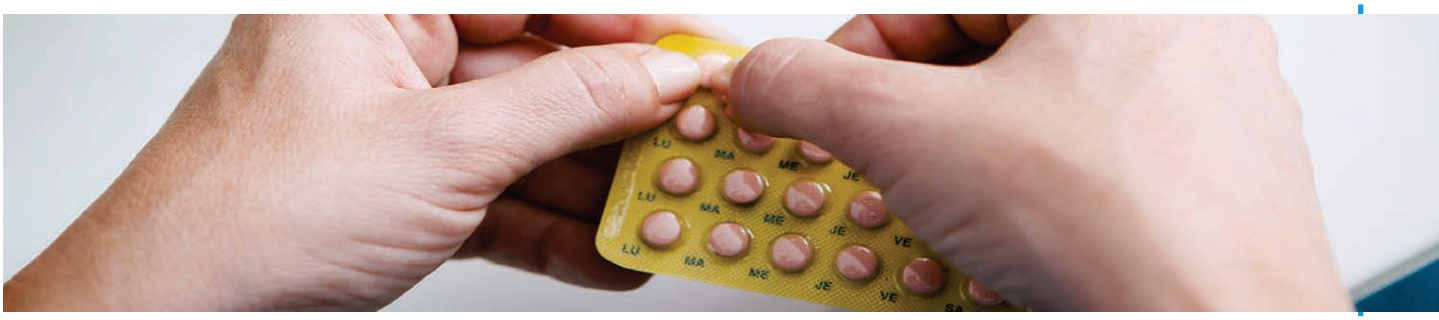
- Black cohosh
- Phytoestrogens, red clover
- Evening primrose
- Flaxseed
- Ginseng
- Maca
- Pine bark

Hormone Replacement Therapy (HRT)

Hormone replacement therapy may consist of only oestrogen, or oestrogen combined with progesterone. If you still have your uterus, you may need progesterone to counteract the long-term oestrogen effects on the endometrium, such as hyperplasia or cancer.

Oestrogen-only therapy is suitable after a hysterectomy. These medications are available as tablets, transdermal patches, vaginal creams, or gels. They contain different kinds of oestrogen. Patches or gels are better for those who have cholesterol problems or hypertension and are at higher risk for venous thromboembolism.

Oestrogen and progesterone therapy is prescribed if you still have an intact uterus. This may be a cyclical medication, in which oestrogen is given daily and progesterone is given for 14 days in a month, or continuous. Progesterone is mostly taken orally, while oestrogen can be a tablet, transdermal patch, or gel.



Tibolone is a steroid hormone that acts via its metabolites. The metabolites have androgen-, progesterone-, and oestrogen-like characteristics. Tibolone is effective against menopause symptoms and bone loss but does not affect endometrial or breast tissue.

HRT is useful in reducing vasomotor symptoms, such as hot flashes and night sweats, can help maintain the libido, and reduces the risk of osteoporosis. It helps prevent vaginal dryness and atrophy. Hormone replacement lowers the risk of developing cardiovascular diseases or stroke and improves cognitive function.

As with every medication, hormone replacement therapy also has disadvantages and risks.

HRT is associated with an increased risk of:

- Venous thromboembolism, especially if you have a BMI above 30 kg/m^2
- Stroke, a risk which increases with age
- Gallbladder inflammation
- Breast cancer (when taking combined oestrogen-progesterone therapy for a long time period; oestrogen-only therapy does not increase the risk of breast cancer)

If your doctor puts you on an HRT, it is essential to regularly go to breast screening and mammography. The therapy should be reviewed annually. Women aged 60 and older are at higher risk of complications or side effects.

IX. Physical, psychological, and mental changes

We must deal with the consequences of menopause one by one. It is not an easy task because when you solve one, others appear. The consequences could be symptoms (your skin and hair changes, hot flashes, bad sleep) or diseases (osteoporosis) with their own symptoms (pain or difficulty in moving).

Some can be prevented, some of half-prevented, and some not prevented at all.

Hair Loss

You may experience hair thinning on the front, sides, or top of the head. Hair may also fall out in large clumps during brushing, hair washing, or little by little and so you only notice it on clothes or the floor.

You may also find that your hair grows much more slowly.

Not only can menopause alone cause all of this, but other factors may also play a role. Be sure to pay attention to these when preventing.

