MACMILLAN
CANCER SUPPORT

CANCER AND PREGNANCY

‘When I fell pregnant, my partner and I were thrilled. Our daughter had been begging us for a little brother or sister. But at 12 weeks, I found a lump in my breast and was sent for tests. I was told I had cancer.’

Polly, diagnosed with breast cancer at 12 weeks pregnant

About this booklet

This booklet is about cancer and pregnancy. It is for anyone who has been diagnosed with cancer during pregnancy. The information may also be helpful for partners, family and friends.

The booklet explains the emotional and practical issues you may experience in this situation. It also talks about the treatment you may have and support that will be available to you.

We have written this booklet in partnership with Mummy's Star (see page 88), a charity offers support to women who are diagnosed with cancer in or around pregnancy.

We hope it helps you deal with some of the questions or feelings you may have.

We cannot give advice about the best treatment for you. You should talk to your doctor, who knows your medical history.

How to use this booklet

This booklet is split into sections to help you find what you need. You do not have to read it from start to finish. You can use the contents list on page 3 to help you.

It is fine to skip parts of the booklet. You can always come back to them when you feel ready.

On pages 88 to 92, there are details of other organisations that can help.

Quotes

In this booklet, we have included quotes from people who have been diagnosed with cancer during their pregnancy, which you may find helpful. Some are from our Online Community (**macmillan.org.uk/community**). The others are from people who have chosen to share their story with us. This includes Polly, who is on the cover of this booklet. To share your experience, visit **macmillan.org.uk/shareyourstory**

For more information

If you have more questions or would like to talk to someone, call the Macmillan Support Line free on **0808 808 00 00**, 7 days a week, 8am to 8pm, or visit **macmillan.org.uk**

If you would prefer to speak to us in another language, interpreters are available. Please tell us, in English, the language you want to use.

If you are deaf or hard of hearing, call us using NGT (Text Relay) on **18001 0808 808 00 00**, or use the NGT Lite app.

We have some information in different languages and formats, including audio, eBooks, easy read, Braille, large print and translations. To order these, visit **macmillan.org.uk/otherformats** or call **0808 808 00 00**.

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CANCER DURING PREGNANCY

About cancer during pregnancy

Finding out you have cancer is difficult and upsetting at any time. But when you are pregnant, it can be frightening and confusing. Having cancer during pregnancy is very rare. It only happens in about 1 in 1,000 pregnancies. When we mention cancer, this includes blood cancers like leukaemia.

While pregnancy is often a positive time, a diagnosis of cancer is always upsetting. Coping with both at once can be very difficult. But there is lots of help and support for you. This includes the different health professionals in your cancer or haematology (blood cancers) team and your pregnancy team.

Pete Wallroth, Founder and CEO of Mummy's Star

Mummy's Star is a charity that supports women who are diagnosed with cancer in or around pregnancy (see page 88). They can help you meet or talk to other women who have been in a similar situation. If you would like to get support from Mummy's Star, visit their website **mummysstar.org** or email **info@mummysstar.org**

Your doctors will try to keep your cancer treatment as close as possible to what you would have if you were not pregnant. They need to balance your health with the safety of the baby.

Making decisions about cancer treatment when you are pregnant can be really hard. As well as your own health, you may also worry about the baby's health. Your doctors and specialist nurses will give you all the information you need to help you make decisions.

'A pregnant woman with cancer should be treated as a pregnant woman first and foremost.'

Mummy's Star

Common concerns

You are likely to have some concerns and questions straight away when you are diagnosed. Having more information and understanding your own situation may help reassure you. It can also help you make decisions.

Here are some general questions and answers about cancer and pregnancy. Your doctor will give you information about your individual situation.

Can I have effective cancer treatment during pregnancy?

Research shows that pregnant women with cancer can usually be treated as effectively as women who are not pregnant. Doctors will try to make your treatment as similar as possible to that of a non-pregnant woman with the same type and stage of cancer. But because cancer in pregnancy is uncommon, there is less evidence available from large trials to guide treatment options.

Sometimes you may have to avoid certain treatments or delay them until later in the pregnancy or after the birth. The right treatment for you depends on the type of cancer you have, the stage (see pages 41 to 42) and how many weeks pregnant you are (see pages 40 to 41). Your doctors and specialist nurses will give you all the information you need to help you make decisions about your treatment.

In certain situations, they may advise you to end the pregnancy. This is usually if the pregnancy is in its early stages and the cancer is growing very quickly. It may be essential for your health to start having a cancer treatment that is not safe for a developing baby.

Can pregnancy make the cancer grow faster?

Doctors have researched this in different types of cancer. There is no evidence that being pregnant can make a cancer grow faster.

Can cancer affect the baby?

It is extremely rare for cancer to affect the baby. If you are worried about this, talk to your cancer doctor or specialist nurse.

For cancer to affect a baby, the cells must pass through the barrier of the placenta. The placenta is attached to the womb during pregnancy. Oxygen and nutrients from your blood pass through it to the baby. It is very rare for cancer cells to spread to the placenta and even rarer for cells to spread to the baby.

Your midwife and pregnancy doctor (obstetrician) work closely with the team treating the cancer. During pregnancy you will have extra ultrasound scans of the baby to make sure there are no problems. If your doctor has any concerns, they will look at the placenta after the baby is born to check for any cancer cells.

Types of cancer during pregnancy

Any type of cancer can happen during pregnancy, but some cancers are more likely than others. These are usually cancer types that are more common in younger people. But they can also include cancers that are more likely to affect women as they get older. This is because more women are having families later in life. Cancer is more common as we get older.

The most common types of cancers diagnosed during pregnancy are:

- breast cancer
- cancer of the cervix
- melanoma
- lymphoma
- acute leukaemia.

Pregnancy itself does not increase the risk of developing cancer.

In this information we explain the most common cancers in pregnancy and some of the possible treatments.

Cancer symptoms and pregnancy

Pregnancy does not change the symptoms of a cancer. The symptoms depend on the type of cancer. But the changes that happen to a woman's body during pregnancy may delay a cancer diagnosis. This is because some cancer symptoms may be similar to changes that happen during pregnancy.

The following list includes examples of some of these symptoms:

- A woman's breast tissue changes during pregnancy. A lump or change in the breast can also be a symptom of breast cancer.
- Women may have some vaginal bleeding during pregnancy. Vaginal bleeding can also be a symptom of cancer of the cervix.
- Lymphomas or blood cancers such as leukaemia may cause tiredness and breathlessness. Pregnant women sometimes have these symptoms.
- Some women develop new moles during pregnancy, or existing moles may get bigger. These changes can be symptoms of a skin cancer called melanoma.
- Bowel changes, such as constipation and haemorrhoids (piles), are more common during pregnancy. Constipation and bleeding from the back passage (rectum) can also be symptoms of bowel cancer.

Talk to your doctor

If you have any symptoms that may be linked to cancer or other medical conditions, always get them checked by your GP. This includes symptoms such as:

- chest pain
- feeling breathless
- changes to your heartbeat.

You should have the same checks you would have if you were not pregnant to find the cause of your symptoms.

The earlier cancer is diagnosed, the more successful treatment is. So it is important to tell your doctor if you have:

- any pre-cancerous conditions
- had cancer in the past
- any family history of cancer.

Routine pregnancy checks can show if you need any other tests. A simple blood test during pregnancy can help diagnose leukaemia.

Always tell your midwife, pregnancy doctor (obstetrician) or GP about any new symptoms. If you think these symptoms need further checks, ask about the referral guidelines for suspected cancer and your symptoms. For more information, see the National Institute for Health and Care Excellence website at **nice.org.uk** If you want to, you can ask to see another doctor or to be referred to a specialist.

Your data and the cancer registry

When you are diagnosed with cancer in the UK, some information about you, your cancer diagnosis and your treatment is collected in a cancer registry. This is used to plan and improve health and care services. Your hospital will usually give this information to the registry automatically. There are strict rules to make sure the information is kept safely and securely. It will only be used for your direct care or for health and social care planning and research.

