

Metabolic syndrome (including diabetes)

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.

Childhood cancer survivors can be at an increased risk of developing cardiovascular diseases affecting the blood circulation system such as strokes, angina and heart attacks, and other conditions affecting blood vessels later in life. Sometimes, this is due to the direct effect of cancer treatment itself on blood vessels or due to risk factors that can be treated.

Metabolic syndrome is a term used when you have a combination of risk factors affecting your cardiovascular system such as obesity, diabetes (high sugar levels because of not having enough insulin available), high lipids (fats in the blood called cholesterol and triglycerides), and high blood pressure. Metabolic syndrome occurs in the wider population, sometimes running in families, but is more common if you had cancer as a child or teenager. Having these risk factors will increase your chances of getting cardiovascular diseases.

Who is at risk?

Regardless of any previous history of cancer, anyone who:

- is overweight or obese (BMI over 25)
- has a wide waistline
- has a family history of diabetes

Anyone who has recovered from the following conditions and/or have had the following treatment:

- leukaemia
- brain tumour

- stem cell (or bone marrow) transplantation
- graft versus host disease (GvHD)
- radiotherapy to the brain
- radiotherapy to the abdomen
- high-dose steroids (such as prednisolone, dexamethasone or hydrocortisone) for a long period of time

How do we monitor metabolic syndrome?

You may have various tests to monitor metabolic syndrome:

- **blood pressure checks** regularly at your GP or hospital clinic
- **lipids blood test** for the good (HDL) and bad (LDL) cholesterol and triglycerides at your GP or hospital clinic
- **diabetes blood tests** such as a simple blood test (HbA1c), fasting blood test (fasting glucose) which involves not eating or drinking before the test or an oral glucose test – the oral glucose tolerance test involves a blood test before and after you have a special glucose drink
- **liver function blood test** to check your liver function – if your liver enzymes are high, this might suggest that you have a build-up of fat in your liver and further tests will be needed

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What can I do?

To reduce your risk, you can:

- **keep a healthy body mass index (BMI) and weight:** a BMI of 18-25 (lower if you are of Asian descent) is considered healthy for most adults with normal height and body shape. However, this may not apply to you if you are very short or have lost a lot of muscle as a result of your cancer and/or its treatment. A healthy waistline for height may be more accurate. Check with your doctor what is the right weight for you to aim for.
- **exercise regularly** but you may be advised to avoid certain forms of exercise if you have had chemotherapy or radiotherapy that may have affected your heart. Check with your doctor.
- **eat a healthy well-balanced diet** (including 5 portions of fruit and vegetables per day) of the appropriate portion size
- **avoid excess salt** intake as this can increase your blood pressure
- **don't smoke**
- **drink alcohol in moderation**
- **ask for support** for any other issues such as stress and anxiety, where you might benefit from relaxation techniques, counselling and psychotherapy

How is metabolic syndrome treated?

Changing your lifestyle is recommended to help you maintain an ideal body weight such as eating a healthy balanced diet and doing regular exercise, drinking less alcohol and not smoking.

You may need to take medication such as tablets to treat significant high blood pressure and high lipids. For diabetes, most people are treated with tablets, but some people may need insulin injections as well to control glucose levels.

Where can I find more information?

The NHS has a range of information about metabolic syndrome

www.nhs.uk/conditions/metabolic-syndrome

www.nhs.uk/oneyou/active10

www.nhs.uk/conditions/stress-anxiety-depression



Children's
Cancer and
Leukaemia
Group

the EXPERTS
in CHILDHOOD
CANCER

Children's Cancer and Leukaemia Group
Century House, 24 De Montfort Street
Leicester LE1 7GB

0333 050 7654

info@cclg.org.uk | www.cclg.org.uk

ChildrensCLG CCLG_UK

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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.