Advice:

- Get moving
- Eat well
- Drink more water—hydrate

You can find natural supplements which include vitamins and minerals—they are also called hair beauty vitamins—contain biotin, which helps maintain the normal condition of the hair, as well as zinc, copper, vitamin C and vitamin E, which help protect cells from oxidative stress. **(7)**

Skin

Dry skin is one of the hallmarks of menopause. As oestrogen levels decrease, the epidermis of the skin thickens, which reduces fat production. The skin dries out, tiny micro-tears can form, allowing moisture to escape and irritants and allergens to enter.

As a result, the skin becomes easily irritated and inflammatory skin diseases may increase.

It is best to switch to a gentle cleanser, ideally a creamier cleanser, e.g., face milk and non-alcoholic tonic. A good quality moisturizer should then be used that contains ingredients such as ceramides, shea butter, fatty acids, squalene, glycerine, and hyaluronic acid to hydrate and help maintain skin hydration, elasticity and colour. Proper facial cleansing is very important both in the morning and in the evening. Do not use soap, as it may dry out the skin.

During menopause, your skin may turn pale and look dull. Exfoliation is an important part of facial care, but it should not be overused. Once a week is enough. Alpha hydroxy acids (AHAs) help remove dead skin and make the skin brighter. Glycolic acid, an AHA, is ideal because it is also moisturizing.

Gentle massage is refreshing and good for blood circulation in the face and your scalp.

The skin is our largest organ. Healthy skin function depends on external and internal factors. Hormonal changes, for example those that are experienced during puberty, pregnancy, breastfeeding, and meno-

pause all affect the skin. As you age, the division of connective tissue cells slows down; the epidermis thins; the metabolism of the skin and the production of collagen and elastin slow down; and the skin loses its moisture content and elasticity.

It is natural that the production of female hormones gradually decreases with age. But after oncologic surgery, this gradual decline instead happens overnight, culminating in the effects of various treatments on the skin (chemotherapeutic agents kill all the rapidly dividing cells, not the skin's epithelial cells).

Advice:

Our most important tasks are moisture replenishment, inflammation reduction, and protection from harmful light.

Its main active ingredients are hyaluronan, retinol (vitamin A), vitamin E, yam root extract, zinc oxide, red grape extract, algae, coconut oil, squalane, kaolin, marigold. **(8)**

Morning routine: face wash, toner, sunscreen

Evening routine: face wash, toner, serum, regenerating night cream.

If you have the opportunity, please ask a beautician for advice and assistance.

Dental health

As you have read several times in this brochure, the levels of oestrogen and progesterone affect many things, including the health of our mouth and teeth. Their levels have an effect on saliva production, a decrease in which results in an increased risk of dry mouth. Saliva rinses bacteria and food particles off the teeth and prevents the gums from retracting. Cavities, gum disease, and bad breath are common. Menopause also increases the chances of developing "burning mouth syndrome," which causes a burning sensation that can extend from the tongue to the lips, gums, face, palate, and throat. If you experience mouth pain, dry mouth, sores, or other problems with your mouth or teeth, your dentist may prescribe a mouthwash, dietary change, or even medication. **(11)**

Advice:

- Brush your teeth at least twice a day
- Be sure to use dental floss once a day—after brushing your teeth in the evening
- See your dentist regularly

Sleeping

The most common sleep problems include hot flashes, insomnia, sleep-disordered breathing, restless legs syndrome, and disorder of periodic limb movements. These disorders are associated with involuntary leg movements that cause discomfort and disturb sleep. **(9)**

Melatonin, often referred to as a sleep hormone, is a central part of the body's sleep-wake cycle. Its yield increases with the evening darkness.