Talk to your doctor or nurse if you have any questions. If you do not want your information included in the registry, you can contact the cancer registry in your country to opt out. You can find more information at **macmillan.org.uk/cancerregistry**

DIAGNOSING CANCER IN PREGNANCY

Tests for cancer during pregnancy

If your GP or pregnancy doctor (obstetrician) thinks there may be a link between your symptoms and cancer, they will refer you to a hospital specialist. The specialist you see depends on the symptoms you have. After they have examined you, they will talk to you about the tests you need.

Making sure you are well is the most important thing for having a healthy baby. So it is important to find the cause of your symptoms.

You may worry that tests could put the baby's health at risk. Tests to diagnose cancer can usually be done without harming the baby. Your doctors will choose tests that do not risk exposing the baby to harmful amounts of radiation. They will try to avoid:

- bone scans
- PET (positron emission tomography) scans
- CT (computerised tomography) scans.

If they think you need a test they would usually avoid, they will talk to you about it. Your doctor will explain how they can reduce any possible risk to the baby.

If you have had tests and later find you are pregnant, talk to your doctor. With most tests there is no risk to the baby, or if there is it is a very small risk.

Ultrasound scans

An ultrasound scan uses sound waves, not x-rays, to build up a picture of the inside of the body. You may have already had one during your pregnancy to check the baby's development. There is no risk to the baby.

You can usually have an ultrasound on most parts of the body. But this depends on your symptoms.

For example:

- if you have gynaecological symptoms, you may have an ultrasound of your pelvis (lower tummy area between your hips)
- if you have breast symptoms, you may have an ultrasound of your breast and armpit
- if you have digestive symptoms, you may have an ultrasound of the tummy or liver in the upper tummy area.

X-rays

You can have x-rays if they do not directly expose the baby to the rays. For example, you could have x-rays of your head, chest and arms and legs. The person taking the x-ray (radiographer) places a lead shield over your tummy to protect the baby. Doctors sometimes call this pelvic shielding.

Mammogram (breast x-ray)

It is safe to have a mammogram to check your breasts during pregnancy. The amount of radiation is very low and will not harm the baby. But the radiographer still shields your tummy area to protect the baby.

MRI (magnetic resonance imaging) scan

An MRI scan uses magnetism to build up a detailed picture of your body. It does not use x-rays. There is no evidence that MRI scans are a risk to the baby. But doctors will try to avoid them in the first 3 months (first trimester) of pregnancy. You are given a contrast injection (gadolinium) with an MRI scan to give a better picture of the scan area. This may pass through the placenta and be harmful to the baby during the first trimester.

Biopsy

This is a common test to diagnose cancer. Your doctor takes a piece of tissue or small sample of cells from the area to check for cancer cells.

You may need a biopsy to:

- check a lump
- remove a lymph node (gland)
- remove a mole or freckle on the skin.

Most biopsies in pregnancy use a local anaesthetic to numb the area. It is safe to have a local anaesthetic during pregnancy.

If you cannot have a biopsy using a local anaesthetic, you may need to have a general anaesthetic. If the pregnancy is at an early stage, your doctor may recommend waiting until your second trimester to have a biopsy (see pages 40 to 42).

Bone marrow biopsy

Bone marrow is spongy material found in your bones. Blood cells are made in the bone marrow. A bone marrow biopsy takes a small sample of the bone marrow for testing. The sample is usually taken from your hip bone. This test is safe during pregnancy.

Colposcopy and biopsy

This test uses a microscope called a colposcope to look closely at your cervix. The doctor or nurse will usually take a small sample of cells (a biopsy) from the cervix. They will send this to a laboratory to test for cancer cells.

You may have this if a cervical screening test taken before you were pregnant shows abnormal cells on the cervix. Some women may have it if they have vaginal bleeding during pregnancy and other possible causes have been ruled out.

The cervix is at the entrance to the womb. So you will only have a biopsy of this area if it is necessary. If you are further along in your pregnancy, your specialist may recommend having the biopsy after the baby is born.

There is more risk of bleeding during this type of biopsy in pregnancy. So your doctor may do the biopsy in an operating theatre. Your specialist may recommend you have it under a general anaesthetic.

Waiting for test results

Waiting for test results can be a difficult time. It may take from a few days to a couple of weeks for the results of your tests to be ready. You may find it helpful to talk with your partner, your family or a close friend. Your specialist nurse, Mummy's Star (see page 88) or another cancer support organisation can also help (see pages 88 to 92).

You may find it helpful to talk to one of our cancer information nurse specialists on **0808 808 00 00**.

Mair and baby Merlin Ray Wallroth, with permission from Pete Wallroth (Mummy's Star)

COPING WITH CANCER IN PREGNANCY

Coping with cancer and getting support

A cancer diagnosis can make you feel:

- anxious
- sad
- angry
- frightened
- worried about your future.

When you are pregnant at the same time, your feelings can be more complex. You will also be coping with the physical and emotional changes of pregnancy. This can cause even more stress. We have more information in our booklet **How are you feeling? The emotional effects of cancer** that you may find useful (see page 84).

You may feel shocked or numb to begin with. It may be hard to accept that cancer and pregnancy can happen together.

You may feel angry or resentful that your normal healthy pregnancy has been taken from you. It is normal to feel a sense of loss because your experience of pregnancy is not what you imagined.

Some women may wonder if they are somehow to blame. There is nothing to feel guilty about. You have done nothing wrong.

You may feel anxious about your own health and the baby's. It may help you feel more in control if you understand:

- how the cancer is treated in pregnancy
- how risks to your own health are managed
- how risks to the baby's health are managed.

You may worry that you are not bonding enough with the baby because your time and energy is taken up by the treatment. Even women who do not have an illness to cope with can find it hard to bond with an unborn baby. It does not mean you will not feel a strong connection with your baby when it is born.

The most important thing you can do for the baby is to look after your own health. There are also ways you can focus on your pregnancy (see pages 29 to 31).

Try to focus on taking care of yourself and being kind to yourself. How you feel affects your well-being and how you manage things (see pages 67 to 70).

'During chemotherapy I switched off from being pregnant. I wouldn't buy anything and envied other expectant mums. Emotionally, I felt robbed.'

Polly

Getting help and support

Getting the support you need is important for you and your baby. Talking things over can help you feel less anxious and realise your fears and worries are normal. This may also help you think more clearly and make decisions.

Partner, family and friends

Try to talk openly with a partner, family members or close friends about how you feel. They will want to support you as much as possible. You may want your partner, or someone close to you, to be with you when you talk to your doctors and nurses. They can help you understand what is said and support you when making decisions about your pregnancy and treatment.

Sometimes they may not know what to do or say. It can help to tell different people what you need from them. This could be someone to listen to you or just to be with you. Or it could be something practical, or something to help distract you.

Your partner and family will have their own feelings to cope with. There is also support available for them (see pages 88 to 92).

You may also have other children to care for. You might worry about their feelings and reactions to your illness. We have more information in our booklet **Talking to children and teenagers when an adult has cancer** (see page 84). You could also talk to a counsellor or a social worker at the hospital for advice and support.

Your healthcare team

Different health professionals will be involved in your care and the baby's care.

Try to be honest with your doctor, nurse and other healthcare professionals, about how you feel and what you are worried about. They can support and often reassure you. If you need more specialised help, they can usually arrange this for you.

A counsellor or psychologist can help you find ways of coping with your feelings. Getting support early on may help you cope with different challenges after the baby is born.

Your specialist nurse can tell you about local cancer support centres and support groups.

Mummy's Star

Mummy's Star is the only charity in the UK and Ireland that offers support to women who are diagnosed with cancer in or around pregnancy. They can also help you meet or talk to other women who have been in a similar situation.

Mummy's Star can also provide advocacy support, financial help and education to raise awareness of cancer and pregnancy (see page 88).

Support groups

There are different organisations that can offer you support depending on the type of cancer you have (see pages 88 to 92). There may also be local support groups in your area (see pages 85 to 86). Macmillan's Online Community is a network of people affected by cancer (see page 86). Anyone can join to get support from others at any time. It is anonymous and free to join.

