

# Puberty: Females

## Health information after cancer treatment as a child or teenager

The purpose of this factsheet is to tell you about long-term side effects (called 'late effects') that can happen after having cancer treatment. They can happen soon after treatment has finished or later in life. The medical team at the hospital where you received your treatment or your long-term follow-up team will be able to help you with specific information about which late effects are relevant to you.

### What is puberty?

Puberty is the time in your life when your body begins to change from a child into an adult. For females, this stage usually starts around 11 years of age and lasts for about three or four years. Your body grows rapidly during this time until you reach your final adult height.



During puberty, your ovaries start making the main female hormones called oestrogen and progesterone. Oestrogen makes your breasts grow and develops your womb to an adult size and shape, and periods start. It is also very important for your bones to stay healthy and to help the growth spurt that happens during puberty. Progesterone helps to regulate your periods.

Your ovaries are signalled to produce oestrogen and progesterone by messenger hormones from your pituitary gland (a small gland in your brain) called luteinizing hormone (LH) and follicle stimulating hormone (FSH). Once puberty is completed, these hormones make sure your periods (menstrual cycle) continue as an adult.

Cancer and its treatment can affect when puberty starts and whether it carries on normally.

### Who is at risk?

The following can affect your pituitary gland:

- tumours of the brain
- brain surgery
- radiotherapy to the brain, eye/eye socket, nose, face, or whole body (total body irradiation TBI)

Puberty problems can occur in patients who have normal pituitary hormones but have experienced the following:

- tumours of the ovaries
- surgical removal of the ovaries
- radiotherapy to the abdomen, pelvis or lower spine
- chemotherapy which includes certain drugs that are known to damage the ovaries
- stem cell (bone marrow) transplantation including total body irradiation (TBI)

Some cancer treatments can affect both pituitary hormones and ovaries.

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## How do we monitor puberty?

During your follow-up clinic appointments, your growth will be measured and signs of puberty (such as starting to grow breasts or body hair) will be checked. Your doctor will ask you questions and may examine you in clinic for signs of your breasts developing. You may feel embarrassed about this but your doctors will completely understand. You can talk it through with your parents and with your doctor or nurse as to how you want this done. You can choose if you want to have someone with you, or not.

Your doctor may also arrange for you to have blood tests to check your puberty hormones and whether your ovaries are able to work normally. You may be referred to a clinical team that specialises in hormones called endocrinology.

## How are puberty issues treated?

If **puberty is too early** (often called 'precocious puberty') - usually before 8 years old - then puberty can be stopped with hormones. These are usually given as injections, which switch off the messenger hormones from your pituitary. When it is the right time for you to go through puberty, the injections are stopped.

If **puberty is late**, your doctor will give you oestrogen, which is the female puberty hormone. This is a slow process that normally takes 2-4 years to copy the natural process as much as possible. This is usually given as a patch (like a small plaster), or occasionally as tablets. Progesterone is added when you have been on oestrogen for a while and are near the time for periods to start.

This is given either as a separate tablet or a tablet/patch that has both oestrogen and progesterone in it. There are many different ways of giving oestrogen replacement and your follow-up team will discuss options with you.

You may wish to talk about the effects of your treatment on being able to become pregnant when you are older and you can discuss this with a fertility specialist.

## What can I do?

You cannot stop puberty issues from developing but you can make sure issues are picked up and treated early. It is very important that you attend all your check-ups, so that your growth and puberty can be monitored regularly. Do ask your team if you have any questions. A healthy lifestyle and healthy weight are important for everyone to ensure normal growth and puberty.

## Where can I find more information?

### Explain

[www.explain.me.uk](http://www.explain.me.uk)

### Children's Oncology Group

[www.childrenoncologygroup.org/index.php/lateeffectsoftreatment](http://www.childrenoncologygroup.org/index.php/lateeffectsoftreatment)

### European Society for Paediatric Endocrinology

[www.eurospe.org/patients/english-information-booklets](http://www.eurospe.org/patients/english-information-booklets)

### British Society for Paediatric Endocrinology and Diabetes

[www.bsped.org.uk/clinical-resources/patient-information](http://www.bsped.org.uk/clinical-resources/patient-information)



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Written by CCLG Late Effects Group, a national network of experts who specialise in looking after young cancer survivors, in conjunction with the CCLG Information Advisory Group, comprising multiprofessional experts in the field of children's cancer. If you have any comments on this factsheet, please contact us. CCLG publications on a variety of topics related to children's cancer are available to order or download free of charge from our website.

Children's Cancer and Leukaemia Group (CCLG) is a leading national charity and expert voice for all childhood cancers.

Each week in the UK and Ireland, more than 30 children are diagnosed with cancer. Our network of dedicated professional members work together in treatment, care and research to help shape a future where all children with cancer survive and live happy, healthy and independent lives.

We fund and support innovative world-class research and collaborate, both nationally and internationally, to drive forward improvements in childhood cancer. Our award-winning information resources help lessen the anxiety, stress and loneliness commonly felt by families, giving support throughout the cancer journey.

Our work is funded by donations. If you would like to help, text 'CCLG' to 70300 to donate £3. You may be charged for one text message at your network's standard or charity rate. CCLG (registered charity numbers 1182637 and SC049948) will receive 100% of your donation.