A brain tumour is a growth of cells in the brain that multiplies in an abnormal, uncontrollable way. It can either be cancerous (malignant) or non-cancerous (benign).

Bladder cancer is where a growth of abnormal tissue, known as a tumour, develops in the bladder lining. In some cases, the tumour spreads into the surrounding muscles.

The most common symptom of bladder cancer is blood in your urine, which is usually painless.

Once diagnosed, bladder cancer can be classified by how far it has spread.

If the cancerous cells are contained inside the lining of the bladder, doctors describe it as non-muscle-invasive bladder cancer. This is the most common type of bladder cancer, accounting for 7 out of 10 cases. Most people don?t die as a result of this type of bladder cancer.

When the cancerous cells spread beyond the lining, into the surrounding muscles of the bladder, it?s referred to as muscle-invasive bladder cancer. This is less common, but has a higher chance of spreading to other parts of the body and can be fatal.

If bladder cancer has spread to other parts of the body, it?s known as locally advanced or metastatic bladder cancer.

Most cases of bladder cancer appear to be caused by exposure to harmful substances, which lead to abnormal changes in the bladder?s cells over many years.

Tobacco smoke is a common cause and it?s estimated that half of all cases of bladder cancer are caused by smoking.

Contact with certain chemicals previously used in manufacturing is also known to cause bladder cancer. However, these substances have since been banned.

In cases of non-muscle-invasive bladder cancer, it?s usually possible to remove the cancerous cells while leaving the rest of the bladder intact.

This is done using a surgical technique called transurethral resection of a bladder tumour (TURBT). This is followed by a dose of chemotherapy medication directly into the bladder, to reduce the risk of the cancer returning.

Treatment for high-risk non-muscle-invasive bladder cancer, or muscle-invasive bladder cancer may involve surgically removing the bladder in an operation known as a cystectomy.

After treatment for all types of bladder cancer, you?ll have regular follow-up tests to check for signs of recurrence.

Bladder cancer is more common in older adults, with more than half of all new cases diagnosed in people aged 75 and over.

Bladder cancer is also more common in men than in women, possibly because in the past, men were more likely to smoke and work in the manufacturing industry.

Blood in your urine is the most common symptom of bladder cancer.

Less common symptoms of bladder cancer include:

If bladder cancer reaches an advanced stage and begins to spread, symptoms can include:

Having blood in your urine doesn?t mean you definitely have bladder cancer. There are other, more common, causes including:

Bladder cancer is caused by changes to the cells of the bladder. It?s often linked with exposure to certain chemicals, but the cause isn?t always known.

Cancer begins with a change (mutation) in the structure of the DNA in cells, which can affect how they grow. This means that cells grow and reproduce uncontrollably, producing a lump of tissue called a tumour.

Several factors have been identified that can significantly increase your risk of developing bladder cancer.

Smoking is the single biggest risk factor for bladder cancer. This is because tobacco contains cancer-causing (carcinogenic) chemicals.

If you smoke for many years, these chemicals pass into your bloodstream and are filtered by the kidneys into your urine. The bladder is repeatedly exposed to these harmful chemicals, as it acts as a store for urine. This can cause changes to the cells of the bladder lining, which may lead to bladder cancer.

It?s estimated that just over a third of all cases of bladder cancer are caused by smoking. People who smoke may be up to four times more likely to develop bladder cancer than non-smokers.

Chemicals known to increase the risk of bladder cancer include:

Occupations linked to an increased risk of bladder cancer are manufacturing jobs involving:

Some non-manufacturing jobs have also been linked to an increased risk of bladder cancer. These include taxi or bus drivers, as a result of their regular exposure to the chemicals present in diesel fumes.

The link between bladder cancer and these types of occupations was discovered in the 1950s and 1960s. Since then, regulations relating to exposure to cancer-causing chemicals have been made much more rigorous and many of the chemicals listed above have been banned.

However, these chemicals are still linked with cases of bladder cancer now, as it can take up to 30 years after initial exposure to the chemicals before the condition starts to develop.

Other factors that can increase your risk of bladder cancer include:

Bladder cancer usually begins in the cells of the bladder lining. In some cases, it may spread into surrounding bladder muscle. If the cancer penetrates this muscle, it can spread to other parts of the body, usually through the lymphatic system.

If bladder cancer spreads to other parts of the body, such as other organs, it?s known as metastatic bladder cancer.

If you have symptoms of bladder cancer, such as blood in your urine, you should speak to your GP.

Your GP may ask about your symptoms, family history and whether you?ve been exposed to any possible causes of bladder cancer, such as smoking.

Your GP may also carry out a physical examination of your rectum and vagina, as bladder cancer sometimes causes a noticeable lump that presses against them.

If your doctor suspects bladder cancer, you?ll be referred to a hospital for further tests.

An intravenous (IV) urogram may also be used to look at your whole urinary system before or after treatment for bladder cancer.

If abnormalities are found in your bladder during a cystoscopy, you should be offered an operation known as TURBT. This is so any abnormal areas of tissue can be removed and tested for cancer (a biopsy).

Once these tests have been completed, it should be possible to tell you the grade of the cancer and what stage it is.

Staging is a measurement of how far the cancer has spread. Lower-stage cancers are smaller and have a better chance of successful treatment.

Grading is a measurement of how likely a cancer is to spread. The grade of a cancer is usually described using a number system ranging from G1 to G3. High-grade cancers are more likely to spread than low-grade cancers.

The most widely used staging system for bladder cancer is known as the TNM system, where:

Bladder cancer up to the T1 stage is usually called early bladder cancer or non-muscle-invasive bladder cancer.

If the tumour grows larger than this, it?s usually called muscle-invasive bladder cancer and is categorised as:

If the tumour grows larger than the T3 stage, it?s considered to be advanced bladder cancer and is categorised as:

The treatment options for bladder cancer largely depend on how advanced the cancer is.

