

Cancer

Cancer is one of the most common diseases of our time, and probably the most feared illness. Rightly so, for according to a World Health Organisation study on populations of some 50 countries, the incidence of cancer is much higher in industrialised Western societies when compared to the Asian populations. For example, depending on which western country you reside in, your chances of dying from breast or prostate cancer are between ten to 20 times greater than those consuming a typically Asian diet, whilst living in countries like Japan, China or Thailand. At present at least 20 per cent of the UK population will die of cancer, and it is thought that one in three will be affected by cancer in the UK, at some stage in their lives. More than one in four people will have cancer during their lifetime and, after heart disease, cancer is the most common cause of death in western countries. Statistics are on the increase because of the ever-expanding population. The peak incidence of adult cancer is after the age of 45. Sadly, we have reached the point where most of us have either a family member or friend who has become a cancer victim.

However, research is now showing that cancer is not inevitable, and it seems to be related more to diet and environmental factors than genetic disposition. To support this theory, let's look at what happens to the incidence of breast cancer when women move from Asia to the west and adopt the local diet. Ten times more women currently die of breast cancer in England and Wales than in Korea, and Japan loses one quarter of women to breast cancer compared to the USA. Research shows us that when Asian women migrate and adopt western eating habits, their statistics for cancer mimic those of the western world in a relatively short period of time. In fact, the rate at which the statistics change is directly related to the speed and extent to which the dietary changes are made.

How does cancer develop?

The cells in our body are constantly dividing and reproducing. The approximately 100 trillion cells in the average body are likely to reproduce 10,000 billion times in a lifetime, which means that in every minute of every day about 10 million of your cells divide. Healthy cells are incredibly intelligent. They know precisely when it is time to grow or divide, and when to stop, and this wisdom is known as 'the cell cycle'. These microscopic cells are also exceptionally astute as they are able to differentiate. They know how a kidney cell should act for example compared to a brain or a breast cell.

Not all cells have the potential to become cancerous, only those known as stem cells are candidates, and although stem cells usually divide correctly, sometimes things go wrong. Unlike normal cells, cancer cells lose their ability to differentiate; they return anonymous looking cells that instead of performing the particular function of the parent cell simply grow and disrupt the activity of healthy cells around them. The rapidly developing mass is known as a tumour which may either be benign (non-cancerous) or malignant (cancerous). When tumours or masses become sufficiently large, the adjacent organs fail to function properly, and if untreated, eventually death results.

The genetic material at the centre or nucleus of the cell determines our characteristics and is known as deoxyribonucleic acid (DNA). Its job is to give cells instructions about the production of proteins, including enzymes, without which we could not survive. When a cell divides it usually makes an exact copy of the DNA to pass on to the daughter cell. Usually this process progresses without problems, but in somewhere between one in a million and one in 100 million events a mistake occurs and the result can be a cancer cell. A damaged cell may lay dormant for many years or months before it is triggered to multiply. There is now strong scientific evidence to suppose that oestrogen encourages these 'damaged' cell's to start dividing. Many studies have shown that when oestrogen attaches itself to the receptor site within a cell, it can stimulate the cell to divide and grow abnormally. It speeds up the cell cycle and interferes with the cell's normal growth mechanism. This theory is not new, however, as in the 1880s doctors observed that women with breast cancer, who had their ovaries removed, subsequently had shrinking tumours.

Whilst it is thought that in some cases cancer may have a genetic element, for example, breast cancer is more likely to affect daughters of victims, and colon cancer can pass through families, the majority of us are not genetically fated to become cancer victims. Instead, the diet, lifestyle and environment will determine how our cells reproduce and whether or not they become cancerous.

What are the symptoms?

- *A lump* This may be the initial growth itself or a secondary deposit. New lumps or bumps anywhere should be taken seriously by your doctor. They do not have to be painful to be cancerous.
- *Pain* This is not usually an early symptom. Cancer in the bones or where the lump presses on a nerve in a confined space may lead to pain.
- *Weight loss* This is often the feature of an advanced cancer, but may also occur in the early stages of cancers affecting the stomach or other digestive organs.

- *Fatigue* This has many causes, but in patients with cancer this can be due to the associated anaemia or other affects on general metabolism.
- *Fever* Although usually caused by an infection, even in patients with cancer, this may sometimes be a feature of certain blood and glandular growths.

Risk factors for cancer

What causes it?

- Surprisingly, increased age is about the greatest risk for cancer. Of course some cancers occur in childhood, especially leukaemia and those related to certain rare genetic disorders. The majority of common cancers however occur over the age of 40. The good news is that in some very old populations the risk seems to fall, but from middle age onwards the risk is rising. This is perhaps because it takes time for some of the other causative factors to have an influence upon cells in a way that will make them change into cancerous ones. A few cancers do occur at a younger age and these include carcinoma of the cervix, some types of breast cancer and cancer of the lymph glands, Hodgkin's disease.
- Cigarette smoking is probably the next most easily identifiable factor in cancer. Its association with lung cancer is well known. What is not widely appreciated is that it is also associated with an increased risk of many other cancers, including the mouth, throat, oesophagus, the pancreas, the bladder and others. It is estimated that approximately one-third of all cancers are linked to smoking. Smoking switches off the 'guardian angel' P53 gene which checks our DNA to ensure that it has not been damaged. Smoking also increases free oxidising radicals (FORs), responsible for damaging our DNA.
- Fluid intake is a risk factor too. Smokers who drink a lot of fluid – not alcohol – halve their risk of bladder cancer, probably because the levels of cancer-causing chemicals in the urine are diluted.
- Increased risk of breast cancer is sited in women who have never had a pregnancy, have given birth late or have not breast-fed. Nuns, in fact, have one of the highest rates of breast cancer.
- Certain viral infections are associated with change in cells that may lead to cancer. This is true in a variety of conditions, including cancer of the cervix, in some blood cancers and in patients with the HIV virus. Stomach cancer is associated with chronic infection by the bacteria *Helicobacter pylori* (see page 371). These forms of cancer are potentially avoidable or preventable. Reducing the number of sexual partners a woman has, if her partner is circumcised or perhaps uses a condom, may all be associated with a lower risk of cervical cancer. Eradication of the *Helicobacter* germ associated with peptic ulcers may lead to a lower risk of stomach cancer.