Advice:

- Avoid heavy meals and spicy or acidic foods before going to bed, as these can cause hot flashes.
- Avoid nicotine, caffeine, and alcohol, especially in the late afternoon and early evening. These substances can also disrupt sleep and impair the quality of sleep
- Try to avoid heavy fluid intake a few hours before going to bed. **(10)**
- Anxious and stressful thoughts can keep you awake at night, making it harder to fall asleep. Regular exercise can help with this, and mild sleeping pills are also available over the counter.
- Try relaxation techniques before going to bed, such as meditation or deep breathing, or soaking in a large tub of water.
- Have a routine to fall back asleep if you wake up due to night sweats (don't turn on the lights, don't turn the TV back on)
- Have a change of clothes on the bedside table or near the bed
- Wear light pyjamas to keep you cool at night or sleep naked. Another good option is a dehumidifying tracksuit.
- Use cotton bedding
- Sleep with an open window to get more oxygen in the room at night
- Lie down and get up at the same times every day.
- Don't take a nap in the afternoon. If you must, do it for only a maximum of 20 minutes.
- Visit a sleep centre to discuss severe sleep disruption

Mood

Your mood can be affected by many things, from quarrelling with a loved one to a traffic jam. It is not always clear what causes mood swings and the accompanying irritability. It is important to mention that mood swings are not the same as depression.

Oestrogen helps regulate a number of hormones that have mood-enhancing properties, e.g., serotonin, norepinephrine, dopamine.

When oestrogen levels change, so can your mood. Decreased oestrogen levels in some women can sometimes make you forgetful, foggy, or blank.

Unfortunately, menopause can cause physical challenges that can negatively affect your mood. If you are anxious about aging or experience stress about the future, this can cause nervousness and mood swings.

As we mentioned above, sport is very efficient on mood, as are magnesium supplements, healthy eating, yoga, meditation, and of course, good sleep.

Sessions with a psychologist can also help you feel better.

Advice:

- Short-term hormone replacement therapy (HRT) may be a good option for some women to relieve mood swings and other menopausal symptoms. Certain types of HRT increase the risk of breast cancer, blood clots, heart disease, stroke.
- Be sure to ask your doctor to help you weigh these increased risk factors with the potential benefits of HRT, taking into account the severity of your symptoms. HRT is available in several forms, including vaginal spots, creams, pills. HRT can be the solution to other side effects of menopause.
- Acupuncture treatment can also help by balancing hormone levels and increasing the production of dopamine and noradrenaline.

Mental health

There is good news and bad news. Commonly, menopause causes memory problems, but there is no demonstrated link to subsequent dementia. **(12)**

Sometimes, we can be disappointed with ourselves because we do not remember things, or because we can't think of a word. It's scary, but it might give you some reassurance that it's unfortunately also a part of menopause.

Advice:

- Accept it.
- Do mental exercises.
- If you feel that your mental health is suffering, talk to your doctor!

Sexual health

See the next section

SEXUAL HEALTH IN MENOPAUSE

Menopause is a natural transition phase in life that is often compared to puberty with its hormonal ups and downs.

It can cause some physical and emotional changes that can affect sexual health and needs time to adapt. Importantly, not all women experience these changes.

Author of Sexual Health in Menopause:
Assoc.Prof. Dr. Kathrin Kirchheiner, Medical University Vienna

Vaginal dryness and irritation

Lower hormone levels can cause changes in the blood vessels and tissue of the vagina and vulva. The vaginal lining may lose the folds and the vaginal tissue becomes thinner and dryer. This condition is called vaginal atrophy and can make sex uncomfortable or even painful. A less-lubricated vagina becomes more vulnerable for irritation and bruises, as the friction intensifies. For some, it also leads to tissue bleeding during or after intercourse.

If additional inflammation develops, this is called atrophic vaginitis. It can lead to discomfort, itching, swelling, burning, soreness, and pain.

TIPS & TRICKS for vaginal dryness and irritation

- Use an over-the-counter vaginal lubricant when having penetrative activities (such as the use of fingers, vibrators, or intercourse). Make sure it is water-based, without perfume or any irritating ingredients. Remember to re-apply regularly during sexual activity, as the lubricant evaporates with time. Non-water-soluble lubricants (silicone or oil-based) are often not compatible with condoms and sexual devices and may enhance bacterial growth that can trigger vaginosis, a bacterial infection.
- Use an over-the-counter vaginal moisturizer (glycerine-min oil-polycarbophil) to rehydrate dry mucosal tissue. It is absorbed and adheres to the vaginal lining and is applied every few days.
- Avoid soap, bubble bath, and any female hygiene sprays or lotions around your vulva and vagina, as they can cause irritation.
- For severe vaginal atrophy and related sexual problems, your doctor might prescribe you vaginal oestrogen cremes, rings, or tablets.