Treatments usually differ between early stage, non-muscle-invasive bladder cancer and more advanced muscle-invasive bladder cancer.

All hospitals use MDTs to treat bladder cancer. These are teams of specialists that work together to make decisions about the best way to proceed with your treatment.

If you?ve been diagnosed with non-muscle-invasive bladder cancer (stages CIS, Ta and T1), your recommended treatment plan depends on the risk of the cancer returning or spreading beyond the lining of your bladder.

People with intermediate-risk non-muscle-invasive bladder cancer should be offered a course of at least 6 doses of chemotherapy. The liquid is placed directly into your bladder, using a catheter, and kept there for around an hour before being drained away.

You should be offered follow-up appointments at 3 months, 9 months, 18 months, then once every year. At these appointments, your bladder will be checked using a cystoscopy. If your cancer returns within 5 years, you?ll be referred back to a specialist urology team.

You also shouldn?t try to get pregnant or father a child while having chemotherapy for bladder cancer, as the medication can increase the risk of having a child with birth defects.

The recommended treatment plan for muscle-invasive bladder cancer depends on how far the cancer has spread. With T2 and T3 bladder cancer, treatment aims to cure the condition if possible, or at least control it for a long time.

A radiosensitiser should also be given alongside radiotherapy for muscle-invasive bladder cancer. This is a medicine which affects the cells of a tumour, to enhance the effect of radiotherapy. It has a much smaller effect on normal tissue.

As well as destroying cancerous cells, radiotherapy can also damage healthy cells, which means it can cause a number of side effects. These include:

Having radiation directed at your pelvis usually means you?ll be infertile for the rest of your life. However, most people treated for bladder cancer are too old to have children, so this isn?t usually a problem.

After having radiotherapy for bladder cancer, you should be offered follow-up appointments every 3 months for the first 2 years, then every 6 months for the next 2 years, and every year after that. At these appointments, your bladder will be checked using a cystoscopy.

In some cases, chemotherapy may be used during treatment for muscle-invasive bladder cancer. Instead of medication being put directly into your bladder, it?s put into a vein in your arm. This is called intravenous chemotherapy and can be used:

The recommended treatment plan for locally advanced or metastatic bladder cancer depends on how far the cancer has spread. Your oncologist should discuss your treatment options with you, which may include:

You may be offered treatment to relieve any cancer symptoms. This may include:

If your cancer is at an advanced stage and can?t be cured, your MDT should discuss how the cancer will progress and which treatments are available to ease the symptoms.

A diagnosis of bladder cancer, and some treatments for the condition, can have a significant impact on your life.

The emotional impact of living with bladder cancer can be huge. Many people report experiencing a kind of ?rollercoaster? effect. For example, you may feel down at receiving a diagnosis, up when the cancer is removed, and down again as you try to come to terms with the after-effects of your treatment.

Many women find this an embarrassing issue to discuss, but the use of dilators is a well-recognised treatment for narrowing of the vagina. Your specialist cancer nurse should be able to provide more information and advice.

It?s not always possible to prevent bladder cancer, but some risk factors have been identified, which may increase your risk of developing the condition.

If you smoke, giving up is the best way to reduce your risk of developing bladder cancer and preventing it from recurring.

Your risk of bladder cancer could be increased if your job involves exposure to certain chemicals. Occupations linked to an increased risk of bladder cancer are manufacturing jobs involving:

Nowadays, there are rigorous safety protocols in place designed to minimise your risk of exposure, and chemicals known to increase the risk of bladder cancer have been banned. If you?re uncertain about what these protocols involve, talk to your line manager or health and safety representative.

There?s some evidence to suggest that a diet high in fruit and vegetables and low in fat can help to prevent bladder cancer.

There?s no conclusive evidence that prolonged exposure to sunlight or using sunbeds or sunlamps can improve acne. Many medications used to treat acne can make your skin more sensitive to light, so exposure could cause painful damage to your skin, and also increase your risk of skin cancer.

For example, out of a group of 10,000 women who haven?t taken co-cyprindiol, you would expect 16 of them to develop breast cancer by the time they were 35. This figure rises to 17 or 18 for women who were treated with co-cyprindiol for at least 5 years in their early twenties.

Bowel cancer is a general term for cancer that begins in the large bowel. Depending on where the cancer starts, bowel cancer is sometimes called colon or rectal cancer.

Cancer can sometimes start in the small bowel (small intestine), but small bowel cancer is much rarer than large bowel cancer.

Bowel cancer is one of the most common types of cancer diagnosed in the UK.

As almost 9 out of 10 people with bowel cancer are over the age of 60, these symptoms are more important as people get older. They are also more significant when they persist despite simple treatments.

Most people who are eventually diagnosed with bowel cancer have one of the following combinations of symptoms:

The symptoms of bowel cancer can be subtle and don?t necessarily make you feel ill.

It?s not known exactly what causes bowel cancer, but there are a number of things that can increase your risk. These include:

Bowel screening is offered to men and women aged 50 to 74 across Scotland to help find bowel cancer early when it can often be cured.

Bowel cancer can be treated using a combination of different treatments, depending on where the cancer is in your bowel and how far it has spread.

As with most types of cancer, the chances of a complete cure depends on how far it has advanced by the time it is diagnosed.

In the UK, an estimated 7 million people have blood in the stools each year. Even more people have temporary changes in their bowel habits and abdominal pain. Most people with these symptoms do not have bowel cancer.

As the vast majority of people with bowel cancer are over the age of 60, these symptoms are more important as people get older. These symptoms are also more significant when they persist in spite of simple treatments.

Most patients with bowel cancer present with one of the following symptom combinations:

The symptoms of bowel cancer can be subtle and don?t necessarily make you feel ill.

In some cases, bowel cancer can stop digestive waste passing through the bowel. This is known as a bowel obstruction.

Cancer occurs when the cells in a certain area of your body divide and multiply too rapidly. This produces a lump of tissue known as a tumour.