- Environmental pollution probably plays a relatively small part, except in certain situations where there may be high exposure to a variety of industrial chemicals in either air or water.
- Radiation is a factor. In certain parts of the world, and even in certain parts of the UK, there are significant levels of natural radiation. This powerful invisible force can disrupt the structure of cells, precipitating cancerous change. Radioactive gas, radon, is found in trace amounts throughout the UK, but at high levels, in Devon and Cornwall particularly. There is a small contribution from the radiation involved in medical procedures. Local areas of pollution from nuclear reactors and more widespread radiation exposure following the Chernobyl disaster will continue to be the subject of medical research, though of only small relevance to the majority of us.
- A variety of chemicals used in industry are connected with increased cancer risks, and these include rubber, industrial dyes, asbestos, glues and varnishes, cadmium, nickel, and some rare metals.
- Scientists now believe that repeated exposure to xenoestrogens is related to the increased risk of breast tumours in women, and this is borne out by many studies including an Israeli study. In Israel breast cancer fell sharply between 1976 and 1986. The dramatic fall in death from breast cancer was due to a ban in 1978 on the use of three organochlorine pesticides. The chemical structure of environmental oestrogens is strikingly different from both oestrogen found in the body and oestrogen found in plants. Xenoestrogens interact with the receptor sites within a cell, but they block normal hormone activity.
- Exposure to sunlight or ultra-violet light in white, especially fair-skinned, individuals is associated with an increased risk of melanoma and other skin cancers. Melanoma has become one of the commonest causes of cancerous death in young people in Australia and South Africa as well as in the UK. The recent increase in line with the desire for increased sun exposure has prompted campaigns such as 'Slip Slop Slap' (*Slip* on a T-shirt, *Slop* on high factor sun cream, *Slap* on a hat). Heavy sun exposure before puberty in children with red hair, seems to be a particularly unwise combination. In older people, other types of less malignant skin cancer, especially rodent ulcers, also develop. These are influenced by sunlight exposure, especially on the face and hands.
- Finally, and importantly, poor diet is a major causative factor. High intakes of fat, especially saturated fats, are associated with increased risks of breast cancer, as well as cancer of the colon, endometrium (lining of the womb), pancreas and prostate. Lack of fibre may also increase risk of colon cancer. Research conducted in many countries around the world, including Australia, Europe and the USA, shows quite clearly that a diet rich in fruit, vegetables, fibre, combined with

phytoestrogens, and low in saturated animal fats, offers us a great deal of protection against most forms of cancer. The amount we eat, and not being overweight may be important factors, especially with regard to breast cancer in women and testicular cancer in men. A healthy diet is certainly necessary for normal immune function. Several studies have shown that vegetarians have higher levels of immune system cells, which are capable of killing both tumour cells and viruses.

The role of diet

It has long been established that those consuming a diet rich in animal fats and low in fibre are more likely to develop cancer than those consuming a wholesome diet, rich in antioxidants. However, until relatively recently the medical profession has had their attention focused firmly on drugs to kill off cancer cells and possibly to boost the immune system. Whilst we have come to accept that we treat cancer, if and when we unfortunately become victims, some very exciting research has been taking place. Surprisingly, significant research looking at the role of phytoestrogens in the prevention of cancer has been conducted by highly respected scientists, in reputable research units, around the world. In fact, there is a vast amount of research material available, much of which until now has not been translated from 'medicaleze' into ordinary language for the public.

Research has confirmed that the plant lignan and the isoflavanoids are converted by bacteria in our intestines to hormone-like compounds, with weak oestrogenic and antioxidative activity. They have been shown to influence many key functions within the body including:

- sex hormone metabolism
- biological activity
- enzyme function
- production of protein
- growth factor action
- malignant cell proliferation
- cell differentiation
- and angiogenesis – the development of new blood vessels.

Very recent research is suggesting that the dramatic reduction in cancer, which has been observed following the regular consumption of phytoestrogens, may not be directly attributable to the foods themselves, but possibly to the chemical reactions that they bring about within the body.

There are literally hundreds of studies using phytoestrogens on animals, aimed at reducing the incidence of cancer; two-thirds of which show a dramatic reduction in both the occurrences of cancer, and also the tumour size in those who had established cancer. Over two hundred of these studies have looked at genistein, the soya isoflavone, as it seems to

be able to influence many of the fundamental aspects of the cancer process. For example, one of the common enzymes produced by the genes that cause cancer, the oncogenes, is known as protein tyrosine kinase. In 1987, it was discovered that the isoflavone, genistein, in the form of soy, was actually a naturally occurring tyrosine kinase inhibitor, which means that it is able to prevent the activation of the specific genes that cause cancer. This it seems is just one of the counter-productive enzymes involved in the cancer process that genistein is able to constrain. It is interesting to note that Oriental populations, that have low rates of breast and prostate cancer, consume between 20–80 mg of genistein per day, almost entirely derived from soya products. Conversely, daily intakes of soya products in western countries like Australia, the UK and the USA are almost negligible, between 1–3mg per day.

Another attribute of genistein, is that it seems to be able to inhibit the growth of blood vessels on which tumours depend for their supply of nutrients and oxygen. So as well as being a useful tool in the prevention of cancer, genistein may also have a part to play in treatment. In fact it has been suggested that genistein may become one of the first of a new class of anti-cancer drugs. We don't have to wait for this particular new science to evolve since we can get our daily genistein fix in the form of foods containing soya products.

In addition to the animal studies there have been over 30 population studies conducted around the world looking at a wide variety of cancers and the response to many types of soya foods. The overall consensus is that those consuming soya products on a regular basis, probably daily, are likely at least to halve their chances of getting cancer, compared to those who only eat soya products once or twice per week. The studies show that the soya foods used were able to inhibit the growth of many types of cancer, including breast, prostate, colon, rectum, skin, lung, stomach as well as leukaemia. The vast majority of the studies identified the protective effects of soya products and golden linseeds (flaxseed) in particular, and it is reassuring to note that there was no evidence reported in any study to suppose that these phytoestrogens could increase the incidence of cancer of any type. One Japanese study showed that a whole range of soya products, including soya milk, soya protein, miso and tofu, were also able to block the formation of nitrites, the chemical compounds that are carcinogenic.