Difficulties with vaginal elasticity causing pain during intercourse

A decrease of oestrogen can lead to a loss of elasticity of the vaginal and pelvic tissue. This may cause a feeling of tightness or shortness during intercourse and lead to discomfort, distress, or even pain.

TIPS & TRICKS for pain during intercourse

- If penetration feels tense and causes discomfort, try to increase the blood flow in your vagina first. Before having intercourse, foreplay should be prolonged, and an orgasm helps to make the vagina more elastic for later penetration.
- Don´t ever allow for penetration when you do not feel ready for it. The anticipation of discomfort or pain usually not only eliminates sexual arousal (and sexual desire in general), but also triggers tightening of the pelvic floor muscles, which in turn can lead to more discomfort in a vicious circle.
- Talk openly to your partner about any feeling of discomfort or pain. Make it a joint project to explore different ways for physical intimacy that do not lead to distress.
- Regular masturbation in general boosts vaginal blood flow, both from arousal and orgasm. This can contribute to keeping the tissue more elastic.
- Regular pelvic floor muscle exercises (both muscle strength/endurance training and relaxation) can increase blood flow to the pelvic area and vagina and strengthen the muscles involved in orgasm.
- Try different sex positions that allow you to control the depth of penetration and movement.
- Use a soft silicone penis ring as a pain buffer during intercourse. It reliably reduces the depth of penetration and isn´t uncomfortable for your partner. The pain buffer can let you feel safer, so you are able to relax and enjoy intercourse more.

Difficulties with arousal and orgasm

The effect of lower oestrogen and changes in the vascular and nervous system can reduce the blood supply to the clitoris and lower vagina. The clitoris may become less sensitive to stimulation. It may be difficult to become aroused or stay aroused.

This may also influence orgasm. It can feel differently than before, for example less intense, and can take longer to achieve.

TIPS & TRICKS for arousal and orgasm

- Don´t wait for spontaneous sexual desire to ignite sexual activities. Engage in sexual activities with a positive attitude, take time to ease into, it and approach the matter without expectations and pressure. In many cases, your body will slowly respond with building arousal. This is called responsive desire.
- Adapt to a slower arousal with a prolonged foreplay and/or additional self-stimulation.
- Accept a change in sexual routines with your partner; sexual activities may take more time than in earlier years.
- Again, open communication with your partner is the key to adaptation and changes, especially to exploring new sensual ways of intimacy.
- Try different kinds of vaginal and clitoral stimulation with a variety of sex toys (G-spot vibrators, dual vibrators, external vibrators, clitoral air pulse stimulators, etc.).
- Masturbation is a good way to explore and discover new ways of stimulation, as you can focus completely on yourself.
- Sex toys can also be integrated into sexual activity with your partner, even during intercourse.
- Add some mental stimulation with the help of sexual fantasies or erotic material.

Difficulties with lower sex drive

The effect of hormonal changes, in particular the drop in oestrogen, on sex drive remains unclear. Desire usually, but not always, decreases gradually with age. Many women experience a drop in libido beginning in their midlife years, others notice no change and, in some women, the sex drive even increases.

The decrease in libido is multi-factorial by nature and can not only be attributed to the level of oestrogen or testosterone.

The female sex drive can be sensitive to physical, emotional, and mental changes, relationship factors, body image, socio-cultural influence, and much more.

To give some examples:

Physical changes: Female sexual desire can be very vulnerable to negative experiences. Every sexual activity with discomfort, stress or pain can reduce future sexual desire and stimulates avoidance behaviour.

The same is true for a lack of enjoyment, monotony, or boredom during sex.

Emotional changes: The emotional impact of fluctuating hormones, specifically on sleep, energy, and mood, can also affect the experience and enjoyment of sex. On the other hand, a low sex drive or the inability to enjoy sex with your partner often threatens self-esteem and intimacy.

Relationship quality: Couples with a satisfying sex life and good sexual communication before menopause are more likely to adapt to changes and keep a fulfilling sex life during and after menopause.

Body image: Menopausal changes have an impact on the metabolism which can lead to struggle with weight gain. Women who feel uncomfortable in their body are more vulnerable to decreased sex drive.