'No mum should have to go through the trauma of being diagnosed with cancer in pregnancy. From my wife's experience, it was so isolating and many women feel they are the only one going through it. Mummy's Star was set up so women who find themselves in this situation have somewhere to turn to for support.'

Pete Wallroth, Founder of Mummy's Star

Your pregnancy care

During your pregnancy, you will have regular check-ups with your midwife and pregnancy doctor (obstetrician). They will check your baby's development as well as your health. They will work closely with the cancer doctors treating you.

You will have the usual checks and care that all pregnant women have. But your midwife and doctor will see you more often. They will do more checks, such as ultrasound scans to look at the baby.

You should still have choices about the birth. Your midwife will talk to you about this and help you make a birth plan. Most women will go to full term (over 37 weeks) with their pregnancy and have a normal birth. Your pregnancy and cancer teams will work together to try and make sure your pregnancy goes to term. Sometimes your natural labour starts earlier than it should.

But sometimes your doctors may recommend delivering the baby early.

If the baby needs to be delivered early, you will either have your labour started (induced) or have a Caesarean section (C-section).

Doctors may recommend you have your pregnancy care and baby delivered in the same hospital you had your cancer treatment.

Babies born before full term are cared for in neonatal intensive care units (NICUs) or special care baby units (SCBUs). They are looked after by a team of specialist doctors and nurses.

Talk things through with your doctors and nurses before you decide. It is important to make sure you understand the reasons for their advice. This can be hard, but your doctors, nurses and midwives will support you.

There are also organisations that can support women who have a premature birth, including Tommy's and Bliss (see page 88).

Thinking about your baby

Sometimes it may feel as if the cancer and treatment are taking over from your pregnancy. Or you may just feel too tired to focus on being pregnant. There are simple things you can do that may help you focus on your pregnancy. They can also help you to bond with your baby:

- Spend a few minutes every day thinking about your baby. For example, think about your baby when you are out for a walk or having a bath.
- Talk to your baby – as the baby develops it may start to respond to your voice.
- Keep a journal about your pregnancy.
- Put a scan picture somewhere you can look at it, or set it as the wallpaper or lock screen image on your phone.

Talk to your midwife about any concerns you have about your pregnancy. They can give you lots of helpful advice.

TREATMENT DECISIONS AND CARE

Who will be involved in your care

A team of different specialists will look after you. It is called a multi-disciplinary team (MDT). You can read more about MDTs in our information on the type of cancer you have (see pages 84).

Your MDT can include:

- a specialist surgeon
- a cancer doctor (oncologist) or a blood cancer doctor (haematologist)
- specialist nurses
- a doctor who cares for women during pregnancy and childbirth (obstetrician)
- a midwife
- a doctor who is expert in caring for new-born babies (neonatal doctor) – if your baby is going to be delivered early.

The MDT may also include:

- a psychologist or a counsellor if you need more specialised emotional help
- a social worker who gives emotional support and advice on other types of support and care you can get
- a dietitian if you have difficulties with your diet or getting enough nutrition in pregnancy
- a physiotherapist who can give you advice on things like movement or any exercises you may need to do, for example after surgery.

Your doctors and nurses work closely together to decide on the best possible care for you and your baby. You should be involved in decisions about your treatment and pregnancy. You can talk to your team about your preferences. For example, you could talk to them about how you would like to give birth.

The MDT meet to discuss the best treatment for your situation. Your specialist doctor will speak for you in this meeting. They will make sure everyone understands what you want and how you feel.

During treatment, you will be cared for in a specialist cancer centre. Your doctors may also arrange for your pregnancy care to happen in the same hospital. They will give you phone numbers for your specialist nurse and a midwife. You can contact them for more information and support.

Making treatment decisions

After the MDT meeting, your doctor and nurse will explain the treatment options to you. You will probably want a partner, family member or a close friend to be with you.

You and your doctors and nurses will need to talk things over carefully. As much as possible, doctors will try to give the same treatment as they would for a woman who is not pregnant. Sometimes certain treatments are delayed because they are not safe for the baby.

You may have treatment options. It is important to fully understand the risks and benefits of each before you decide. This may involve several appointments with your cancer team.

Your doctors and nurses understand that you need to think through your options. So make sure you take enough time to think about and understand the information they give you.

You may be making hard decisions that affect your own life and your pregnancy. You may also have other children to think about. You will need lots of support from a partner, family and friends, and your healthcare team.

Unless you have a fast-growing cancer, you do not usually need to decide straight away. You can take time to think about how you feel and which options feel right for you. Your doctors and nurses will give you advice and help you with decisions. It may also help to see a psychologist or counsellor to talk things over.

'Me and my husband had a long chat, and decided it would be best to have a termination so I could go through with the treatment for the cancer and be around for my little girl. My consultant talked to me about fertility and freezing my eggs just to be safe, so I did.'

Laura

Decisions about ending the pregnancy

It is not normally necessary to end the pregnancy. Women can usually have effective treatment while pregnant.

In certain situations, your specialist doctor may advise ending a pregnancy. This is usually only when there is a serious risk to your health. For example, they may suggest this if:

- the pregnancy is at an early stage and the cancer is fast-growing
- you need urgent treatment that would not be safe for the baby
- you need an operation that is not possible during pregnancy.

It depends on the type of cancer, its stage and how many weeks pregnant you are.

Ending a pregnancy does not improve the outlook (prognosis) for a cancer. But it may mean you can have the most effective treatment. Continuing a pregnancy sometimes means delaying treatment. Or it may mean giving less effective treatment to protect the baby. Your cancer doctor and specialist nurse will explain everything to you. They will help you understand the risks to your health if you continue with the pregnancy.

Having to think about ending a pregnancy is very distressing. It is a deeply personal decision that only you can make. You may have been planning your pregnancy for a long time. Or may have struggled to become pregnant. It may even be the result of going through fertility treatment.

You will need a lot of support from a partner, and close family members and friends. Your healthcare team will also support you and respect the choices you make. You may have strong, protective feelings towards the developing baby. For some women, ending a pregnancy may not feel like an acceptable thing to do.

You may decide to end the pregnancy for your own reasons, even if your specialist doctor is not recommending this. You may feel you cannot get on with treatment and recovery while being pregnant. Or, you may decide to focus on getting well for the family you already have. Whatever the reason, it is an upsetting decision to have to make.

You may need specialist support from a counsellor or a psychologist experienced in supporting people through a loss (see pages 88 to 91).

What treatment depends on

Your doctors consider many things before recommending the best treatment options for you. These are:

- how many weeks pregnant you are
- the type of cancer and its stage (how far it has grown or if it has spread)
- how slowly or quickly the cancer is growing
- if the aim of treatment is to cure the cancer or to control it.

How many weeks pregnant you are

How far along you are in your pregnancy is important when deciding about treatment. It affects the timing of different treatments, particularly chemotherapy.

A pregnancy usually lasts for about 40 weeks. It is divided into periods of around 3 months, called trimesters. During each trimester the baby goes through different stages of development.

First trimester – week 0 to 13 (month 0 to 3)

The baby is developing and its organs and limbs are forming. Doctors usually avoid giving chemotherapy during this time. Some types of surgery may need to be delayed.

Second trimester – week 14 to 27 (month 4 to 6)

The baby is growing quickly and the lungs and other organs are developing. You can have chemotherapy any time from 14 weeks onwards. You can also have some types of surgery. At 24 weeks, the baby has a chance of surviving if it is born.

Third trimester – week 28 onwards (month 7 to 9)

This is the final stage of growth when the baby moves into position for birth. If you are diagnosed with cancer during this time it may be possible to:

- delay treatment until after the baby is born, depending on the type of cancer
- have treatment to control the cancer until the baby is born
- have the baby delivered early, if neonatal doctors think the baby can cope with this, and then start cancer treatment.

The type and stage of cancer

Doctors try to give you the same treatment as they would give to a woman with the same type of cancer who is not pregnant.

Depending on the treatment you need, doctors may recommend delaying or changing treatment to help protect the baby.

Your doctor will talk to you before you make any decisions about your pregnancy and treatment. Doctors also look at the stage of the cancer. If the cancer is bigger, doctors may advise starting treatment as soon as possible. They also look to see if the cancer is a type that grows slowly, or if it is likely to grow quickly.