Exactly what causes cancer to develop inside the bowel is still unknown. However, research has shown several factors may make you more likely to develop it.

Your chances of developing bowel cancer increase as you get older. Almost 9 out of 10 cases of bowel cancer in the UK are diagnosed in people over the age of 60.

Having a family history of bowel cancer can increase your risk of developing the condition yourself, particularly if a close relative (mother, father, brother or sister) was diagnosed with bowel cancer below the age of 50.

If you are particularly concerned that your family?s medical history may mean you are at an increased risk of developing bowel cancer, it may help to speak to your GP.

A large body of evidence suggests a diet high in red and processed meat can increase your risk of developing bowel cancer.

There is also evidence that suggests a diet high in fibre could help reduce your bowel cancer risk.

Drinking alcohol has been shown to be associated with an increased risk of bowel cancer, particularly if you regularly drink large amounts.

People who are physically inactive have a higher risk of developing bowel cancer.

You can help reduce your risk of bowel and other cancers by being physically active every day.

If you have one of these conditions, you will usually have regular check-ups to look for signs of bowel cancer from about 10 years after your symptoms first develop.

The frequency of the colonoscopy examinations will increase the longer you live with the condition, and will also depend on factors such as how severe your ulcerative colitis is and if you have a family history of bowel cancer.

There are two rare inherited conditions that can lead to bowel cancer. They are:

Although the polyps caused by FAP are non-cancerous, there is a high risk that, over time, at least one will turn cancerous. Most people with FAP will have bowel cancer by the time they are 50.

As people with FAP have such a high risk of getting bowel cancer, they are often advised by their doctor to have their large bowel removed before they reach the age of 25.

Removing the bowel as a precautionary measure is also usually recommended in people with HNPCC because the risk of developing bowel cancer is so high.

When you first see your GP, they will ask about your symptoms and whether you have a family history of bowel cancer.

If your symptoms suggest you may have bowel cancer or the diagnosis is uncertain, you will be referred to your local hospital initially for a simple examination called a flexible sigmoidoscopy.

Most people with bowel cancer can be diagnosed by flexible sigmoidoscopy. However, some cancers can only be diagnosed by a more extensive examination of the colon.

The camera relays images to a monitor, which allows the doctor to check for any abnormal areas within the rectum or bowel that could be the result of cancer. As with a sigmoidoscopy, a biopsy may also be performed during the test.

This test can help identify potentially cancerous areas in people who are not suitable for a colonoscopy because of other medical reasons.

If a diagnosis of bowel cancer is confirmed, further testing is usually carried out to check if the cancer has spread from the bowel to other parts of the body. These tests also help your doctors decide on the most effective treatment for you.

Once the above examinations and tests have been completed, it should be possible to determine the stage and grade of your cancer.

Staging refers to how far your cancer has advanced. Grading relates to how aggressive your cancer is and how likely it is to spread.

This is important, as it helps your treatment team choose the best way of curing or controlling the cancer.

There are 3 grades of bowel cancer:

If you are not sure what stage or grade of cancer you have, ask your doctor.

If colon cancer is at a very early stage, it may be possible to remove just a small piece of the lining

of the colon wall. This is known as local excision.

If the cancer spreads into muscles surrounding the colon, it will usually be necessary to remove an entire section of your colon. This is known as a colectomy.

During surgery, nearby lymph nodes are also removed. It is usual to join the ends of the bowel together after bowel cancer surgery, but very occasionally this is not possible and a stoma is needed.

Both open and laparoscopic colectomies are thought to be equally effective at removing cancer and have similar risks of complications.

Laparoscopic colectomies should be available in all hospitals that carry out bowel cancer surgery, although not all surgeons perform this type of surgery. Discuss your options with your surgeon to see if this method can be used.

There are a number of different types of operation that can be carried out to treat rectal cancer, depending on how far the cancer has spread.

If you have a very small, early-stage rectal cancer, your surgeon may be able to remove it in an operation called a local resection (transanal resection).

The surgeon puts an endoscope in through your back passage and removes the cancer from the wall of the rectum.

This area will include a border of rectal tissue free of cancer cells, as well as fatty tissue from around

the bowel (the mesentery). This type of operation is known as total mesenteric excision (TME).

Removing the mesentery can help ensure all the cancerous cells are removed, which can lower the risk of the cancer recurring at a later stage.

Depending on where in your rectum the cancer is located, one of two main TME operations may be carried out.

Low anterior resection is a procedure used to treat cases where the cancer is in the upper section of your rectum.

The surgeon will make an incision in your abdomen and remove the upper section of your rectum, as well as some surrounding tissue to make sure any lymph glands containing cancer cells are also removed.

Abdominoperineal resection is used to treat cases where the cancer is in the lowest section of your rectum.

In this case, it will be necessary to remove the whole of your rectum and surrounding muscles to reduce the risk of the cancer regrowing in the same area.

Bowel cancer surgeons always do their best to avoid giving people permanent stomas wherever possible.

Bowel cancer operations carry many of the same risks as other major operations, including bleeding, infection, developing blood clots, or heart or breathing problems.

Another risk is for people having rectal cancer surgery. The nerves that control urination and sexual function are very close to the rectum, and sometimes surgery to remove rectal cancer can damage these nerves.

After rectal cancer surgery, most people need to go to the toilet to open their bowels more often than before, although this usually settles down within a few months of the operation.

There are 2 main ways radiotherapy can be used to treat bowel cancer. It can be given before surgery to shrink rectal cancers and increase the chances of complete removal, or be used to control symptoms and slow the spread of cancer in advanced cases (palliative radiotherapy).

Radiotherapy given before surgery for rectal cancer can be performed in 2 ways:

Chemotherapy for bowel cancer usually involves taking a combination of medications that kill cancer cells. They can be given as a tablet (oral chemotherapy), through a drip in your arm (intravenous chemotherapy), or as a combination of both.

Treatment is given in courses (cycles) that are 2 to 3 weeks long each, depending on the stage or grade of your cancer.