Socio-cultural influence: In the Western world, sexuality is still attributed to the „young and beautiful" in media and TV. This can have an impact on self-image and expectations. Some may feel that sex is inappropriate at a certain age and is associated with shame and taboo. Others may take midlife as opportunity to free themselves from the obligation of sexual activity in a long-term relationship and feel deliberate to refuse marital duties. Fortunately, more and more positive role models emerge and de-stigmatize the myth that sex naturally ends at a certain age.

To paint a positive picture: In midlife, some women experience a liberation from burdens as they no longer must worry about menstruation or pregnancy. Menopause can also be experienced as an exciting new stage in life: Women have more sexual experience and self-esteem; they know their body better and are more courageous about sexual experimentation. Depending on the family makeup, some women also enjoy a liberation from childcare responsibilities. This allows them to focus more on themselves and their own needs, but also facilitate more quality time and intimacy with their partner.

However, adaptation to menopausal changes sometimes needs a pro-active approach and effort. If you keep an open mindset and curiosity, this can strengthen your relationship.

TIPS & TRICKS for low sexual desire

- You can find self-help strategies in this ENGAGe booklet „Overcoming low sexual desire - the female edition. Tips and tricks for an active sex life with yourself and/or your partner". It is primarily written for cancer survivors with low sexual desire after diagnosis and treatment, but the strategies are universal and applicable for every woman.
- If you need professional help with sexual problems in menopause, the following interventions are recommended in treatment guidelines: cognitive-behaviour therapy, mindfulness training, couples' exercises including sensate focus, bibliotherapy, and use of erotic materials.
- Pharmacotherapy for low female libido is in general limited. The effects of systemic hormonal therapy (oestrogen alone or in combination with progestogens) on sex drive are controversially discussed. The drug flibanserin has been approved by the FDA (only in the United States) but has some side effects and needs abstinence from alcohol consumption. Another option is the off-label prescription of transdermal testosterone, after a cost-benefit discussion with your treating physician. Other agents are in development (e.g., bupropion).

ENGAGe has a brochure for helping to find your lost libido:
https://engage.esgo.org/resources/loss-libido-cancer/

X. Lifestyle: An essential part of treatment

In this part of the brochure, we advise you how to ease complaints that can occur during menopause. These tips will be divided into sleep, food, exercise, and some tips around life in general.

Sleep: rest mode, breathing exercises—and don't panic!

A good night's rest is very important. However, this can be problematic during menopause. Make sure you'll get in a type of 'rest mode' an hour before you go to sleep. Which means no stress, coffee, alcohol, TV, or phone. This will make it easier to fall asleep.

Breathing and relaxation exercises may help you fall asleep. This may also help when you're awake at night. Focus on your breathing in your lower belly, relax your body, and try not to be concerned or panic about the fact that you're not sleeping, since that might keep you awake longer.

Food: control your waistline and hot flashes

During menopause you might gain weight due to the dominance of oestrogen. Moreover, food can also have an impact on hot flashes.

Make sure you eat varied types of food. Eat as natural as possible with unsaturated fats, lots of protein and vegetables, and be careful with refined sugar.

Unsaturated fats can be found in nuts, seeds, avocados, olives, and fish like salmon.

Protein can be found in plant proteins like hemp seeds, chia seeds, quinoa, tempeh, legumes, soymilk/soy yogurt, pumpkin seeds. And also, in animal proteins like meat, fish, eggs.

Healthy carbs contain a lot of fibre. They can be found in fruits, vegetables, brown rice.

Depending on your age and your activity level, you might have to reconsider the amount of food that you're eating on a daily basis. When you are less active, you also need less food.

Drinking two litres of water on a daily basis will help you with your weight, but it can also help decrease the intensity of your hot flashes.

Hot flashes can be triggered by alcohol, smoking, coffee, spices like peppers and ginger. There are also some known foods that can help prevent a hot flash. These contain phytoestrogen.

Examples of phytoestrogen are soybeans, tofu, tempeh, soy beverages, linseed, sesame seeds, wheat, berries, oats, lentils, rice.

Exercise: reduce waistline, stress and mood swings and get stronger bones

Exercise is always healthy for your body, but during menopause it has some extra benefits.

By moving as much as possible your metabolism will be better and it will bring your hormones in balance. Besides taking vitamin D3, K2, calcium, and magnesium, moving will also improve your bones, which is important to avoid osteoporosis. You can already increase your mobility by taking the stairs or riding your bike or walking to the store.