Slow-growing cancers

Doctors may be able to watch a cancer that is growing slowly during pregnancy. If the cancer starts to grow, they usually recommend you start treatment. If you are diagnosed at a later stage of pregnancy, your doctor may advise delaying treatment until after the baby is born.

Fast-growing cancers

Doctors usually recommend you start treatment at once. If your pregnancy is at an early stage, they will usually talk to you about ending the pregnancy. This is because the cancer is a serious risk to your health. They can then give you the best possible treatment for your situation. You will be given lots of support to help you cope with this distressing situation.

If you are diagnosed in your third trimester, doctors may advise that the baby is delivered early. This is usually if you have a certain type of leukaemia or lymphoma. You start intensive chemotherapy straight after the baby is born.

Future fertility

Even though you are already pregnant, you may worry about the effects of cancer treatment on your future fertility. If you are worried about this, talk to your cancer doctor before treatment starts. Some ways of protecting fertility will not be possible during pregnancy. But there may be other things your doctor can think about, such as the type of chemotherapy drugs you have. You may also find our booklets **Cancer treatment and fertility – information for women** and **Cancer treatment and fertility – information for men** useful (see page 84).

Monitoring the cancer

If you have a very early-stage or slow-growing cancer, your specialist may advise checking (monitoring) the cancer during your pregnancy, rather than having treatment. After the baby is born you can start treatment. Doctors may suggest this if the cancer is not likely to change much during the rest of your pregnancy. It depends on the type of cancer you have and how many weeks pregnant you are.

Monitoring may be an option if you have:

- low-grade lymphoma or early Hodgkin lymphoma
- stage 1 cancer of the cervix
- chronic leukaemia.

If monitoring is an option, your doctor and nurse will talk about it with you. They will explain the type of checks you will have.

DIFFERENT CANCERS AND TREATMENTS

Pregnancy and chemotherapy

Chemotherapy is the most common treatment used during pregnancy. The drugs destroy cancer cells, but they also affect healthy cells. It is natural to feel anxious about the possible effects of chemotherapy on the baby. But at the same time, you may want to start treating the cancer.

If your doctor thinks you need chemotherapy, they may:

- delay chemotherapy until after the first trimester
- avoid using a certain drug because it is harmful to the baby
- avoid using a certain drug because there is not enough evidence to show it is safe in pregnancy.

Studies have looked at babies whose mothers had chemotherapy after the first trimester. These are generally reassuring. Most women have healthy babies, just like women who have not had chemotherapy.

There is some evidence to suggest chemotherapy may increase the risk of having an earlier delivery and the baby having a lower birth weight. But doctors now have more experience giving chemotherapy during pregnancy. So babies are less likely to be born earlier. If possible, your doctor will try to help your pregnancy go to full term.

Some women are at a higher risk of early delivery. In this situation, doctors recommend they are cared for in hospitals with specialist baby units. These are called obstetric high dependency units (OHDUs).

Babies born after their mothers had chemotherapy do not seem to have different problems from other babies. So far, studies do not show any differences in the baby's development. But doctors will need to follow up for longer to find out more about any other possible risks.

'As my cancer wasn't triggered by hormones, I had chemotherapy while pregnant and was told I could have further treatment once the baby was born.'

Polly

When chemotherapy is given

You do not usually have chemotherapy during the first trimester. This is because the baby's organs are still forming, and chemotherapy can increase the risk of a miscarriage or a birth defect.

You can usually start chemotherapy after you are 14 weeks pregnant. At this stage, research shows most chemotherapy drugs will not harm the baby. The placenta acts as a barrier between you and the baby. Some drugs cannot pass through the placenta. Others only pass through in very small amounts. Your specialist doctor and specialist nurse will explain this to you.

It may be helpful to talk to a woman who has also had chemotherapy during pregnancy. Mummy's Star may be able to arrange this for you (see page 88). Your cancer doctor or specialist nurse may also help with this.

Your doctors will talk to you about when you will stop chemotherapy. Chemotherapy is not usually given after you are 37 weeks pregnant. You will have a break between your last dose of chemotherapy and your expected delivery date. This is to avoid the baby being born when your blood cell levels are still low. Having a low level of blood cells is a temporary side effect of chemotherapy. We have more useful information in our booklet **Understanding chemotherapy** (see page 84).

If your baby is born soon after your chemotherapy finishes, doctors can give you drugs to support your immune system. This helps you fight infections.

Different cancers and chemotherapy

You will usually have chemotherapy as an injection or a drip (infusion) into a vein, or as tablets. This is the same for women who are not pregnant. We have more useful information in our booklet **Understanding chemotherapy** and in our information on the type of cancer you have (see page 84).

Breast cancer

You may have chemotherapy before or after an operation to remove breast cancer (see pages 55 to 56). Doctors will use the same drugs that they give to women with breast cancer who are not pregnant.

Your doctor will usually give you an anthracycline drug – either doxorubicin (Adriamycin®) or epirubicin. These drugs are commonly used during pregnancy. You usually have an anthracycline with other chemotherapy drugs.

You might have a drug called docetaxel (Taxotere®) or paclitaxol (Taxol®). These are called taxanes. These drugs are less commonly used in pregnancy. You may have them nearer the end of your chemotherapy treatment. This often means you have it after the baby is born.

You might have other treatments after the baby is born. These include radiotherapy, hormonal and targeted therapy drugs.

Cancer of the cervix

Doctors will use the same chemotherapy drugs they give to women who are not pregnant.

They may use the drugs cisplatin or carboplatin along with other chemotherapy drugs.

You can have further treatment, such as surgery or radiotherapy, after the baby is born. You may also have more chemotherapy after the birth.

Non-Hodgkin lymphoma (NHL)

Chemotherapy can be used to treat fast growing NHL during pregnancy. CHOP is the standard combination of chemotherapy drugs used. It can be given in pregnancy and is made up of:

- C – cyclophosphamide
- H – doxorubicin (hydroxydaunomycin)
- O – vincristine (Oncovin®)
- P – prednisolone (a steroid).

Rituximab is a targeted therapy drug usually given with CHOP (R-CHOP). Doctors often give it to you after the baby is born.

Hodgkin lymphoma (HL)

HL is commonly treated using a combination of drugs called ABVD. It can be given in pregnancy, and is made up of:

- A – doxorubicin (Adriamycin®)
- B – bleomycin
- V – vinblastine (Velbe®)
- D – dacarbazine (DTIC).

Acute leukaemia

You may need chemotherapy to destroy all the cancer cells for acute myeloid leukaemia (AML). This is called induction chemotherapy. You can have the drugs that are usually given in this treatment. These are daunorubicin and cytarabine.

A rare type of AML called acute promyelocytic leukaemia (APL) is treated in a different way. The first treatment is a drug called ATRA, which is also called tretinoin (Vesanoid®). ATRA can reduce leukaemia symptoms very quickly. It is usually given with chemotherapy or a drug called arsenic trioxide. You cannot have ATRA during the first 12 weeks of pregnancy.

APL needs to be treated very quickly. There is a risk of having a serious bleed without treatment. Unless it is diagnosed later in pregnancy, doctors may recommend ending the pregnancy. This is so you can get the most effective treatment. If you decide to continue with the pregnancy, ATRA is usually given on its own.

Pregnancy and surgery

Most operations are safe during pregnancy. Some are done under local anaesthetic. Others may use a general anaesthetic. A regional anaesthetic, for example an epidural, numbs an area of the body. You may have this instead of a general anaesthetic. It depends on the type of surgery you need.

Your cancer doctor and pregnancy doctor (obstetrician) will decide the best time for you to have surgery. They may recommend delaying it until you are in your second trimester. This is because having a general anaesthetic in the first trimester can slightly increase the risk of miscarriage. If you have surgery during the third trimester, you will have drugs to stop you from going into labour.

Your obstetrician and an anaesthetist will talk with you about the operation. They will explain how they check on you and the baby during surgery. Your obstetrician may want to check the baby's heart rate before and after surgery.