Monoclonal antibodies are antibodies that have been genetically engineered in a laboratory. They target special proteins found on the surface of cancer cells, known as epidermal growth factor receptors (EGFR).

As EGFRs help the cancer grow, targeting these proteins can help shrink tumours, and improve the

effect and outcome of chemotherapy.

Biological treatments are therefore usually used in combination with chemotherapy when the cancer has spread beyond the bowel (metastatic bowel cancer).

These treatments are not available to everyone with bowel cancer. The National Institute for Health and Care Excellence (NICE) has specific criteria that need to be met before these can be prescribed.

Cetuximab, bevacizumab and panitumumab are available on the NHS through a government scheme called the Cancer Drugs Fund. All these medications are also available privately, but are very expensive.

Some people find it helpful to talk to others with bowel cancer at a local support group or through an internet chat room.

The organisation also runs a national patient-to-patient network called Bowel Cancer Voices for people affected by bowel cancer and their relatives.

Having cancer can cause a range of emotions. These may include shock, anxiety, relief, sadness and depression.

Different people deal with serious problems in different ways. It is hard to predict how knowing you have cancer will affect you.

However, you and your loved ones may find it helpful to know about the feelings that people

diagnosed with cancer have reported.

Read about the emotional effects of cancer

Surgeons and anaesthetists have found using an enhanced recovery programme after bowel cancer surgery helps patients recover more quickly.

You will be asked to return to hospital a few weeks after your treatment has finished so tests can be carried out to check for any remaining signs of cancer. You may also need routine check-ups for the next few years to look out for signs of the cancer recurring.

Having cancer and receiving treatment may affect how you feel about relationships and sex. Although most people are able to enjoy a normal sex life after bowel cancer treatment, you may feel self-conscious or uncomfortable if you have a stoma.

A diagnosis of cancer can cause money problems because you are unable to work, or someone you are close to has to stop working to look after you.

If you are told there is nothing more that can be done to treat your bowel cancer, your GP will still provide you with support and pain relief. This is called palliative care. Support is also available for your family and friends.

There are some things that increase your risk of bowel cancer that you can?t change, such as your family history or your age.

It may help prevent bowel cancer if you eat:

The Department of Health advises people who eat more than 90g (cooked weight) of red and processed meat a day to cut down to 70g to help reduce their bowel cancer risk.

Regular exercise can lower the risk of developing bowel and other cancers.

Being overweight or obese increases your chances of developing bowel cancer, so you should try to maintain a healthy weight if you want to lower your risk.

If you smoke, stopping can reduce your risk of developing bowel and other cancers.

Drinking alcohol has been linked to an increased risk of developing bowel cancer, so you may be able to reduce your risk by cutting down on the amount of alcohol you drink.

Although screening cannot stop you getting bowel cancer, it can allow the condition to be detected at an earlier stage, when it is much easier to treat.

Breast cancer is the most common type of cancer in the UK.

If it?s treated early enough, breast cancer can be prevented from spreading to other parts of the body.

The body is made up of billions of tiny cells, which usually grow and multiply in an orderly way. New cells are only produced when and where they?re needed. In cancer, this orderly process goes wrong and cells begin to grow and multiply uncontrollably.

Breast cancer can have a number of symptoms, but the first noticeable symptom is usually a lump or area of thickened breast tissue.

Most breast lumps aren?t cancerous, but it?s always best to have them checked by your doctor. You should also speak to your GP if you notice any of the following:

Breast pain alone isn?t a symptom of breast cancer.

There are several different types of breast cancer, which can develop in different parts of the breast. Breast cancer is often divided into non-invasive and invasive types.

Non-invasive breast cancer is also known as cancer or carcinoma in situ. This cancer is found in the ducts of the breast and hasn?t developed the ability to spread outside the breast.

This form of cancer rarely shows as a lump in the breast that can be felt, and is usually found on a mammogram. The most common type of non-invasive cancer is ductal carcinoma in situ (DCIS).

Invasive cancer has the ability to spread outside the breast, although this doesn?t necessarily mean it has spread.

The most common form of breast cancer is invasive ductal breast cancer, which develops in the cells that line the breast ducts. Invasive ductal breast cancer accounts for about 80% of all breast cancer cases and is sometimes called ?no special type?.

It?s possible for breast cancer to spread to other parts of the body, usually through the lymph nodes (small glands that filter bacteria from the body) or the bloodstream. If this happens, it?s known as

?secondary? or ?metastatic? breast cancer.

There?s a good chance of recovery if breast cancer is detected in its early stages. For this reason, it?s vital that women check their breasts regularly for any changes and always get any changes examined by their GP.

Women with a higher-than-average risk of developing breast cancer may be offered screening and genetic testing for the condition.

As the risk of breast cancer increases with age, all women who are 50 to 70 years old are invited for breast cancer screening every 3 years.

If cancer is detected at an early stage, it can be treated before it spreads to nearby parts of the body.

The type of surgery and the treatment you have afterwards will depend on the type of breast cancer you have. Your doctor will discuss the best treatment plan with you.

In a small proportion of women, breast cancer is discovered after it?s spread to other parts of the body (metastasis). Secondary cancer, also called advanced or metastatic cancer, isn?t curable, so the aim of treatment is to achieve remission (symptom relief).

As the causes of breast cancer aren?t fully understood, it?s not possible to know if it can be prevented altogether.

It?s been suggested that regular exercise can reduce your risk of breast cancer by as much as a

third. If you?ve been through the menopause, it?s particularly important that you?re not overweight or obese. This is because being overweight or obese causes more oestrogen to be produced, which can increase the risk of breast cancer.

Being diagnosed with breast cancer can affect daily life in many ways, depending on what stage it?s at and what treatment you?re having.

The first symptom of breast cancer most women notice is a lump or an area of thickened tissue in their breast.

Most breast lumps (90%) aren?t cancerous, but it?s always best to have them checked by your doctor.