Training with weights is also very effective. Your muscle mass will decrease during menopause. And less muscles means a slower burn of calories, so it's important to train using weights. Using weights will even make you lose weight faster than by doing cardio. Using your own bodyweight (push ups, squats, etc.) is just as effective as using actual weights.

Other types of beneficial exercise are yoga and hiking. These are also very helpful for releasing stress. Less stress means fewer hot flashes, mood swings, and sleepless nights.

Mindfulness and meditation can also be very helpful in relieving stress symptoms.

Life in general: be prepared, relaxed and share with your loved ones

If you are someone who tries to do too many things at once, during menopause it might be good to take things a bit easier. Be kind to yourself! Remember, you aren't only experiencing the effects of menopause, but also of all the other issues concerning your cancer treatments.

Plan your day wisely and give yourself enough time to go from one appointment to the next or from one task to the next. Moreover, don't plan more than your energy level can handle. This way you will avoid stress and therefore hot flashes. To help your memory, it is a good idea to write down what you need to do on a daily basis, so you don't forget anything. (This might also decrease your stress level.)

It is okay to say 'no'. Make the word 'no' your best friend. Or just say that you will get back to someone before committing to a task or responsibility. This will cause less stress and will help you keep your available energy at a good level.

Dress smart: wear layers.

This way it will be easy to take off a layer during a hot flash and put it back on when you get cold again afterwards. Put some essentials in your purse like tissues, deodorant, peppermints, a small fan, and a toothbrush and toothpaste for immediate refreshment.

Talk about your challenges with the people that are close to you. Though you might be younger than the regular age to get through menopause, all women go through it and know about the discomfort. Share your story and learn from one another.

XI. Tips and tricks: Clever ways to get through menopause

- **Recognize the symptoms and if necessary, find a coach or doctor to help**
- **Measure your vital statistics**

There is bigger chance of getting a chronic disease after menopause. Oestrogen protects heart and blood vessels, so there is a larger risk of arteriosclerosis and high blood pressure. Once a year, it's important to measure your blood pressure, vitamin D levels, waist circumference, weight, blood sugar levels, and cholesterol levels.

- **Adapt your lifestyle**

Take time to relax. Stress makes the symptoms worse, which can cause more hot flashes or mood swings.
Relax through hugging, sexual contact, thoughts of loved ones/pets, meditation, a walk.
Try to integrate relaxing moments in your daily life.
Make sure you get enough rest: go to bed on time
Food: eat and drink a variety of fresh food
Exercise: work out 30–45 minutes a day. Use weights. Any type of exercise is good.

- **Talk about it**

Talk with family and friends or a professional. Consider medication, sessions of psychological assistance, or visiting a specialised centre.

- **Accept the new you**

You are not the woman you were before the cancer treatments. You might experience fear, fatigue, and a different self-image. This might be increased by your body changing. It is important to realize that these symptoms are part of the reduction of the hormone balance. You are not 'crazy'—your body is changing.

Embrace the fact that you are ageing. See the positive side of things. You have overcome cancer and you are alive!

TIPS from survivors

- Reduce intake of coffee, alcohol, dairy, and meat
- Take an evening walk to relax and to get a better night's rest
- Put a cold washcloth on your neck during a hot flash
- Practice yoga
- Don't panic during a hot flash
- Wear layers

TIPS for hot flashes & sweats

- Layer clothes
- Wear sweat absorbing/wicking (sport) clothes
- Prepare ice packs or frozen towels
- Wear waterproof make-up and mascara in summer
- Equip your home with fans (the old-fashioned ones or also USB-charged ones)
- Keep thermo-cups with filled with ice in your bag when you leave home
- Wear silk at night
- Keep your feet out of the blankets while sleeping for easier heat regulation (One patient even bought a bed that can regulate the temperature, but this is very expansive and not affordable for many)
- Be careful with ventilators blowing air constantly / directly: this can cause some problems when you're covered with sweat—muscle stiffness, pain, colds, etc.

Psychological tips to help mood swings and mental instability

- Mindfulness practice (much easier than meditation! It takes less time and can be used more often, even while doing other things)
- Journaling (emotionally stabilizing, gives time for self-reflection)
- Keeping a gratitude journal (This is something that has really helped a lot of my patients change perspective. There are wonderful iPhone apps available —search for the orange one with the heart called "Gratitude")

XII. Personal stories:

You are not alone!