Possible complications

The risks and complications depend on the type of surgery you are having. Your surgeon will talk to you about them.

Surgery to your tummy area (abdomen) or your pelvis may have more risk of complications. This is because the area is so close to the womb and baby. There is more risk if you are more than 25 weeks pregnant.

If you need this type of surgery, you and the baby will be checked very closely during the operation. If you are later in your pregnancy, the obstetrician may be there. This is to make sure there is expert help available if there are any problems with the baby during surgery.

Blood clots

Pregnancy and surgery both increase the risk of a blood clot. Cancer itself can also increase the risk of a blood clot. Your surgeon and specialist nurse will give you advice about ways to reduce this risk.

They may ask you to wear compression stockings before your operation and for a few weeks after it. They will also encourage you to get up and walk about soon after your operation. You may have injections under the skin to help reduce the risk of getting a clot.

A clot can cause:

- pain, redness and swelling in your leg or arm
- breathlessness
- pain in your chest.

Contact your doctor straight away if you have any of these symptoms. A blood clot is serious. But doctors can treat it with drugs that thin the blood.

Different cancers and surgery

The surgery you have will depend on the type of cancer you have. You may want to also order our information on the type of cancer your have (see page 84). This will give you more information on the different surgeries that can be used for the type of cancer you have.

Breast cancer

If you have breast cancer, you are usually given a choice of operations. This is the same for women who are not pregnant. You may have surgery to remove lymph nodes under your arm at the same time as breast surgery.

Your surgeon and breast care nurse will talk to you about your options. They may ask you to decide whether you want only the area of the cancer removed, or your whole breast (mastectomy). They will talk to you about the best timing for surgery.

Removing only the cancer

You may have surgery to remove only the area of the cancer. This is called breast conserving surgery. You will need radiotherapy to the breast afterwards. Radiotherapy reduces the risk of the cancer coming back in the breast.

You will not have radiotherapy while you are pregnant. Your doctor will tell you if having a delay between surgery and radiotherapy is safe for you. This depends on how many weeks pregnant you are. If chemotherapy is part of your treatment plan, you will have this before radiotherapy.

Removing a breast

Sometimes the surgeon may recommend having the whole breast removed. This is called a mastectomy. You may need this surgery because the lump is too large, or because there is cancer in different parts of the breast.

It is safe to have a mastectomy during pregnancy. If you want breast reconstruction, you can usually have this after the baby is born and your cancer treatment has finished.

Some women may have chemotherapy before surgery to shrink a cancer. This means you may not need to have a mastectomy. You may have surgery to remove only the cancer (breast-conserving surgery) after the baby is born.

Sentinel lymph node biopsy (SLNB)

Some women have an SLNB during their operation. Your surgeon will explain if it is suitable for you.

An SLNB usually checks about 1 to 3 lymph nodes in the armpit to see if they contain cancer cells. If there are no cancer cells, you will not need further surgery to remove more lymph nodes.

For the test, a small amount of radioactive liquid is injected into your breast. There is no evidence that this is harmful for the baby. Usually you would also have a blue dye injected into the breast to stain the nearby lymph nodes. But this dye is not usually given during pregnancy.

Cancer of the cervix

One of the main treatments for cancer of the cervix is removing the womb (hysterectomy). Your treatment in pregnancy depends on the stage of the cancer, how many weeks pregnant you are and your choices.

Your specialist doctor will explain the risks of continuing with the pregnancy in your situation.

If the cancer is very early-stage, it may be possible to delay surgery and monitor the cancer until the baby is born. If there are signs the cancer is growing, your doctors can give you chemotherapy. Many cervical cancers diagnosed in pregnancy are at an early stage.

If you are still in early pregnancy, your doctor cannot be sure how a delay in surgery may affect your outlook. Sometimes they may advise ending the pregnancy so you can have a hysterectomy. This is a hard situation, especially as the surgery means you can no longer get pregnant. Your doctors and nurses will give you a lot of support. It is important to talk to your doctor about any fertility worries you may have.

If you continue with your pregnancy, or are diagnosed later in pregnancy, your doctor may recommend chemotherapy. You can have this if you are more than 14 weeks pregnant. You can have surgery after the baby is born, or at the same time as a Caesarean section. Some women may need more chemotherapy and sometimes radiotherapy after the birth.

Removing the pelvic lymph nodes

If you are under 18 to 22 weeks pregnant, your doctor may recommend an operation to remove the lymph nodes (glands) in your pelvis. This will check if the nodes contain any cancer cells. Your surgeon may advise this so they can be certain the cancer is still early-stage.

If there are cancer cells in the lymph nodes, doctors usually recommend you end the pregnancy. This is so you can have a hysterectomy straight away. Your doctors and nurses will talk about this with you and give you a lot of support.

The operation is done under a general anaesthetic using keyhole surgery (laparoscopically). The risk of complications or bleeding may be slightly higher in pregnant women. Your doctors and nurses will monitor you closely. This means they can treat you quickly if any complications develop.

If you decide to continue with the pregnancy, you will have chemotherapy. You can then have a hysterectomy after the baby is born.

Trachelectomy

A trachelectomy removes most of the cervix and the upper part of the vagina. If the tumour is very small and early-stage, it may be possible to do the surgery during pregnancy. This may happen if the cancer diagnosis is early in the pregnancy and you want to continue with the pregnancy. You usually have the pelvic lymph nodes removed first, to make sure the cancer is early stage.

With a trachelectomy there is a risk of bleeding and of losing the baby after the operation. Doctors will talk to you to make sure you fully understand the risks involved and any other options.

Few women have had a trachelectomy during pregnancy. But some of these women have successfully given birth to healthy babies. This is very specialised surgery. It is only done in certain hospitals by surgeons who are experts in this area.

'After the operation I felt groggy and sore. But all that seemed irrelevant when the doctor arrived to check the baby's heartbeat. It was such a relief.'

Polly

Hysterectomy after the birth

You may need a hysterectomy after the birth. This may be at the same time as the Caesarean section (C-section) to deliver your baby. Doctors do not advise a normal delivery as there are possible risks of bleeding from the cancer.

A gynaecological cancer surgeon will do the hysterectomy. An obstetrician will deliver your baby through a cut made in your tummy (C-section).

Your doctors and nurses will talk with you before surgery so you understand what will happen.

Melanoma

Surgery is the main treatment for melanoma. Early-stage melanomas are usually cured with surgery. This surgery is safe during pregnancy. It is important not to delay surgery because you are pregnant. Usually you can have the melanoma removed using a local anaesthetic.

Testing the lymph nodes

Sometimes your specialist will offer you a test called a sentinel lymph node biopsy (SLNB). If you have early melanoma you will not usually need this.

An SNLB checks if any melanoma cells have spread to nearby lymph nodes (glands). This is the most common place melanoma can spread to. You may have one to see if you need treatment after surgery to try to reduce the risk of melanoma coming back.

This treatment involves immunotherapy and targeted therapy drugs, which you cannot have during pregnancy. Treatment must start within a set period of time after the SNLB. This means you will only have an SNLB in the third trimester of your pregnancy.

An SNLB removes the first lymph node or nodes called the sentinel nodes. You need a general anaesthetic to have it done. The doctor injects a small amount of radioactive liquid close to the lymph nodes. There is no evidence that this is harmful for the baby. Usually you would also have a blue dye injected into the breast to stain the nearby lymph nodes. But this dye is not usually given during pregnancy.

An SLNB is not a treatment, but it can tell you and your doctors more about the stage of the melanoma. Your specialist will explain how helpful it may be and any possible risks, such as infection.

We have more information on testing the lymph nodes in our booklet **Melanoma – lymph node assessment and treatment** (see page 84).

Advanced melanoma

If melanoma has spread to other parts of the body, your specialist may ask you to think about having the baby delivered early. This means you can start treatment with targeted therapy and immunotherapy drugs (see pages 65 to 66).

Pregnancy and radiotherapy

Radiotherapy uses high-energy rays to destroy cancer cells. It is not usually given during pregnancy as even a low dose may harm the developing baby.