Breast pain alone isn?t a symptom of breast cancer.

The causes of breast cancer aren?t fully understood, making it difficult to say why one woman may develop breast cancer and another may not.

However, there are risk factors that are known to affect your likelihood of developing breast cancer. Some of these you can?t do anything about, but there are some you can change.

All women who are 50 to 70 years of age should be screened for breast cancer every 3 years as part of the NHS Breast Screening Programme. Women over the age of 70 are still eligible to be screened and can arrange this through their GP or local screening unit.

Most cases of breast cancer aren?t hereditary (they don?t run in families), but particular genes,

known as BRCA1 and BRCA2, can increase your risk of developing both breast and ovarian cancer. It?s possible for these genes to be passed on from a parent to their child. A third gene (TP53) is also associated with an increased risk of breast cancer.

If you have, for example, 2 or more close relatives from the same side of your family, such as your mother, sister or daughter, who have had breast cancer under the age of 50, you may be eligible for surveillance for breast cancer or for genetic screening to look for the genes that make developing breast cancer more likely. If you?re worried about your family history of breast cancer, discuss it with your GP.

If you?ve previously had breast cancer or early non-invasive cancer cell changes in breast ducts, you have a higher risk of developing it again, either in your other breast or in the same breast again.

Your breasts are made up of thousands of tiny glands (lobules), which produce milk. This glandular tissue contains a higher concentration of breast cells than other breast tissue, making it denser. Women with dense breast tissue may have a higher risk of developing breast cancer because there are more cells that can become cancerous.

If you?re taller than average, you?re more likely to develop breast cancer than someone who?s shorter than average. The reason for this isn?t fully understood, but it may be due to interactions between genes, nutrition and hormones.

If you currently need radiotherapy for Hodgkin lymphoma, your specialist should discuss the risk of breast cancer before your treatment begins.

If you have suspected breast cancer, either because of your symptoms or because your

mammogram has shown an abnormality, you?ll be referred to a specialist breast clinic for further tests.

Needle aspiration may be used to test a sample of your breast cells for cancer or to drain a benign cyst (a small fluid-filled lump). Your doctor will use a small needle to extract a sample of cells, without removing any tissue.

Your doctor may suggest that you have a guided needle biopsy (usually guided by ultrasound or X-ray, but sometimes MRI is used) to obtain a more precise and reliable diagnosis of cancer and to distinguish it from any non-invasive change, particularly ductal carcinoma in situ (DCIS).

If a diagnosis of breast cancer is confirmed, more tests will be needed to determine the stage and grade of the cancer, and to work out the best method of treatment.

If your cancer was detected through the NHS Breast Screening Programme, you?ll have further tests in the screening centre before being referred for treatment.

If your doctor thinks that the cancer could have spread to your bones, you may need a bone scan. Before having a bone scan, a substance containing a small amount of radiation, known as an isotope, will be injected into a vein in your arm. This will be absorbed into your bone if it?s been affected by cancer. The affected areas of bone will show up as highlighted areas on the bone scan, which is carried out using a special camera.

You?ll also need tests that show whether the cancer will respond to specific types of treatment. The results of these tests can give your doctors a more complete picture of the type of cancer you have and how best to treat it. The types of test you could be offered are discussed below.

In some cases, breast cancer cells can be stimulated to grow by hormones that occur naturally in your body, such as oestrogen and progesterone.

If this is the case, the cancer may be treated by stopping the effects of the hormones, or by lowering the level of these hormones in your body. This is known as ?hormone therapy?.

During a hormone receptor test, a sample of cancer cells will be taken from your breast and tested to see if they respond to either oestrogen or progesterone. If the hormone is able to attach to the cancer cells (using a hormone receptor), they?re known as ?hormone receptor positive?.

While hormones can encourage the growth of some types of breast cancer, other types are stimulated by a protein called human epidermal growth factor receptor 2 (HER2).

These types of cancer can be diagnosed using a HER2 test, and treated with medication to block the effects of HER2. This is known as ?biological? or ?targeted? therapy.

When your breast cancer is diagnosed, the doctors will give it a stage. The stage describes the size of the cancer and how far it has spread.

Ductal carcinoma in situ (DCIS) is sometimes described as stage 0. Other stages of breast cancer describe invasive breast cancer:

The TNM staging system may also be used to describe breast cancer, as it can provide accurate information about the diagnosis. T describes the size of the tumour, N describes whether cancer has spread to the lymph nodes, and M gives an indication of whether the cancer has spread to other

parts of the body.

The grade describes the appearance of the cancer cells.

Surgery is usually the first type of treatment for breast cancer. The type of surgery you undergo will depend on the type of breast cancer you have.

Surgery is usually followed by chemotherapy or radiotherapy or, in some cases, hormone or biological treatments. Again, the treatment you?ll have will depend on your type of breast cancer.

Most breast cancers are discovered in the condition?s early stages. However, a small proportion of women discover that they have breast cancer after it?s spread to other parts of the body (known as metastasis).

If this is the case, the type of treatment you have may be different. Secondary cancer, also called ?advanced? or ?metastatic? cancer, isn?t curable and treatment aims to achieve remission (where the cancer shrinks or disappears, and you feel normal and able to enjoy life to the full).

Read further information about secondary breast cancer

There are 2 main types of breast cancer surgery. They are:

Studies have shown that breast-conserving surgery followed by radiotherapy is as successful as total mastectomy at treating early-stage breast cancer.

Your surgeon will always remove an area of healthy breast tissue around the cancer, which will be

tested for traces of cancer. If there?s no cancer present in the healthy tissue, there?s less chance that the cancer will reoccur. If cancer cells are found in the surrounding tissue, more tissue may need to be removed from your breast.

After having breast-conserving surgery, you will usually be offered radiotherapy to destroy any remaining cancer cells.

A mastectomy is the removal of all the breast tissue, including the nipple. If there are no obvious signs that the cancer has spread to your lymph nodes, you may have a mastectomy, where your breast is removed, along with a sentinel lymph node biopsy.