"During my cervical cancer surgery, my doctor left my ovaries inside. I was very happy since I was only 30 years old. My postoperative histology, on the other hand, confirmed metastasis in a lymph node, so I also had to receive radiation therapy and chemotherapy. Radiation therapy shot my ovaries. Symptoms like hot flashes, irritability, decreased libido caught on very quickly. Of course, despite my symptoms, I was assured that this was not the case, my doctor said in vain that the ovaries were no longer functioning. I didn't want to take hormone medication. Until my radiotherapy doctor told me: I don't want you to fall once and as a result break your pelvis bone and get into a wheelchair because of it.

I think that was the moment when I actually understood that menopause isn't just about being more impatient. I have to care for myself. I have been taking the hormone pill for years, I go for abdominal and breast ultrasound every six months, and mammography every year. I pay attention to my teeth, go to oral hygiene, and take vitamins. Despite all difficulties and my changed quality of life, I am OK."

Icó Tóth, cervical cancer survivor

"I was 48 when diagnosed with ovarian cancer. I had debulking surgery, six rounds of chemo, and maintenance therapy afterwards. During chemo I didn't realise that I suddenly found myself in menopause. I didn't experience hot flashes at all, but my memory was worsening, and I developed hypertension, high levels of cholesterol, and joint problems. I was busy with my ovarian cancer journey , so it took time for me to realise that some symptoms were due to menopause. My doctor didn't put me on hormone replacement therapy because of my age, but now I'm doing well. I exercise regularly, do yoga, relax, and try to have a healthy diet. I accept the changes of my body, mind and soul, although it is not always easy."

Kata Köblös, ovarian cancer survivor

"I was diagnosed with endometrial cancer at the age of 45. Not young, but still in my reproductive years. My therapies were total hysterectomy, chemotherapy, and radiation.

Total hysterectomy led me to surgical menopause. I didn't have many symptoms since none of the women in my family that went through natural menopause had any severe symptoms.

But I want to share with you another issue that came up after menopause. A few months after my

surgery I had a dream that I had menstrual bleeding. I woke up in fear thinking that the cancer came back. Fortunately, that day I had my appointment with my psychotherapist. I told him my dream and he asked me whether I think I am still productive and "fertile". This was a very difficult question since many women in many countries think that "fertility" and productivity ends when you reach menopause naturally or induced. Especially when a woman, even younger than 45 is menopausal. I have to say to these women and to all women that we continue to be productive and fertile, maybe in another way, on another level, more symbolic, but we are. We are capable of giving birth to ideas, or projects, to care and nourish them, to see them grow. We can offer love and care to other children, symbolic or real. We can still offer a fertile ground for anything new to grow and flourish. I know I have and, looking back at my life, I am more productive and fertile after menopause!"

Maria Papageorgiou, endometrial cancer survivor

"I had cervical cancer at 39. During surgery, the doctor hung one of my ovaries higher in my belly in the hope that the ovary would continue to work after radiation. Unfortunately, it didn't. A doctor had recommended that I continue to take the birth control pill during my treatments, and I decided to continue afterwards as well. I was not ready to be in menopause at this age. Especially since I'd also developed a lot of late effects from my treatments. At the age of 48, I started taking hormone replacement pills, which I will take until I reach 50. Hot flashes are my biggest problem, which I try to reduce by decreasing my stress level."

Kim Hulscher, cervical cancer survivor

"At the age of 37, I entered menopause early due to radiotherapy for cervical cancer. I didn't want to try hormone therapy anymore as I had a history with depression and the first two types I tried triggered the depression. The hot flashes were not too bad, but I still had a list of complaints: Sleep problems, mood swings, decreased libido, joint pain, concentration problems, lack of memory, hair loss, and early skin aging. After five years I was done with it and decided to give it one more try: a light dose of hormones, and it worked! Since I started hormone therapy and adjusted my lifestyle, some problems have improved greatly.'

Judith Kamminga, cervical cancer survivor

XIII. Experts can help

You can contact:

- **Your general practitioner**
- **Gynaecologist**
- **Endocrinologist**
- **Special menopause consultant**
- **A menopause society in your country**

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ENGAGe recommends contacting your local patient association!

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