If radiotherapy is urgent, it may be given to a part of the body that is not close to the womb. For example, if a tumour in the brain is causing increased pressure. Usually radiotherapy happens after the birth. We have more useful information in our booklet **Understanding radiotherapy** and in our information on the type of cancer you have (see page 84).

Breast cancer and radiotherapy

Radiotherapy is usually recommended after an operation to remove only the area of the breast affected by the cancer. This is called breast conserving surgery.

The delay between surgery and radiotherapy is usually 6 to 8 weeks. If your diagnosis happens later in your pregnancy, you may be able to delay radiotherapy until after the baby is born.

Many young women with breast cancer also need chemotherapy. You may have chemotherapy before or after surgery. But it can take several months to finish the cycles of chemotherapy you need. This usually means you will have had your baby before it is time to start radiotherapy.

You may be diagnosed early in your pregnancy and not need chemotherapy. This may mean you have to wait more than 6 months after surgery before you have radiotherapy. This delay could increase the risk of the cancer coming back in the breast. Your surgeon may advise you to have the whole of the breast removed (mastectomy). We have more information about having a mastectomy that you might find helpful (see page 56).

After a mastectomy, some women need radiotherapy to the chest.

Cancer of the cervix and radiotherapy

Radiotherapy is never given to the pelvic area during pregnancy.

Radiotherapy with chemotherapy is called chemoradiation. This is the main treatment for non-pregnant women when a cervical cancer is larger. It is also used if the cancer has spread into surrounding tissue.

Your doctor may advise that chemoradiation is the best treatment. If your pregnancy is early, they may recommend that you think about ending the pregnancy. You must wait until you are 14 weeks pregnant to have chemotherapy, and after the birth for radiotherapy. This may be a serious risk to your health. Your doctors and nurses will give you a lot of support to help you to cope.

If you decide to continue with the pregnancy, you have chemotherapy when you reach 14 weeks.

If you are later in your pregnancy, you will start chemotherapy straight away. You then have radiotherapy after the baby is born.

Other cancer drugs and pregnancy

Other anti-cancer drugs are used to treat different cancers. Most of these cannot be given during pregnancy.

Hormonal therapy drugs

Hormonal therapy drugs are often used to treat breast cancer. But they are not given during pregnancy as they have a high risk of causing birth defects. Your doctor will prescribe these after the baby is born.

Targeted therapy and immunotherapy drugs

You cannot take most of these drugs during pregnancy because they are harmful to the baby. Some drugs are still new, so there is not a lot of information about their effects during pregnancy. They are not usually used for pregnant women.

Women with breast cancer who need trastuzumab can have it after the baby is born. During pregnancy, it can reduce the amount of fluid around the baby.

Rituximab is a targeted therapy drug used to treat lymphoma. Recent research has looked at pregnant women who had rituximab to treat lymphoma. The treatment did not seem to cause any problems for the baby. Your specialist may still want to wait until after the baby is born.

Imatinib (Glivec®) is a drug used to treat chronic myeloid leukaemia. It is usually avoided during pregnancy. Drugs similar to imatinib are also usually avoided.

Targeted therapy drugs used to treat advanced melanoma are not given during pregnancy. These include:

- vemurafenib (Zelboraf®)
- dabrafenib (Tafinlar®)
- trametininb (Mekinist®).

Immunotherapy drugs

Immunotherapy drugs used to treat advanced melanoma are not given during pregnancy. These include:

- ipilimumab (Yervoy®)
- nivolumab (Opdivo®)
- pembrolizimab (Keytruda®).

Interferon alpha (IntronA®, Roferon-A®) is an immunotherapy drug that can be given during pregnancy. It can help treat advanced melanoma until after the birth. You can then have targeted therapy drugs.

Interferon may also be used during pregnancy to treat women with chronic myeloid leukaemia.

Managing side effects and well-being

Taking good care of yourself helps you cope during treatment. It will also prepare you for when the baby is born.

You will be experiencing the physical and hormonal effects of pregnancy. These can include mood changes or problems sleeping. Your midwife can give you advice and support on how to care for yourself during pregnancy. They will explain the checks you and the baby will have.

You may have treatment side effects to cope with. You might also have symptoms caused by the cancer. Your specialist doctor and nurse will explain how to manage your symptoms. They can prescribe medicines to help and give you advice on what you can do. We have more information on supportive treatments at **macmillan.org.uk**

Managing tiredness

Cancer treatments can make you feel tired. Pregnancy also makes you tired and you may have other children to care for. You will need plenty of rest.

Think about any help you can get from family and friends. If you have a partner, talk about the best ways to manage things. Accept offers of help from others or ask for help. This will help you have more time and energy to do the things you want to do. If you have children, it can mean spending more time with them.

You could ask for help with:

- getting to and from hospital
- looking after children
- taking children to and from school or activities
- shopping and preparing meals
- household tasks.

Keeping a diary can give you an idea of the help you need. It can also help if you know the times you are likely to be the most tired. We have more useful information on tiredness in our booklet **Coping with fatigue (tiredness)** – see page 84.

'Less than a month after being diagnosed, I had a mastectomy. A few weeks later, I began chemotherapy. It made me tired and left me feeling down.'

Polly

Reducing stress

There are things you can do to help you feel better and reduce stress. You probably know what works well for you. This could include:

- doing regular and light exercise, such as walking
- eating healthily
- getting enough sleep
- having a bath
- doing yoga.

It can be difficult to fit these things in during pregnancy or while looking after a new baby. When you are also having treatment, it can be even harder. But if you can manage to do some of these things you may find it helps you cope. You may also find our booklet **How are you feeling? The emotional effects of cancer** useful (see page 84).

We have more information about what you can do to help your well-being. Tommy's is an organisation that gives pregnancy health information (see page 88).

Things that make you feel good

During treatment, there will be times you feel well enough to enjoy time with family and friends. Think about what makes you feel good and plan to do these things regularly. You can work this around your treatment. Planning for the baby's arrival may be something to focus on that makes you feel good.

You may be thinking about trying complementary therapies. Talk to your cancer doctor or nurse and your midwife first to check it is safe.

Some therapies, such as yoga or a gentle massage, may help you to relax. But you should avoid having a massage on your tummy area or the area of the cancer. We have more useful information in our booklet **Cancer and complementary therapies** (see page 84).

Controlling side effects or symptoms

You may need drugs to control treatment side effects or any possible symptoms. There are certain drugs your doctor will not give you. But there are many other drugs can that work well. Always check before taking any medicines you buy over the counter. Ask your midwife, nurse, or doctor for advice.

Feeling sick

Sickness is a common side effect of chemotherapy. It is treated with anti-sickness drugs. These are called anti-emetics. But not all anti-sickness drugs are okay to use in pregnancy.

Doctors often prescribe anti-sickness drugs called metoclopramide or ondansetron. Steroids can also treat sickness. Always contact the hospital if the anti-sickness drug you are taking is not working.

Infection

If you get an infection, you will be given antibiotics. Most antibiotics are safe to take during pregnancy. But your doctor will avoid certain drugs, for example tetracyclines.

If you are having chemotherapy you will need to be careful about getting an infection. Your nurse will explain more about this. A drug called granulocyte-colony stimulating factor (G-CSF) encourages the bone marrow to make white blood cells. This reduces the risk of infection. Doctors may recommend using it in pregnancy, but only if it is necessary. It does not seem to cause problems for the baby. But there is not a lot of information about its use in pregnancy.

Anaemia (low number of red blood cells)

Chemotherapy or losing blood during surgery may cause anaemia. Red blood cells carry oxygen around the body. If the number of red blood cells is low, you may be tired and breathless. Tell your doctor or nurse if you feel like this.

If you are very anaemic, you may need a drip to give you extra red blood cells. This is called a blood transfusion. You can have a blood transfusion while you are pregnant.

Pain

You can take different painkillers during pregnancy. But you need to check with your doctor or midwife first. If you are in pain, tell your doctor or nurse so they can prescribe you the right drug.

Steroids may also be used to reduce swelling and control pain.