If the cancer has spread to your lymph nodes, you will probably need more extensive removal (clearance) of lymph nodes from the axilla (under your arm).

To find out if the cancer has spread, a procedure called a sentinel lymph node biopsy may be carried out.

The sentinel lymph nodes are the first lymph nodes that the cancer cells reach if they spread. They?re part of the lymph nodes under the arm (axillary lymph nodes). The position of the sentinel lymph nodes varies, so they?re identified using a combination of a radioisotope and a blue dye.

The sentinel lymph nodes are examined in the laboratory to see if there are any cancer cells present. This provides a good indicator of whether the cancer has spread.

If there are cancer cells in the sentinel nodes, you may need further surgery to remove more lymph nodes from under the arm.

Radiotherapy uses controlled doses of radiation to kill cancer cells. It?s usually given after surgery and chemotherapy to kill any remaining cancer cells.

The type of radiotherapy you have will depend on your cancer and surgery type. Some women may not need to have radiotherapy at all. The types available are:

Read further information about radiotherapy for breast cancer

Chemotherapy involves using anti-cancer (cytotoxic) medication to kill the cancer cells. It?s usually used after surgery to destroy any cancer cells that haven?t been removed. This is called adjuvant chemotherapy.

Several different medications are used for chemotherapy and three are often given at once. The choice of medication and the combination will depend on the type of breast cancer you have and how much it?s spread.

Chemotherapy medication can also stop the production of oestrogen in your body, which is known to encourage the growth of some breast cancers.

Chemotherapy for secondary breast cancer

If your breast cancer has spread beyond the breast and lymph nodes to other parts of your body, chemotherapy won?t cure the cancer, but it may shrink the tumour, relieve your symptoms and help lengthen your life.

Read further information about chemotherapy for breast cancer

Some breast cancers are stimulated to grow by the hormones oestrogen or progesterone, which are found naturally in your body.

These types of cancer are known as hormone-receptor-positive cancers. Hormone therapy works by lowering the levels of hormones in your body or by stopping their effects.

The type of hormone therapy you?ll have will depend on the stage and grade of your cancer, which hormone it?s sensitive to, your age, whether you?ve experienced the menopause and what other type of treatment you?re having.

Hormone therapy may be used as the only treatment for breast cancer if your general health prevents you from having surgery, chemotherapy or radiotherapy.

In most cases, you?ll need to take hormone therapy for up to five years after having surgery. If your breast cancer isn?t sensitive to hormones, hormone therapy will have no effect.

Tamoxifen stops oestrogen from binding to oestrogen-receptor-positive cancer cells. It?s taken every day as a tablet or liquid. It can cause several side effects, including:

Some breast cancers are stimulated to grow by a protein called human epidermal growth factor receptor 2 (HER2). These cancers are called HER2-positive. Biological therapy works by stopping the effects of HER2 and by helping your immune system to fight off cancer cells.

Trastuzumab is a type of biological therapy known as a monoclonal antibody. Antibodies occur

naturally in your body and are made by your immune system to destroy harmful cells, such as viruses and bacteria. The trastuzumab antibody targets and destroys cancer cells that are HER2-positive.

You will have the treatment in hospital. Each treatment session takes up to one hour and the number of sessions you need will depend on whether you have early or more advanced breast cancer. On average, you?ll need a session once every three weeks for early breast cancer, and weekly sessions if your cancer is more advanced.

A great deal of progress has been made in breast cancer treatment, and more women now live longer and have fewer side effects from treatment.

All cancer trials in the UK are carefully overseen to ensure they?re worthwhile and safely conducted. In fact, participants in clinical trials can do better overall than those in routine care.

Dealing with cancer can be a huge challenge, for both patients and their families. It can cause emotional and practical difficulties. Many women have to cope with the removal of part or all of a breast, which can be very upsetting.

It can help to talk to someone who?s been through the same thing as you. Many organisations have helplines and online forums. They can also put you in touch with other people who?ve had cancer treatment.

Your hospital or breast unit may be able to provide access to complementary therapies or suggest where you can get them. It?s important to speak to your breast cancer specialist nurse about any complementary therapy you wish to use, to make sure it doesn?t interfere with your conventional

treatment.

Most women with breast cancer have an operation as part of their treatment. Getting back to normal after surgery can take some time. It?s important to take things slowly and give yourself time to recover.

If you?ve had early breast cancer, your healthcare team will agree a care plan with you after your treatment has finished. This plan contains the details of your follow-up. You will receive a copy of the plan, which will also be sent to your GP.

Although it?s rare, your treatment for breast cancer may cause new problems, such as:

A diagnosis of breast cancer may change how you think about your body. All women react differently to the bodily changes that happen as a result of breast cancer treatment. Some women react positively, but others find it more difficult to cope. It?s important to give yourself time to come to terms with any changes to your body.

Breast cancer and its treatment can affect your sex life. It?s common for women to lose interest in sex after breast cancer treatment. Your treatment may leave you feeling very tired. You may feel shocked, confused or depressed about being diagnosed with cancer. You may be upset by the changes to your body or grieve the loss of your breasts or, in some cases, your fertility.

If you have to reduce or stop work because of your cancer, you may find it difficult to cope financially.

If you have cancer or you?re caring for someone with cancer, you may be entitled to financial

support, for example:

Your GP or nurse may be able to answer any questions you have about your cancer or treatment. You may find it helpful to talk to a trained counsellor or psychologist, or to someone at a specialist helpline. Your GP surgery will have information on these.

Some people find it helpful to talk to other people who have breast cancer, either at a local support group or in an internet chatroom.

As the causes of breast cancer aren?t fully understood, it?s not known if it can be prevented altogether.

If you have an increased risk of developing breast cancer, treatment is available to reduce your risk.

You will usually be referred to a specialist genetics service if it?s thought you have an increased risk of breast cancer. Healthcare professionals working at these services should discuss treatment options with you.

