

Early menopause – chemotherapy and radiation therapy

Chemotherapy and radiation therapy for cancer and other conditions can cause temporary or permanent loss of your menstrual periods, which can lead to menopause and infertility.

If this occurs before the age of 40, it is known as premature ovarian insufficiency (POI) and between the ages of 40 and 45, it is known as early menopause. POI and early menopause can also happen for other reasons (see AMS fact sheet – *Menopause before 40 and premature ovarian insufficiency*).

Chemotherapy and radiation therapy can be toxic to the ovaries

Chemotherapy or radiation therapy can cause early menopause because these treatments are toxic to the ovaries, especially when used at high doses to treat cancer. Whole-body radiation therapy and radiation in the pelvic area are more likely to affect your ovaries.

At birth, ovaries contain one million immature eggs (primordial follicles). The number of eggs naturally decreases until, at menopause, less than 1000 eggs remain. When chemotherapy or radiation therapy damages the ovaries, women can have fewer remaining immature eggs and/or the immature eggs are unable to mature.

Loss of your period after chemotherapy or radiation therapy can either be temporary or permanent. If your period returns, that does not necessarily mean that your fertility returns.

Risk factors for entering early menopause

The likelihood of entering POI or early menopause after chemotherapy or radiation therapy increases:

- with increasing age
- when fewer eggs remain in the ovaries
- with higher doses of chemotherapy or radiation
- with radiation therapy of the whole body or pelvic area
- with some types of chemotherapy
- when doses of chemotherapy and radiation are given together.

Symptoms and health consequences of POI and early menopause

The signs, symptoms and health consequences of POI and early menopause after chemotherapy and radiation therapy include:

- missing your period or having infrequent periods – an early symptom of POI or early menopause
- menopausal symptoms (either with or without your period) including

MAIN POINTS

- **Chemotherapy and radiation therapy for cancer and other conditions can cause temporary or permanent loss of your menstrual periods and menopause.**
- **Before the age of 40, this is known as premature ovarian insufficiency (POI).**
- **Between the ages of 40 and 45, this is known as early menopause.**
- **Early menopause and POI can cause infertility and have short- and long-term health consequences such as heart disease, osteoporosis and memory problems.**
- **Some women who have chemotherapy remain fertile, so it is important to use contraception if you do not want to become pregnant or if your doctor advises you that it is not safe to become pregnant.**
- **Speak with your doctor about treatments and other options to manage any infertility and long-term health consequences.**

- hot flushes
- mood changes
- problems sleeping
- aching joints
- dry vagina or poor lubrication during sexual arousal.
- psychological distress and increased risk of anxiety and depression because of:
 - a diagnosis of cancer or severe medical illness
 - treatment with chemotherapy/radiotherapy and the related long-term consequences
 - infertility – women often feel confused, sad, old before their time and have mixed feelings about other women's pregnancies.
- short and long-term health risks – infertility, osteoporosis and heart disease.

Diagnosis of POI and early menopause

POI and early menopause are difficult to diagnose and the process can take many months. This can be a very stressful time and women should speak with their healthcare team for support and management options.

Criteria for a diagnosis of POI or early menopause include:

- more than four months without a period
- follicle stimulating hormone (FSH) levels in the menopausal range on two occasions at least 4–6 weeks apart.

If you have any concerns or questions about options to manage your menopausal symptoms, visit your doctor or go to the Find an AMS Doctor service on the AMS website.

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Early menopause – chemotherapy and radiation therapy continued

Managing fertility issues

Chemotherapy and radiation therapy might affect your fertility. Thinking about whether you will be able to have children and preserving your fertility can be overwhelming, especially when added to the stress of a diagnosis of cancer or other serious illness. Speak with your healthcare team and get the support you need.

If losing fertility is a possibility, your doctor might be able to suggest options to try to preserve your ability to have children. Monthly injections with a gonadotrophin releasing hormone analogue during chemotherapy may help to preserve ovarian function. The most effective option is to have your eggs or embryos frozen before you begin treatment.

Some women who have chemotherapy remain fertile, so it is important to use contraception if you do not want to become pregnant or if your doctor advises it is not safe to become pregnant.

For those who have developed early menopause between 40 and 45 years, some women choose to live a childfree life, while others adopt or foster children.