Golden linseeds, or flaxseeds as they are sometimes known, are the richest source of lignans, and a regular intake has also been associated with low levels of cancer of the breast, the ovaries, uterus, prostate and the colon. Following consumption, they are readily excreted in the urine, which indicates that they are metabolised by the body. Researchers have shown that much higher levels of lignans are excreted by vegetarians than meat eaters, and in fact one study found that very low levels of lignans were excreted

by older women with breast cancer. Animal studies, in primates show that those that excrete high levels of lignans rarely experience breast cancer. As well as containing anti-cancer properties, lignans have been found to contain antifungal, antibacterial and antiviral properties.

So it seems that research of recent years on phytoestrogens has provided us with the key to lower our risk of cancer, therefore making the cure a less urgent issue for many of us. However, as well as consuming a daily serving of soya and regular amounts of other foods that contain phytoestrogen, which are outlined in Part Three – Eating for Health, it is important to ensure that other aspects of your diet and lifestyle are in order.

BREAST CANCER

Breast cancer has historically been the most common fatal cancer affecting women between the ages of 40–55, and in recent years it has almost reached epidemic proportions in western countries. In the USA for example, whereas in 1950 there was a one in 20 chance of women becoming breast cancer victims during their lifetime, today it has become a one in eight chance. This increase, makes it now the leading cause of death in women between the ages of 40–55 years of age, and approximately one quarter of the women diagnosed with breast cancer each year will die. In Australia in 1990, breast cancer was the most commonly diagnosed cancer apart from skin cancer. The highest breast cancer rates in the world are in North America, Northern Europe, Australia and New Zealand.

There are a number of contributory factors that have been shown been found to be associated with breast cancer:

- A high consumption of animal fat and low fibre diets, as found in many western countries. Although the additional animal fat in our diet increases our intake of oestrogen, it is unlikely that this factor alone could account for such a consistent increase in breast cancer statistics.
- The absence of pregnancy or pregnancies after the age of 35. The risk is reportedly less likely with increasing numbers of pregnancies and episodes of breast-feeding.
- Obesity, particularly in women after the menopause, as oestrogen is stored in the fat cells. Obesity is also reaching epidemic proportions. In the UK it is estimated that one in four people are overweight, one-third of the white adult population in the USA and Canada are obese, and according to a 1993 report, the direct cost of obesity in Australia in 1989–1990 was \$672 million. Even more frightening, is that children of obese parents are 70 per cent likely to be obese themselves.
- Early onset of menstruation, which in theory means more hormonal cycles, which mean more oestrogen production, increases the chances of cancer.

- A family history of cancer, especially in a close relative like a mother or sister. Many researchers have been concentrating their efforts on a search for a 'breast cancer gene', but this is not likely to apply to more than 5 per cent of victims.
- Fibrocystic disease of the breast.
- Constipation, which may affect hormone metabolism and our excretion of oestrogen.
- The oral contraceptive pill and injectable contraceptives carry a small increase in risk after prolonged use.
- Hormone Replacement Therapy (HRT) appears to increase the chances of suffering breast cancer by approximately 35 per cent following long-term usage, over five or ten years.
- Lastly, and probably most importantly, exposure to xenoestrogens – the environmental oestrogens, see page 109.

It is thought that early life exposure to phytoestrogens may be critical for breast cancer prevention. Specifically, it is thought that genistein exposure prior to puberty may decrease risk of tumours in later life. There has been concern that soy isoflavones cannot yet be clearly stated as protective for breast cancer. This is mainly the result of laboratory work on rats using high levels of concentrated soya protein.

Recent research presented by Cline et al (3rd International Symposium on the Role of Soy in Preventing and Treating Chronic Disease in Washington DC, 1999) looking at the effects of dietary soy on the uterus and breast of female Macaque monkeys, concluded that soy phytoestrogens do not stimulate the breast or uterine tissue. These monkeys are an accepted model for human female reproductive studies. These post-menopausal monkeys were fed either 148 mg of soy phytoestrogens per day for three years, or given oestrogen (1.25mg per day). Cell proliferation was induced in monkeys given oestrogen but not soy phytoestrogens.

Phytoestrogens – some better news

Phytoestrogens are able to compete successfully for the oestrogen receptor sites within the body, over and above both normal oestrogen and xenoestrogen. It seems that they raise levels of sex hormone binding globulin, and are thereby able to block out the excess levels of oestrogen which are thought to precipitate breast cancer. Many published studies show encouraging results. One study in Singapore compared 200 women who suffered breast cancer with 420 who did not. It emerged that those with the lowest risk of breast cancer consumed about 55 grams of foods containing soya per day, and concluded that those with the highest soya consumption had less than half the risk of breast cancer of those who rarely consumed soya products. In another study, 142,857 Japanese

women were studied for 17 years, and it emerged that those regularly consuming soybean paste soup had a much lower risk of experiencing breast cancer. Linseeds (flaxseed) have also been shown to reduce the incidence of breast cancer.

Current research shows that phytoestrogens are unlikely to be sufficient to inhibit the growth of mature, established breast cancer cells, but it seems they will regulate the proliferation of the cancer cells, thereby having a chemopreventive effect. Research is in its early stages, and much still remains to be learned about the influence of specific dietary constituents and cancer risk, but it is clear that our diet does have a significant impact in cancer prevention and control.

Carla's story

Carla was a 32-year-old mother of three from Bradford, who had a history of breast cancer. She approached the WNAS for help, as she was not a candidate for HRT.

I lost both my mother and my grandmother at the age of 56 from breast cancer. My own breast cancer was diagnosed at the beginning of 1994 for which I underwent a mastectomy. Following my chemotherapy I was put on a drug called Tamoxifen designed to prevent new cancerous cells, but unfortunately one of the side effects I experienced were hot flushes. In June 1995 I was advised to have a radical hysterectomy, which involved removing my ovaries, to lower my chances of contracting other female cancers.

I was relieved to have lowered my risk of cancer, but after the operation felt very tired, with little vitality, and noticed that my hot flushes had become severe and debilitating. I knew that I was not able to take HRT because of the cancer, and therefore set about finding an alternative. I found the first edition of Cruising Through the Menopause in my local bookshop, and decided to contact the Advisory Service for some personalised help.