By removing as much breast tissue as possible, a mastectomy can reduce your risk of breast cancer by up to 90%.

Women who?ve already had a mastectomy to remove both breasts won?t be offered these medications, because their risk of developing breast cancer is very small.

Tamoxifen and raloxifene aren?t currently licensed for the purpose of reducing the risk of breast cancer in women with an increased risk of developing the condition. However, they can still be used

if you understand the benefits and risks, and your doctor believes the treatment will be helpful.

Cervical cancer is a type of cancer that develops in a woman?s cervix (the entrance to the womb from the vagina).

Abnormal bleeding doesn?t mean that you definitely have cervical cancer, but it should be investigated by your GP as soon as possible. If your GP thinks you might have cervical cancer, you should be referred to see a specialist within 2 weeks.

If you have unusual discharge, or bleeding after sex, between periods or after the menopause, contact your GP practice. These symptoms are not usually caused by cancer but it?s important to have them checked.

There are more than 100 different types of HPV, many of which are harmless. However, some types of HPV can cause abnormal changes to the cells of the cervix, which can eventually lead to cervical cancer.

Two strains of the HPV virus (HPV 16 and HPV 18) are known to be responsible for 70% of all cases of cervical cancer. These types of HPV infection don?t have any symptoms, so many women won?t realise they have the infection.

However, it?s important to be aware that these infections are relatively common and most women who have them don?t develop cervical cancer.

Many women with cervical cancer will have complications. These can arise as a direct result of the cancer or as a side effect of treatments such as radiotherapy, chemotherapy and surgery.

Complications associated with cervical cancer can range from the relatively minor, such as minor bleeding from the vagina or having to urinate frequently, to life-threatening, such as severe bleeding or kidney failure.

The stage at which cervical cancer is diagnosed is an important factor in determining outlook. The staging, given as a number from 1 to 4, indicates how far the cancer has spread.

The chances of living for at least 5 years after being diagnosed with cervical cancer are:

Following the success of the NHS Cervical Screening Programme and the early detection of cell changes, the number of cervical cancer cases in the UK has reduced. Around 3,000 cases of cervical cancer are diagnosed in the UK each year.

It?s possible for women of all ages to develop cervical cancer, but the condition mainly affects sexually active women aged between 30 and 45. Cervical cancer is very rare in women under 25.

The symptoms of cervical cancer aren?t always obvious, and it may not cause any symptoms at all until it?s reached an advanced stage.

In most cases, vaginal bleeding is the first noticeable symptom of cervical cancer. It usually occurs after having sex.

Other symptoms of cervical cancer may include pain and discomfort during sex and an unpleasant smelling vaginal discharge.

If the cancer spreads out of your cervix and into surrounding tissue and organs, it can trigger a range of other symptoms, including:

Vaginal bleeding is very common and can have a wide range of causes, so it doesn?t necessarily mean you have cervical cancer. However, unusual vaginal bleeding is a symptom that needs to be investigated by your GP.

In almost all cases, cervical cancer is the result of a change in cell DNA caused by the human papilloma virus (HPV).

Cancer begins with a change in the structure of the DNA that?s present in all human cells. DNA provides the cells with a basic set of instructions, including when to grow and reproduce.

More than 99% of cervical cancer cases occur in women who have been previously infected with HPV. HPV is a group of viruses, rather than a single virus. There are more than 100 different types.

About 15 types of HPV are considered high-risk for cervical cancer. The 2 types known to have the highest risk are HPV 16 and HPV 18, which cause about 7 out of every 10 cervical cancers.

High-risk types of HPV are thought to contain genetic material that can be passed into the cells of the cervix. This material begins to disrupt the normal workings of the cells, which can eventually cause them to reproduce uncontrollably, leading to the growth of a cancerous tumour.

Cancer of the cervix usually takes many years to develop. Before it does, the cells in the cervix often show changes known as cervical intraepithelial neoplasia (CIN) or, less commonly, cervical glandular intraepithelial neoplasia (CGIN).

CIN and CGIN are pre-cancerous conditions. Pre-cancerous conditions don?t pose an immediate threat to a person?s health, but they can potentially develop into cancer in the future.

The progression from becoming infected with HPV to developing CIN or CGIN and then developing cervical cancer is very slow, often taking 10 to 20 years.

The fact that HPV infection is very common but cervical cancer is relatively uncommon suggests that only a very small proportion of women are vulnerable to the effects of an HPV infection. There appear to be additional risk factors that affect a woman?s chance of developing cervical cancer. These include:

The reason for the link between cervical cancer and childbirth is unclear. One theory is that the hormonal changes that occur during pregnancy may make the cervix more vulnerable to the effects of HPV.

If cervical cancer is undiagnosed and untreated, it will slowly spread out of the cervix and into the surrounding tissue and organs. The cancer can spread down to the vagina and the surrounding muscles that support the bones of the pelvis. Alternatively, it can spread upwards, blocking the tube that runs from your kidneys to your bladder (ureters).

The cancer can then spread into your bladder, rectum (back passage) and eventually into your liver, bones and lungs. Cancerous cells can also spread through your lymphatic system. The lymphatic system is a series of nodes (glands) and channels spread throughout your body in a similar way to the blood circulation system.

In some cases of early cervical cancer, the lymph nodes close to the cervix contain cancerous cells. In some cases of advanced cervical cancer, lymph nodes in the chest and abdomen can be affected.

If cervical cancer is suspected, you?ll be referred to a gynaecologist (a specialist in treating conditions of the female reproductive system).

During a cone biopsy, a small, cone-shaped section of your cervix will be removed so that it can be examined under a microscope for cancerous cells. You may experience vaginal bleeding for up to four weeks after the procedure. You may also have period-like pains.