Tiredness

Feeling tired is a common side effect of chemotherapy. It is often worse towards the end of treatment and for some weeks after it has finished. Try not to do too much and plan your day so you have time to rest. Gentle exercise, like going for short walks, can give you more energy. If you feel sleepy, do not drive or operate machinery. We have more information in our booklet **Coping with fatigue (tiredness)** that you may find useful – see page 84.

‘When I finally got to hold him, it was incredible. Throughout the pregnancy, I hadn’t let myself imagine what it could be like. Now, here he was. Fully formed and perfect. He’d survived it all. My little miracle.’

Polly

Justine and baby Verity, with permission from Pete Wallroth (Mummy's Star)

BABY, BIRTH AND BREASTFEEDING

When you have your baby

Your pregnancy doctor (obstetrician), specialist doctor and midwife will talk to you about the best time to have your baby. They will also talk to you about the type of delivery. It may feel like cancer and its treatment have taken over your pregnancy. But this is about you and your baby.

You and your midwife will talk about your birth plan. It is important for you to be as involved as you can.

Many women carry their baby to full term and have a normal birth. If you need to start treatment, the baby may be delivered earlier. You may need injections of drugs called steroids before the birth. This helps reduce the chance of the baby having breathing problems.

The further along you are in your pregnancy, the safer it is for your baby. Most babies born from 32 weeks do well and do not have any long-term problems. They are cared for in neonatal intensive care units (NICUs) or special care baby units (SCBUs).

After the birth

You will still need support from your cancer team, midwives, and pregnancy doctor (obstetrician) after the baby is born. You may be continuing with treatment or starting treatment. This can be difficult, especially with a newborn baby to care for.

Family, friends and a partner can usually help support you. Tell people what kind of help and support would be best for you. You can then decide what you want to focus on. This may be spending time with your baby. Talking to a social worker may be helpful. They may be able to arrange extra support and help look after any other children.

Taking care of your well-being is important (see pages 67 to 70). It can help you care for your baby and cope with treatment.

Breastfeeding

Your specialist doctor, nurse and midwife will give you advice about breastfeeding. It usually depends on where you are with your treatment plan.

Chemotherapy

If chemotherapy finishes a few weeks before your baby is born, you may be able to breastfeed straight away. Your midwife will give you lots of support and advice.

You may be continuing chemotherapy after the birth. Your doctor or nurse will recommend you do not breastfeed. This is because the drugs could be passed to your baby through breast milk.

If you are not having any other treatment after chemotherapy, you could think about expressing milk. You will not be able to keep this milk for your baby. But expressing milk means you will still be producing milk when chemotherapy finishes. After a few weeks you could then start to breastfeed.

Other drugs

Targeted therapy, immunotherapy drugs or hormonal therapy drugs can be passed to your baby through breast milk. Your doctor will tell you not to breastfeed while you are having these drugs.

Radiotherapy

If you have had radiotherapy to the breast or chest, you may not produce any milk in that breast. You can still breastfeed from the other (non-treated) breast.

It is usually safe to continue breastfeeding if you are having radiotherapy to other areas of the body that are away from your chest.

Donor breast milk

If the mother does not have enough of their own breast milk, some hospitals offer donated breast milk for babies born prematurely. The United Kingdom Association for Milk Banking (UKAMB) is a registered charity that supports milk banking in the UK. There are strict processes to make sure donor breast milk is safe.

FURTHER INFORMATION

About our information

We provide expert, up-to-date information about cancer. And all our information is free for everyone.

Order what you need

You may want to order more booklets or leaflets like this one. Visit **be.macmillan.org.uk** or call us on **0808 808 00 00**.

We have booklets about different cancer types, treatments and side effects. We also have information about work, financial issues, diet, life after cancer treatment and information for carers, family and friends.

Online information

All our information is also available online at **macmillan.org.uk/information-and-support** You can also find videos featuring stories from people affected by cancer, and information from health and social care professionals.

Other formats

We also provide information in different languages and formats, including:

- audiobooks
- Braille
- British Sign Language
- easy read booklets
- eBooks
- large print
- translations.

Find out more at **macmillan.org.uk/otherformats** If you would like us to produce information in a different format for you, email us at **cancerinformationteam@macmillan.org.uk** or call us on **0808 808 00 00**.

Other ways we can help you

At Macmillan, we know how a cancer diagnosis can affect everything, and we're here to support you.

Talk to us

If you or someone you know is affected by cancer, talking about how you feel and sharing your concerns can really help.

Macmillan Support Line
Our free, confidential phone line is open 7 days a week, 8am to 8pm. Our cancer support specialists can:

- help with any medical questions you have about cancer or your treatment
- help you access benefits and give you financial guidance
- be there to listen if you need someone to talk to
- tell you about services that can help you in your area.

Call us on **0808 808 00 00** or email us via our website, **macmillan.org.uk/talktous**

Information centres
Our information and support centres are based in hospitals, libraries and mobile centres. There, you can speak with someone face to face.

Visit one to get the information you need, or if you'd like a private chat, most centres have a room where you can speak with someone alone and in confidence.

Find your nearest centre at **macmillan.org.uk/informationcentres** or call us on **0808 808 00 00**.

Talk to others

No one knows more about the impact cancer can have on your life than those who have been through it themselves. That's why we help to bring people together in their communities and online.

Support groups

Whether you are someone living with cancer or a carer, we can help you find support in your local area, so you can speak face to face with people who understand. Find out about support groups in your area by calling us or by visiting **macmillan.org.uk/selfhelpandsupport**

Online Community

Thousands of people use our Online Community to make friends, blog about their experiences and join groups to meet other people going through the same things. You can access it any time of day or night. Share your experiences, ask questions, or just read through people's posts at **macmillan.org.uk/community**

The Macmillan healthcare team

Our nurses, doctors and other health and social care professionals give expert care and support to individuals and their families. Call us or ask your GP, consultant, district nurse or hospital ward sister if there are any Macmillan professionals near you.

'Everyone is so supportive on the Online Community, they know exactly what you're going through. It can be fun too. It's not all just chats about cancer.'

Mal

Help with money worries

Having cancer can bring extra costs such as hospital parking, travel fares and higher heating bills. If you've been affected in this way, we can help.

Financial guidance

Our financial team can give you guidance on mortgages, pensions, insurance, borrowing and savings.

Help accessing benefits

Our benefits advisers can offer advice and information on benefits, tax credits, grants and loans. They can help you work out what financial help you could be entitled to. They can also help you complete your forms and apply for benefits.

Macmillan Grants

Macmillan offers one-off payments to people with cancer. A grant can be for anything from heating bills or extra clothing to a much-needed break.

Call us on **0808 808 00 00** to speak to a financial guide or benefits adviser, or to find out more about Macmillan Grants.

We can also tell you about benefits advisers in your area. Visit **macmillan.org.uk/financialsupport** to find out more about how we can help you with your finances.

Help with work and cancer

Whether you're an employee, a carer, an employer or are self-employed, we can provide support and information to help you manage cancer at work. Visit **macmillan.org.uk/work**

Work support

Our dedicated team of work support advisers can help you understand your rights at work. Call us on **0808 808 00 00** to speak to a work support adviser (Monday to Friday, 8am to 6pm).

Macmillan Organiser

This includes a records book to write down information such as appointments, medications and contact details. You can also download the app on IOS or Android.

Other useful organisations

There are lots of other organisations that can give you information or support.

Cancer and pregnancy support

Mummy's Star
www.mummysstar.org
Mummy's Star is the only charity in the UK and Ireland dedicated to women and their families affected by cancer during pregnancy and beyond. They support those diagnosed with cancer in pregnancy and within a year of a birth.

The Pregnancy & Medicine Initiative
www.pregnancyandmedicine.org
The Pregnancy & Medicine Initiative aims to raise awareness and help address the lack of information about the use of medicines and medical treatment in pregnancy.

Tommy's
www.tommys.org
Tommy's fund vital research into complications during pregnancy as well as providing support and information to families across the UK.

Bliss
www.bliss.org.uk
They give emotional and practical support to families who have a premature or sick baby. They support families give information about caring for premature and full term sick babies in hospital and when they go home.