I had my first telephone consultation at the beginning of April 1996, and within six weeks of following the recommendations my flushes had greatly reduced and I was feeling more energetic. Unfortunately, in June of 1996 I discovered another lump in my remaining breast and, after careful thought, decided to have a second mastectomy.

I got through the operation with lots of family support and by August I was feeling brilliant. I was pleased to report to the WNAS that I had no remaining symptoms, and that I felt I was in control of my health. My husband is amazed and has even said I'm like a new woman. I am so pleased to be able to assume the role of a caring mum to three small children. I feel 100 per cent well – it's brilliant.'

Phytoestrogens and other hormonally-related cancer

The womb

The endometrium, which is the lining of the womb, is particularly sensitive to oestrogens, and some of the risk factors for the development of cancer in this area are similar to those for breast cancer.

The cervix

Cancer of the neck of the womb is closely connected with sexual activity, and is more likely to occur in women who had many sexual partners at a young age. There is now clear evidence that cervical cancer is associated with certain viruses that cause change in the cells covering the neck of the womb. The more prosperous individuals within a community, who probably have a better nutrient intake, seem to be less at risk of developing this type of cancer. Disturbed levels of nutrients have been detected in women with cervical cancer, but it not clear whether supplements of these would have any genuine protective effect at this stage. Irregular vaginal bleeding or bleeding after intercourse are two of the warning signs.

The ovary

Ovarian cancer is one of the most difficult cancers to detect and treat, which explains why it claims more lives than many of the other types of cancer. Again, some of the risk factors are similar to those of breast cancer, including the family history factor. Women with a family history of ovarian cancer should be screened regularly. Early detection, using ultrasound and blood tests, and subsequent removal of the ovaries would prove to be lifesaving measures.

The general consensus from the wealth of studies that have been published on hormonally related cancer, indicate that in order to drastically reduce our chances of cancer we should be eating one serving of soya based food per day, regular amounts of organic linseed, and as many other fruits, nuts, seeds, beans and berries as we can manage. Refer to the Sample phytoestrogen-rich menu on page 480.

Colon and rectum

Cancer of the large bowel may also run in families, especially if the cancer develops at a young age, usually under the age of 45, and can also be associated with cancer of the womb, ovary or bladder. Whilst colon cancer is more common in women, cancer of the rectum claims more male victims. Those consuming a diet rich in meat and animal fat, and low in fibre and starch are more at risk. Low intakes of the mineral

calcium are also thought to be associated with a higher risk of this type of cancer, or at least more rapid growth. Early detection by colonoscopy examination, X-rays and testing the stool for the presence of minute quantities of blood are all important, and blood tests for detecting early tumours are currently being developed.

Once again, the research using phytoestrogens to prevent bowel cancer are showing very positive results. A Japanese study showed that eating soybeans or tofu cut the risk of rectal cancer by more than 80 per cent. Those who ate soya products had one-seventh of the risk compared to those who did not. Soya products also lowered colon cancer risk by about 40 per cent. In this particular study just one or two servings of soya per week gave considerable protection. Researchers in the USA have found that those who eat tofu regularly cut their risk of colon cancer by half. The Chinese confirmed these findings as they discovered that those who did not consume soya products on a regular basis were three times more likely to develop rectal cancer than the soya consumers.

Several studies have found that a high level of urinary lignan excretion, found in those eating a phytoestrogen rich diet, correlates with lower levels of colon cancer.

Recent research presented in 1999 at the Third International Symposium on the Role of Soy in Preventing and Treating Chronic Disease, in Washington DC, concluded that subjects at risk of colon cancer who ate 39 gms of soy protein per day for one year had less cell proliferation in their colon and therefore a reduced colon cancer risk compared with those who consumed 39 gms per day of casein (cow's milk protein). It concluded that eating soy may delay the onset of colon cancer and lead to more cancer free years. Even if tumours develop while eating soy there are likely to be fewer tumours and they will grow more slowly.

STOMACH CANCER

One-third of Japanese Hawaiians consuming tofu were able to reduce their risk of contracting stomach cancer compared to non-consumers. In China, it was found that those who regularly consume soymilk had less than half the risk of developing cancer when compared to non-soymilk drinkers. In another Chinese study there was a 40 per cent reduction in stomach cancer statistics in those consuming soya products on a regular basis. However, it should be pointed out that negative results have been produced when using miso. The probable reason for this is that miso, unlike many other soya products, is fermented and is by nature rich in sodium (salt). As sodium is thought to be risk factor for stomach cancer and possibly for other cancers as well, this may well explain the increased risks with miso. On the positive side, it is thought that miso may protect

us from radiation damage. Studies have shown that medical professionals tending atomic bomb victims did not develop tumours themselves because they regularly drank miso soup. Animal studies show that miso increases the radioactive discharge from the body.

PROSTATE CANCER

Until recently, prostate problems, particularly prostate cancer were, like bowel problems, not a subject on the social agenda. It took the deaths of some men prominent in the public eye, like Frank Zappa, Telly Savalas and Francois Mitterand, to increase public awareness about this potentially fatal condition. Nearly half of all men over the age of 50 develop an enlarged prostate, known as benign prostate hypertrophy, and prostate cancer kills four times as many men as cervical cancer kills women. The prostate gland is a reproductive gland that is wrapped around the urethra between the bladder and the penis. It is about the size and shape of a walnut, and is responsible for secreting the fluid that combines with sperm to form semen. Prostate symptoms include the frequent need to urinate, especially at night, an inability to empty the bladder fully, sometimes leading to infection, and pain with an erection or orgasm. Denis Norden, the TV presenter is reported to have said following his prostate operation, 'when I was 20 my heart ruled my head. When I was 40 my head ruled my heart. But when I was 60 my bladder ruled both!'

Apart from skin cancer, cancer of the prostate is the most common form of cancer in men over the age of 55. If caught in time it is treatable, and as some of the tumours are slow growing, the medical profession often carefully watch the progression rather than offering radical treatment. Screening tests are available in the form of a physical examination via the rectum, which can detect whether the prostate is enlarged, infected or indeed whether there are any signs of a tumour. There are also prostate-specialist antigen blood tests available, and ultrasound is often used before a diagnosis can be made.