If the results of the biopsy suggest you have cervical cancer and there?s a risk that the cancer may have spread, you?ll probably need to have some further tests to assess how widespread the cancer is. These tests may include:

After all of the tests have been completed and your test results are known, it should be possible to tell you what stage cancer you have. Staging is a measurement of how far the cancer has spread. The higher the stage, the further the cancer has spread. The staging for cervical cancer is as follows:

Treatment for cervical cancer depends on how far the cancer has spread.

As cancer treatments are often complex, hospitals use multidisciplinary teams (MDTs) to treat cervical cancer and tailor the treatment programme to the individual.

Your cancer team will recommend what they think the best treatment options are, but the final

decision will be yours. In most cases, the recommendations will be:

The prospect of a complete cure is good for cervical cancer diagnosed at an early stage, although the chances of a complete cure decrease the further the cancer has spread.

If your screening results show that you don?t have cervical cancer, but there are biological changes that could turn cancerous in the future, a number of treatment options are available. These include:

There are 3 main types of surgery for cervical cancer. They are:

A radical trachelectomy is usually only suitable if cervical cancer is diagnosed at a very early stage. It?s usually offered to women who want to preserve their child-bearing potential.

There are 2 types of hysterectomies used to treat cervical cancer:

A pelvic exenteration is a major operation that?s usually only recommended when cervical cancer returns after what was thought to be a previously successful course of treatment. It?s offered if the cancer returns to the pelvis, but hasn?t spread beyond this area.

As well as destroying cancerous cells, radiotherapy can sometimes also harm healthy tissue. This means it can cause significant side effects many months, and even years, after treatment.

However, the benefits of radiotherapy often tend to outweigh the risks. For some people, radiotherapy offers the only hope of getting rid of the cancer.

Chemotherapy involves using either a single chemotherapy medication called cisplatin or a

combination of different chemotherapy medications to kill the cancerous cells.

After your treatment has been completed and the cancer has been removed, you?ll need to attend regular appointments for testing. This will usually involve a physical examination of your vagina and cervix (if it hasn?t been removed).

As there?s a risk of cervical cancer returning, these examinations will be used to look for signs of this. If anything suspicious is found, a further biopsy can be carried out.

If cervical cancer does return, it usually returns around 18 months after a course of treatment has been completed.

Complications of cervical cancer can occur as a side effect of treatment or as the result of advanced cervical cancer.

Radiotherapy to treat cervical cancer can often cause your vagina to become narrower, which can make having sex painful or difficult.

Many women find discussing the use of a vaginal dilator embarrassing, but it?s a standard and well-recognised treatment for narrowing of the vagina. Your specialist cancer nurse or radiographers in the radiotherapy department should be able to give you more information and advice.

The emotional impact of living with cervical cancer can be significant. Many people report experiencing a ?rollercoaster? effect.

For example, you may feel down when you receive a diagnosis, but feel better when removal of the

cancer has been confirmed. You may then feel down again as you try to come to terms with the after-effects of your treatment.

Local cancer support groups may also be available in your area for women affected by cancer. Your specialist cancer nurse should be able to provide contact details.

Read more about feelings and cancer

Some of the complications that can occur in advanced cervical cancer are discussed below.

If the cancer spreads into your nerve endings, bones or muscles, it can often cause severe pain.

In some cases of advanced cervical cancer, the cancerous tumour can press against the ureters, blocking the flow of urine out of the kidneys. The build-up of urine inside the kidneys is known as hydronephrosis and can cause the kidneys to become swollen and stretched.

Treatment options for kidney failure associated with cervical cancer include draining urine out of the kidneys using a tube inserted through the skin and into each kidney (percutaneous nephrostomy). Another option is to widen the ureters by placing a small metal tube called a stent inside them.

If the cancer spreads into your vagina, bowel or bladder, it can cause significant damage, resulting in bleeding. Bleeding can occur in your vagina or rectum (back passage), or you may pass blood when you urinate.

Minor bleeding can often be treated using a medication called tranexamic acid, which encourages the blood to clot and stop the bleeding. Radiotherapy can also be highly effective in controlling

bleeding caused by cancer.

A fistula is an uncommon but distressing complication that occurs in around 1 in 50 cases of advanced cervical cancer.

A fistula is an abnormal channel that develops between 2 sections of the body. In most cases involving cervical cancer, the fistula develops between the bladder and the vagina. This can lead to a persistent discharge of fluid from the vagina. A fistula can sometimes develop between the vagina and rectum.

Surgery is usually required to repair a fistula, although it?s often not possible in women with advanced cervical cancer, because they?re usually too frail to withstand the effects of surgery.

Another uncommon, but distressing, complication of advanced cervical cancer is an unpleasant-smelling discharge from your vagina.

There are different options for terminal care in the late stages of cancer. You may want to think about whether you?d like to be cared for in hospital, in a hospice or at home, and discuss these issues with your doctor. Some organisations who provide care for people with cancer include:

The impact of cervical cancer on your daily life will depend on the stage of cancer and the treatment you?re having.

Having cervical cancer doesn?t necessarily mean you?ll have to give up work, although you may need quite a lot of time off. During treatment, you may not be able to carry on as you did before.

If you have to reduce or stop work because of your cancer, you may find it difficult to cope financially. If you have cancer or you?re caring for someone with cancer, you may be entitled to financial support. For example:

Many women feel nervous about having sex soon after treatment for cervical cancer, but it?s perfectly safe. Sex won?t make the cancer come back and your partner can?t catch cancer from you.

Some women find sex difficult after being treated for cervical cancer, because the side effects of some treatments can include vaginal dryness and narrowing of the vagina. In these cases, there are treatments that can help, such as vaginal dilators.

There?s no single way to completely prevent cervical cancer, but there are things that can reduce your risk.

It?s important that you attend your cervical screening tests, even if you?ve been vaccinated for HPV, because the vaccine doesn?t guarantee protection against cervical cancer.

You can reduce your chances of getting cervical cancer by not smoking. People who smoke are less able to get rid of the HPV infection from the body, which can develop into cancer.