United Kingdom Association for Milk Banking (UKAMB)
www.ukamb.org
UKAMB works for the provision of safe, screened donor breastmilk for all babies who need it.

Cancer support organisations

Breast Cancer Now
www.breastcancernow.org
Helpline 0800 800 6000
Provides information, practical help and emotional support for anyone affected by breast cancer. Does research into breast cancer. Specialist breast care nurses run the helpline. Offer a peer support service.

Jo's Cervical Cancer Trust (Jo's Trust)
www.jostrust.org.uk
Provides information and support for anyone concerned about HPV, cervical screening, cell changes or cervical cancer.

Lymphoma Association
www.lymphoma-action.org.uk
Helpline 0808 808 5555
Gives information and support on Hodgkin and non-Hodgkin lymphoma. They have support groups and offer a Buddy service.

Melanoma UK
www.melanomauk.org.uk
Tel 0808 171 2455
free phone line run by volunteers. Offer support and guidance to anyone affected by melanoma.

Cancer Research UK
Helpline 0808 800 4040
(Mon to Fri, 9am to 5pm)
www.cancerresearchuk.org
A UK-wide organisation that has patient information on all types of cancer. Also has a clinical trials database.

Cancer Support Scotland
Tel 0800 652 4531
(Mon to Fri, 9am to 5pm)
Email info@cancersupportscotland.org
www.cancersupportscotland.org
Runs cancer support groups throughout Scotland. Also offers free complementary therapies and counselling to anyone affected by cancer.

Macmillan Cancer Voices
www.macmillan.org.uk/cancervoices
A UK-wide network that enables people who have or have had cancer, and those close to them such as family and carers, to speak out about their experience of cancer.

Maggie's Centres
Tel 0300 123 1801
Email enquiries@maggiescentres.org
www.maggiescentres.org
Has a network of centres in many locations throughout the UK. Provides free information about cancer and financial benefits. Also offers emotional and social support to people with cancer, their family, and friends.

Penny Brohn UK
Helpline 0303 3000 118
(Mon to Fri, 9.30am to 5pm)
Email helpline@pennybrohn.org.uk
www.pennybrohn.org.uk
Offers physical, emotional and spiritual support across the UK, using complementary therapies and self-help techniques.

Riprap
www.riprap.org.uk
Developed especially for teenagers in the UK who have a parent with cancer. Has an online forum where teenagers going through similar experiences can talk to each other for support.

Tenovus
Helpline 0808 808 1010
(Daily, 8am to 8pm)
Email
info@tenovuscancercare.org.uk
www.tenovuscancercare.org.uk
Aims to help everyone in the UK get equal access to cancer treatment and support. Funds research and provides support such as mobile cancer support units, a free helpline, benefits advice and an online 'Ask the nurse' service.

Counselling

British Association for Counselling and Psychotherapy (BACP)

Tel 0145 588 3300
(Mon to Fri, 9am to 5pm)
Email bacp@bacp.co.uk
www.bacp.co.uk
Promotes awareness of counselling and signposts people to appropriate services across the UK. You can also search for a qualified counsellor on their 'How to find a therapist' page.

UK Council for Psychotherapy (UKCP)

Tel 020 7014 9955
Email info@ukcp.org.uk
www.psychotherapy.org.uk
Holds the national register of psychotherapists and psychotherapeutic counsellors, listing practitioners who meet exacting standards and training requirements.

Emotional and mental health support

Mind

Helpline 0300 123 3393
(Mon to Fri, 9am to 6pm)
Text 86463
Email info@mind.org.uk
www.mind.org.uk
Provides information, advice and support to anyone with a mental health problem through its helpline and website.

Samaritans

Helpline 116 123
Email jo@samaritans.org
www.samaritans.org
Provides confidential and non-judgemental emotional support, 24 hours a day, 365 days a year, for people experiencing feelings of distress or despair.

LGBT-specific support

LGBT Foundation
Tel 0345 330 3030
(Mon to Fri, 10am to 6pm)
Email helpline@lgbt.foundation
www.lgbt.foundation
Provides a range of services to the LGBT community, including a helpline, email advice and counselling. The website has information on various topics including sexual health, relationships, mental health, community groups and events.

Cancer registries

The cancer registry
A national database that collects information on cancer diagnoses and treatment. This information helps the NHS and other organisations plan and improve health and care services. There is one in each country in the UK:

National Cancer Registration and Analysis Service
Tel 020 7654 8000
Email enquiries@phe.gov.uk
www.ncras.nhs.uk
Tel (Ireland) 021 4318 014
www.ncri.ie

Scottish Cancer Registry
Tel 0131 275 7050
Email nss.csd@nhs.net
www.isdscotland.org/health-topics/cancer/scottish-cancer-registry

Welsh Cancer Intelligence and Surveillance Unit (WCISU)
Tel 029 2037 3500
Email general.enquiries@wales.nhs.uk
www.wcisu.wales.nhs.uk

Northern Ireland Cancer Registry
Tel 028 9097 6028
Email nicr@qub.ac.uk
www.qub.ac.uk/nicr

Disclaimer

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Thanks

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Thanks also to the people affected by cancer who reviewed this edition, and those who shared their stories.

We welcome feedback on our information. If you have any, please contact **cancerinformationteam@macmillan.org.uk**

Sources

We have listed a sample of the sources used in the booklet below. If you would like more information about the sources we use, please contact us at **cancerinformationteam@macmillan.org.uk**

de Haan J, Verheecke M, et al. Oncological management and obstetric and neonatal outcomes for women diagnosed with cancer during pregnancy: a 20-year international cohort study of 1170 patients. Lancet Oncology. 2018. Vol 19.
Peccatori F A, et al. Cancer, pregnancy and fertility: ESMO Clinical Practice Guidelines for diagnosis, treatment and follow-up. Annals of Oncology. 2013. Volume 24: 160–170.
Zagouri F, et al. Cancer in pregnancy: disentangling treatment modalities. ESMO Open. 2016. Volume 10: 1136.

Can you do something to help?

We hope this booklet has been useful to you. It's just one of our many publications that are available free to anyone affected by cancer. They're produced by our cancer information specialists who, along with our nurses, benefits advisers, campaigners and volunteers, are part of the Macmillan team. When people are facing the toughest fight of their lives, we're there to support them every step of the way.

We want to make sure no one has to go through cancer alone, so we need more people to help us. When the time is right for you, here are some ways in which you can become a part of our team.

Share your cancer experience
Support people living with cancer by telling your story, online, in the media or face to face.

Campaign for change
We need your help to make sure everyone gets the right support. Take an action, big or small, for better cancer care.

Help someone in your community
A lift to an appointment. Help with the shopping. Or just a cup of tea and a chat. Could you lend a hand?

Raise money
Whatever you like doing you can raise money to help. Take part in one of our events or create your own.

Give money
Big or small, every penny helps. To make a one-off donation see over.

Call us to find out more

0300 1000 200

macmillan.org.uk/getinvolved

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In order to carry out our work we may need to pass your details to agents or partners who act on our behalf.

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Please cut out this form and return it in an envelope (no stamp required) to: Supporter Donations, Macmillan Cancer Support, FREEPOST LON15851, 89 Albert Embankment, London SE1 7UQ

This booklet is for anyone who has been diagnosed with cancer during pregnancy. The booklet talks about the possible signs and symptoms of cancer during pregnancy. It explains how it is diagnosed and how it may be treated. It also has information about emotional, and practical issues.

We're here to help everyone with cancer live life as fully as they can, providing physical, financial and emotional support. So whatever cancer throws your way, we're right there with you. For information, support or just someone to talk to, call **0808 808 00 00** (7 days a week, 8am to 8pm) or visit **macmillan.org.uk**

Would you prefer to speak to us in another language? Interpreters are available. Please tell us in English the language you would like to use. Are you deaf or hard of hearing? Call us using NGT (Text Relay) on **18001 0808 808 00 00**, or use the NGT Lite app.

Need information in different languages or formats? We produce information in audio, eBooks, easy read, Braille, large print and translations. To order these, visit **macmillan.org.uk/otherformats** or call our support line.

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