Whilst Japanese men have the same prostate cancer rate as men in the west, they have the lowest death rate in the world from this particular cancer. As with other cancers, the growth of prostate cancer may be stimulated by hormones such as oestrogen and testosterone. Although oestrogen works in different ways in men, it can be equally destructive. Oestrogen, being a precursor to androgens, the male hormones, can trigger the production of testosterone, and studies have shown that men with prostate cancer seem to have higher levels of testosterone than their cancer-free counterparts. Once again phytoestrogens, particularly soya-based foods, seem to help moderate hormone levels, thus slowing down

the growth at which the tumour grows. Test-tube studies on genistein have managed to show growth of prostate tumour cells being inhibited.

Professor Hermann Adlercreutz reported recently that in laboratory studies genistein and lignans, the fibre layers of grain, berries, seeds (linseeds), some vegetables and fruits, all inhibit prostate cancer cells to varying degrees. Studies on mice implanted with human prostate cancer cells who were fed rye bran, heated rye bran, as well as soy, had slower onset of palpable prostate cancer tumours. Furthermore, the tumour volume was smaller. Rye bran also caused increased cancer cell death. He concluded that isoflavone and lignan containing foods may be protective with regard to prostate cancer.

Since prostate disease is considered to be sex hormone dependent, an Australian study at Deakin University looked at the male sex hormone responses in men after eating either a tofu, lean meat or fatty meat meal. They found that sex hormone binding globulin (SHBG) significantly increased testosterone levels after both the tofu and lean meat meal, but not in the fatty meal. An increase in SHBG is considered positive as this helps 'mop up' excess testosterone which at higher levels is a risk factor for prostate cancer. Lower levels of sex hormone concentrations like testosterone may provide long term benefits in reducing the risk of a disease like prostate cancer that appears to be sex hormone dependent.

See also: Prostate cancer, page 406.

LUNG CANCER

Lung cancer is often precipitated by cigarette smoke, active or passive, and to reduce your chances of becoming a victim it is advisable to live and work in a smoke-free environment. However, there is evidence to support the fact that once again certain phytoestrogens may help to protect us. A study of over 200 Chinese women in Hong Kong, found that by consuming soya products, including tofu, on a daily basis they were able to cut the risk of lung cancer by half, compared to women consuming soya products less than three times per month. Another Chinese study, this time on almost 1,500 men, found that the risk of lung cancer was reduced by 50 per cent with frequent tofu consumption.

SKIN CANCER

Although research in this important area is young, animal studies have been done to show that soybeans were able to delay the onset of skin tumours by 100 days and topically applied genistein reduced the number of skin cancers in mice.

What your doctor can do

- Take your symptoms seriously. Because of the many different types of cancer, and the different ways in which it may present, early diagnosis is not always easy. This must however still remain an important goal as only early diagnosis will lead to a better outcome.
- Investigate for cancer, which includes:
 - a thorough physical examination
 - blood tests
 - x-rays or an ultrasound examination of the pelvis, liver or abdomen
 - specialist investigations, especially CT (Computerised Tomography) and MRI (Magnetic Resonance Imaging) scans. These are specialised X-rays which allow visualisation of internal abdominal organs and the nervous system. Specialist blood tests are also being evolved to allow the early detection of what are termed 'tumour markers'. This will tell us there is a cancer somewhere but won't tell us where it is.
 - Finally, a biopsy or a small sample of the suspected cancerous tissue is taken and usually allows identification of the cancer type by examination under the microscope. This then leads to decisions about treatment.
- Treat the cancer. This essentially involves the use of chemotherapy, radiotherapy and surgery. These treatments require special medical skill and indeed many types of cancer are now referred to specialist centres. Further treatment for the control of individual symptoms such as pain with painkillers, removing fluid that may have built up in the abdomen, and nutritional support as well as psychological support should all be part of standard cancer care. Greater awareness is now mindful of the broader needs of the cancer patient and this may involve a number of self-help approaches.

What you can do

Gone are the days when the patient was just simply a passive recipient of therapy. There is much that you can do.

- Learn about your type of cancer and how it affects your body. This you can do either via your own specialist or by contacting one of a number of support organisations, especially BACUP (see Useful addresses, page 512).
- Make adjustments to your diet. This will depend upon the type of cancer, the type of treatment you are receiving, and whether you are likely to have developed nutritional deficiencies. You may well need further advice and support from your doctor or the dietician attached to the hospital that is treating you. Some of the likely dietary changes that may be worthwhile are as follows:

- Consume a diet rich in phytoestrogens, with a daily serving of soya based food and as many other foods from the Phytoestrogen-rich menu on page 480 that you can happily fit into your diet.
- Eat organically grown food when possible.
- Limit your intake of fat, especially that of saturated animal fat, and use foods containing Omega-3 and Omega-6 EFAs, see page 489 for the listings.
- Do not smoke, minimise your exposure to cigarette smoke, and ensure you have a high fluid water intake.
- Minimise your consumption of pickled and smoked foods.
- Eat plenty of foods containing antioxidants, like fruits, vegetables and salad, particularly yellow vegetables like carrots and peppers, and green leafy vegetables. Aim to have at least five servings of fruit, vegetables and salad daily.
- A high-protein, high-calorie, easy-to-digest diet is suitable for those who have experienced significant weight loss and have difficulty maintaining calorie intake. Supplemental feeds, high in protein, based on milk or soya, may be required. For those with swallowing or digestive difficulties, especially in older patients, putting main meals through a liquidiser may be useful. Particularly good foods in this situation include all dairy products, eggs, meat, stewed fruit, home-made ice cream and nuts and seeds if these latter two can be digested.
- Reduce or, even better, avoid salt in the form of table salt and heavily processed food. Salt actually blocks oxygen from entering the cells, which is perfect for cancerous cells because we know that they thrive in the absence of oxygen.
- Vegetarian and vegan diet regimes are recommended by some complementary therapists, and in theory they could be effective. Recently there have been one or two reports of benefit after many years of unsubstantiated or poorly substantiated claims. At present however, they cannot be broadly recommended for the general patient with cancer. In theory a high fruit and vegetable diet with a limited amount of protein might retard the growth of some cancers. However, in a patient who is seriously ill and rapidly losing weight, this could be a disastrous choice. The skill required to match these sorts of diets to a patient's individual needs will be as great as that required to determine effective chemotherapeutic regimes. This is a situation where expert medical and dietetic research needs to address some of the ideas of complementary therapists.
- Take nutritional supplements. This is as contentious as recommending a diet for cancer. Those who have lost weight because of their cancer, who have digestive difficulties or have recently completed a course of radiotherapy or chemotherapy, are likely to have a number of nutritional deficiencies that need correcting with a better diet and nutritional supplements. Thus there is a dilemma.