Treatment of POI and early menopause

Women with early menopause should discuss with their doctor the possibility of using hormone therapy. In women more than 50 years of age, hormone therapy is called menopausal hormone therapy (MHT). In women who are aged less than 50, the same hormone therapy can be called hormone replacement therapy (HRT) because the treatment is replacing the hormones that the ovaries would be producing if you hadn't had chemotherapy or radiation therapy.

If you choose to use HRT, your doctor might advise you to continue this treatment until the typical age of menopause (51 years).

HRT options include:

- oestrogen tablets, patches, gels and topical vaginal treatments – if you have had a hysterectomy (see AMS fact sheet – *What is MHT and is it safe?*)
- oestrogen plus progesterone – if you have not had a hysterectomy
- combined oral contraceptive pill as a replacement hormone – if you have no significant risk factors (such as risk of blood clotting, past blood clots or if you are a current smoker).

Oestrogen therapy is not suited to everyone and is best avoided if you have breast or endometrial cancer. Your doctor can suggest non-hormonal options to help manage hot flushes and other symptoms.

If contraception is required, hormonal options include the oral contraceptive pill or an intrauterine device plus oestrogen (usually as a patch or gel). If your doctor does not recommend hormones for your situation, discuss non-hormonal contraceptive options.

Managing health risks associated with POI and early menopause

Adopting healthy lifestyle changes (see AMS fact sheets – *Lifestyle and behaviour changes for menopausal symptoms* and *Weight management and healthy ageing*) can reduce the risk of some of the health impacts associated with POI and early menopause. These health impacts include:

- osteoporosis or bone loss
- cardiovascular/heart disease
- learning and memory disturbances
- emotional issues.

It is widely known that regular physical activity, a healthy diet and healthy sleep patterns can improve these problems, no matter what the cause.

In addition, regular check-ups (including blood tests and bone scans) with your doctor can help you to manage your health.

Osteoporosis

Osteoporosis in women with POI and early menopause can be caused by:

- low levels of oestrogen
- low levels of calcium in the diet
- smoking
- low levels of physical and weight-bearing activity
- some types of chemotherapy and medications.

In addition to lifestyle changes (quitting smoking, engaging in regular weight-bearing activities, and ensuring adequate dietary intake of calcium and vitamin D) women should have regular bone scans every one or two years. Use of HRT can also help to maintain bone health.

Cardiovascular or heart disease

POI and early menopause can result in an earlier increase in the risk of heart disease in women.

Taking HRT early and continuing treatment until the age of a natural menopause (50–55 years) can reduce the risk of heart disease. A healthy lifestyle and regular check-ups for high blood pressure, diabetes and fats in the blood will help you manage your heart health.

Learning and memory problems

There is evidence that chemotherapy can cause memory problems, but there is limited evidence that low levels of oestrogen affect memory. Taking HRT early and continuing treatment until the age of a natural menopause (51 years) might reduce the risk of learning and memory problems.

Emotional issues

In addition to a diagnosis of cancer (or severe medical illness) requiring chemotherapy/radiation therapy, women also have to cope with possible infertility and other long-term health impacts.

It is only natural to feel distressed and some women might have anxiety and depression. Women often feel confused, sad, old before their time and have mixed feelings about other women's pregnancies. Psychological counselling can ease this distress. Support from the woman's partner, family and friends is also important.

Support groups

In addition to the support of family, friends and a healthcare team, some women find it useful to talk to other women in the same situation. Available support groups include:

ACCESS Australia (Australia's National Infertility Network) – www.access.org.au

Cancer Australia – www.cancer.org.au

The Daisy Network Premature Menopause Support Group – www.daisynetwork.org.uk

New Zealand Early Menopause support group - www.earlymenopause.org.nz

Where can you find more information?

If your symptoms are bothering you or you feel you need more support, your doctor can help. Your doctor can tell you about the changes in your body and offer options to manage your symptoms. Other fact sheets about treatment options include:

- *Menopause before 40 and premature ovarian insufficiency*
- *What is MHT and is it safe?*
- *9 myths and misunderstandings about Menopausal Hormone Therapy (MHT)*
- *Non-hormonal treatment options for menopausal symptoms*
- *Complementary medicine options for menopausal symptoms*
- *Lifestyle and behaviour changes for menopausal symptoms*
- *Weight management and healthy ageing*
- POI/ Early menopause and osteoporosis https://www.monash.edu/__data/assets/pdf_file/0009/1515186/FACT-SHEET_Early-Menopause-POI-and-Osteoporosis.pdf

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