- Vitamin E and beta carotene capsules applied topically can alleviate mouth ulcers which are often caused by chemotherapy.
- Vitamin E has been shown to reduce hair loss associated with chemotherapy.
- Selenium reduces toxicity of chemotherapy drugs without reducing their anti-tumour ability.
- A good intake of EFAs, particularly those from the Omega-3 series are necessary for strengthening cell membranes, therefore protecting them from free radical damage.
- Avoid toiletries, particularly deodorants containing aluminium and parabens, synthetic chemicals which have been shown to bind with DNA and cause mutation.

Increased research is needed into the use of nutritional therapy as adjuncts to chemotherapy and radiotherapy, on the grounds that nutritional supplements can greatly reduce some of the worst side-effects of these treatments.

A reasonable mid-way course might be only to give nutritional supplements to those who have, or are likely to have, deficiencies, and not to give them to relatively well patients who are receiving anti-cancer treatments, especially if they are likely to have a high degree of success as in Hodgkin's disease, leukaemia and others. Often chemotherapy regimes are pulsed, that is, given every few days or at weekly or monthly intervals. If nutritional supplements need to be taken, then they could be stopped while the chemotherapy or radiotherapy is actually being given.

At the end of treatment there may be need for 'a nutritional rescue programme'. Equally some patients may be too unwell to tolerate the full course of radiotherapy or chemotherapy, and nutritional support before or during therapy may be necessary. Again this situation may require expert advice.

A further situation is in patients who have been 'cured' of a cancer. This now occurs with a variety of childhood cancers and happens more and more in the early treatment of adult cancers such as stomach, colon and breast. There is evidence that such patients, having survived one cancer, may be more at risk of a second type of cancer, either because of a cancer predisposition or because some of the anti-cancer drugs themselves may increase the risk of developing cancer in later life. For them eating The Very Nutritious Diet (see page 437) and perhaps taking supplements of strong multi-vitamins containing vitamins C, E, beta-carotene and selenium, would be advisable, but no firm recommendation can be made.

- Vitamin A as retinol and beta-carotene – the vegetable form of vitamin A – has been put forward as being cancer protective. Diets rich in beta-carotene derived from bread and red, green and yellow fruits and

vegetables are associated with reducing the risk of cancer. The protective agent may not be just beta-carotene but may be other agents such as vitamin C, vitamin E and selenium. This group is known as the antioxidants because they may protect tissues from noxious chemicals which may 'oxidise' them, reducing damage and cancerous change. High dietary intakes of calcium may well be associated with a reduced risk of cancer of the large bowel.

- Maintain outside interests. There is increasing evidence that those who have a positive attitude, are socially active and continue a normal life, do better with their cancer. We have personally seen this with a number of patients. This does not just involve diet, supplements and exercise, but making the most of your time on a number of fronts. This may mean spending more time with your family, revitalising old interests and hobbies, beginning evening classes, or taking up outdoor activities such as walking or gardening. Just think back over the last years of your life and try and recall those things that you have enjoyed or have made you feel good. These are the sorts of things that you should concentrate on. Think also of the sorts of things that you really wanted to do but never did. Perhaps some of these are suitable for you to take up now. Pleasure obtained from personal achievement is good medicine.
 - Take regular exercise and make time for relaxation.
 - Keep the stress in your life to a minimum.
 - Drink filtered or bottled water rather than chlorinated water.
 - Do not use pesticides or herbicides.
 - Minimise your use of Hormone Replacement Therapy and the oral contraceptive pill.
 - Use alternatives to plastic containers for storing food, and steer away from plastic products where possible as they release chlorinated toxins into the environment.
 - Purchase non-bleached paper, including writing paper, toilet tissue, coffee filters etc to avoid unacceptable dioxin exposure.
 - Use tampons and towels made without chlorine. Organic sanitary towels, tampons and cotton wool are becoming increasingly available in health-food stores and supermarkets.
 - Avoid aerosols and anti-perspirants – use natural underarm deodorants instead, including deodorant crystals and those without aluminium or synthetic chemicals such as parabens.
 - Use hydrogen peroxide as an alternative to chlorine bleach for household chores, for it breaks down to water and oxygen.

Complementary therapies

A number of these may appeal to you and are well worth considering.

Acupuncture may be helpful for pain relief and as a general tonic. Herbal medicine may help with a variety of persistent symptoms, massage

and aromatherapy are a good way of relaxing, and homeopathy has a variety of specific anti-cancer remedies. These are prescribable and can be administered by qualified medical homeopaths. Again, there is some evidence that they may be helpful, but no large-scale recommendations can be made. You should consult a medically qualified homeopath specialising in cancer treatment.

The entire approach to cancer treatment should be person centred. Perhaps the most important factors in survival with cancer and a return to good health are the intangible factors residing with the individual – self-motivation, empowerment, and the decision to change oneself and take control. Disinterest and misery in following an unwanted dietary regime is not a desired goal, and without the enthusiastic co-operation of the person with cancer, there seems little justification in enforcing rules.

A word of warning on some complementary therapies

Beware of excessive or false claims. These are easily made, not necessarily with intent to deceive or defraud, but out of the therapist's desire to help. The fact that one or two patients have done well following a particular line does not mean that all will. In the end it is only good-quality research of the type performed by medical practitioners that will prove the case for or against a particular line of therapy. Fortunately, a number of conventional physicians are now looking seriously at the benefits of complementary medicine in cancer care.

Abigail's story

Abigail was a 41-year-old teacher who was experiencing menopausal symptoms following chemotherapy.

'I was diagnosed as having Hodgkinson's Lymphoma ten years ago and had both radio- and chemotherapy. I have been clear ever since but I really wanted to avoid Hormone Replacement Therapy because of my history. When my menopausal symptoms began I was aware I had to sort out an alternative. I was having 25 flushes a day at least and so I went off in search of a solution.

I managed to find the book Cruising Through the Menopause at my local bookshop which I was delighted to discover outlined there was a scientifically based alternative. I made an appointment to visit the WNAS Clinic and was given a tailor-made programme to follow avoiding certain grains, alcohol, tea and coffee, and asked to concentrate on foods that contain naturally occurring oestrogens, oily fish and plenty of fresh fruit, salad and vegetables. Apart from my menopausal symptoms, I was very tired for much of the time and constipated. I had been living in the Middle East where my husband was working but felt that the hot flushes were so bad there

that I came back to the UK. I followed the WNAS programme avidly and within just a few weeks the night sweats had stopped, the flushes were greatly reduced, and my constipation had gone completely. I found the exercise difficult initially as I felt so tired but persisted with my YMCA video and my Tai Chi which I feel helped enormously.

I have been following the programme for three months now and all my symptoms have calmed down. I feel so much better and I am confident that I can manage quite happily without Hormone Replacement Therapy. I feel years younger than when I began the programme. I have been able to re-join my husband in the Middle East which was formerly too hot for me and I am really looking forward to the future.'

See also: Recommended reading, References.

Candida and Thrush

Candida is one of several types of yeast-like organisms that cause infections in humans. There are a number of different varieties of candida, the commonest being *candida albicans* which can cause infection in the vagina, mouth and skin. Infection with candida is commonly called 'thrush'. It is also the organism that plays a part in the development of nappy rash in infants. The organism grows best in warm, dark conditions and in the presence of sugar. Under these circumstances candida changes from small round dormant spores to a branching structure called a mycelium with the ability to invade and irritate tissues.

Candida is a very common organism that we have all had some contact with, and the majority of infections resolve themselves spontaneously. That said, some women experience repeated episodes of vaginal thrush, and there are usually a number of reasons for this (see opposite). In the last few years some doctors and complementary practitioners have put forward the idea that a number of health problems including chronic fatigue can be caused by infection with candida. The evidence for this is not strong.

What are the symptoms?

This depends on where the infection is. For women, vaginal thrush causes irritation and a thick, white, sticky discharge. This must be differentiated from the normal vaginal moisture that naturally increases at mid-cycle and is not associated with local irritation. Severe infections in women can cause swelling of the genital tissues and a rash can spread out into the groin.

In men, soreness or redness of the penis, sometimes with a sticky white discharge, may develop. However, many men and women may carry small amounts of candida in the vagina or on the penis without any ill effects.

Candida is often kept in check by the presence of healthy non-disease-causing bacteria in both the vagina and the bowel. Surveys reveal that about 20 per cent of the normal population carry candida in the digestive tract without it causing problems.

Thrush in the mouth, which mainly affects the ill, elderly or those using steroid inhalers for asthma, produces a very sore mouth and a white sticky deposit on the tongue and elsewhere. A slightly furred tongue without soreness is unlikely to be due to candida.

The skin can be infected, too, and this is usually in warm moist areas such as the groin, armpits or under the breasts. A red, sore rash with spreading little red spots or 'satellites' at the edge of the rash is the usual appearance.

Who gets it?

In short, we all do once or twice, but for those women who get repeated attacks of vaginal thrush there are often one or more predisposing factors. They include:

- *Being pregnant* Hormonal changes encourage thrush.
- *The combined oral contraceptive pill* Those with a high oestrogen content may increase the risk; this is rarely a problem with newer low-dose ones.
- *Steroid drugs* These, whether taken as tablets or as an inhaler, can encourage the growth of candida.
- *Antibiotics* By killing off the 'good' bacteria, antibiotics make it easier for candida to obtain a foothold.
- *Diabetes* The increased levels of sugar in diabetes make it easy for the thrush organism to grow.
- *Anaemia and lack of iron* These can reduce resistance to infection and lead to cracking at the corners of the mouth, making it easy for the infection to get started – one to think of in women with heavy periods.
- *Other nutritional deficiencies* Lack of zinc, vitamin B and even vitamin A have all been documented as reducing resistance to infection and leading to thrush.
- *A poor diet* A diet high in sugar and low in protein can probably make matters worse, though there is no direct proof of this.
- *Reduced resistance to infection* Anything that reduces your resistance to infection from stress, genetic and blood conditions to cancer, can be significant.
- *Hormonal disturbances* Thyroid, other hormone problems and low blood calcium can all (rarely) lead to episodes of thrush.

What causes it?

As you can imagine, anyone with one or more of the above predisposing factors is likely to experience thrush at some time. A common situation involves a sexually active woman, possibly on the pill, who may have a mild iron deficiency, and for whom treatment using over-the-counter creams has been only partially successful. Research suggests that, in recurrent cases, candida organisms on the skin or possibly from the bowel provide a source of re-infection. Sometimes this comes from the male partner, and intercourse or use of a tampon may be factors in causing a break in the delicate tissues lining the vagina and allowing infection to develop.

Wearing trousers, tights, and nylon underwear may all promote the conditions that encourage the growth of candida. Local irritation can be aggravated by use of some chemicals found in many toiletries, bath products, soaps and shampoos so it may be necessary to avoid these. Occasionally it appears that some sufferers are actually allergic to or react strongly against candida itself. In these cases, even a minor degree of infection can result in severe symptoms.

There is also evidence that reactions to foods or yeast in the diet may cause a vaginal discharge. This might cause symptoms similar to thrush without candida being present, or the reaction may encourage the growth of candida already present. So, for some, a change to a healthier diet that excludes some foods can help symptoms of thrush.

What your doctor can do

Your doctor can do one or more of the following:

- Examine you and take a swab from the vagina to assess the type of infection.
- Prescribe an antifungal treatment as a cream, pessary or tablet by mouth.
- Perform some tests to see why you have thrush. A urine test for diabetes and a blood test for anaemia and iron deficiency would be the most common and useful.

There is a wide choice of different preparations available that your doctor may prescribe. They can be creams, pessaries or tablets and they all have similar success rates. The main choices are:

- Nystatin as cream or pessaries. Once the most popular treatment, now largely replaced by other preparations. It is safe for use in pregnancy. Nystatin can also be given by mouth but as it is not absorbed this is only useful in clearing candida from the bowel. It is very useful for helping clear thrush in the mouth.

- Clotrimazole (Canesten) available as a cream or pessary and often this first-line treatment can be used as a one- or three-day treatment with similar high success rates of over 90 per cent.
- Miconazole (Daktarin) and Econazole (Ecostatin and Gyno-Pevaryl) also available as pessary and cream.
- Fluconazole (Diflucan) is a powerful anti-candida drug which is active by mouth and is highly effective after one single dose of 150mg. It is very effective against *Candida albicans* but not other types of candida.
- Itraconazole (Sporanox) is another anti-fungal agent which comes in tablet form. Two 100mg tablets twice a day for one day only will usually clear thrush and it has the advantage of being effective against different types of candida, not just albicans.

The key point to remember is that all these treatments have a small failure rate and that if one treatment is not successful then another probably will be.

What you can do

Many women do not go to their doctor but get treatment themselves from the chemist using a number of over-the-counter preparations. This is acceptable if you are reasonably certain that you do not have any other infection, and provided that your symptoms clear within three or four days. If not, see your doctor or attend a local STD (Sexually Transmitted Disease) clinic. Such clinics are particularly well equipped to identify the type of infection and the best form of treatment. You do not need to be referred by your doctor but can simply 'drop in'.

It is probably useful for you to know that some 50 per cent of women who think that they have thrush may have a different type of infection, and that the success rate for most standard anti-fungal treatments is 90 per cent. Consequently there will always be a significant number of women whose 'thrush' did not clear with the first treatment they try. In cases like these there is no substitute for an internal examination, a swab to identify the type of infection(s), and tests in the laboratory to find which anti-fungal agent is the most effective.

In addition to infection itself, the irritation may be due to some degree of allergy to candida itself, to local irritation from toiletries or occasionally to food allergy. There is no easy way for the sufferer to determine which of these might apply to them without expert assessment, so the advice given below is relevant for all eventualities.

- Avoid wearing restrictive clothing such as trousers, tights and synthetic underwear. Choose natural fabrics such as cotton or silk.
- Shower rather than bath, and do not use perfumed soaps and other toiletries that might come into contact with your tail end. If you do have a bath, do not wash your hair at the same time.

- Dry yourself thoroughly after a bath or swimming.
- Do wash and change your underwear every day.
- When washing your clothes and underwear it may be preferable to use a non-biological washing liquid just in case traces of soap remain and contribute to the irritation.
- Use sanitary pads rather than tampons.
- Always wipe yourself from the front to the back so as to reduce the chance of infection from the bowel. If you are very sensitive, white unbleached toilet tissue may be a good idea.
- Your diet should be low in sugar or sucrose, which means not adding sugar to tea and coffee, avoiding sweets, cakes, biscuits, chocolates and non-low-calorie soft drinks. For some a diet low in foods that are rich in yeast can help. Yeasty foods include alcoholic beverages (except gin and vodka), vinegar, pickled foods, yeast extract such as Marmite and many stock cubes, most packaged savoury foods including convenience meals and soups, and bread and buns and anything made from baker's or brewer's yeast. Occasionally it may be necessary for the diet to be even more restricted than this, but fruit restriction is rarely needed.
- Supplements may also be necessary. Consider a yeast-free multi-vitamin if you have recurrent thrush. A supplement of zinc, 20 mg per day can help, as can a supplement of iron such as ferrous sulphate, 200 mg once or twice a day, especially if heavy periods or anaemia are or have been problems.
- Capsules containing preparations of the healthy bacteria *Lactobacillus acidophilus* and related species are available and might help clear thrush from the gut (but not the vagina). Eating live yoghurt might also be helpful, and applying plain live yoghurt to the vagina is possibly beneficial but would be no substitute for anti-fungal medication.
- Caprylic acid is a naturally occurring fatty acid which has been reported to be an effective anti-fungal compound in the treatment of candida.
- Berberine containing plants, including goldenseal have shown natural antibiotic activity against bacteria, and fungi including candida.
- Grapefruit seed extract is another natural agent possessing antibiotic and anti-fungal properties.
- It is important to address digestive abnormalities when treating candida, and the first point of action is to improve digestive secretions. Hydrochloric acid (secreted by the parietal cells in the lining of the stomach), pancreatic enzymes (that ensure efficient digestion of proteins and carbohydrates) and bile (secreted by the gall bladder) all inhibit the overgrowth of candida and prevent its penetration into the lining of the small of intestine. Specific supplements of hydrochloric acid and digestive enzymes can be taken in conjunction with an anti-candida diet, but advice should be sought from a professional nutritionist.
- Garlic has demonstrated significant antifungal activity.
- Boosting the immune system by taking zinc, vitamin C and the herb echinacea can help with candida.

Sally's story

Sally was a 43-year-old headmistress who also had two young children of her own. She had been diagnosed as having thrush in her oesophagus, which was causing her great pain in the chest, particularly on waking.

'I had continued digestive problems which had become progressively worse. My doctor had sent me for investigations. I had an endoscopy, where a telescope is passed into the stomach, and a gall bladder scan, which were clear except for the thrush that was found in my gullet. My worst problem was the extreme pain I experienced on waking each day, and the indigestion. I also had an itchy bottom, so I presumed the thrush went right through my gut. Premenstrually I felt angry and clumsy and had experienced very sore breasts.

My job had become very stressful, I couldn't get on top of it somehow. To make matters worse I had developed panic attacks which I thought would subside during the school holidays, but they didn't. My libido had also disappeared and sexual intercourse had become painful as my muscles seemed so tight. A friend had recommended I consult a cranial osteopath for my back problem, and as luck would have it he referred me to the WNAS for help with my other problems.

I was quite sceptical about diet being the solution to what seemed to be extreme symptoms. I was so desperate that I was willing to try anything, so I went along for an initial consultation, which was very probing. I came away with a programme to start on which involved following an exclusion diet, particularly wheat, foods that contain yeast, caffeine and alcohol, plus I was asked to exercise and take some nutritional supplements.

At my second consultation, which was six weeks later, I was able to report that the pain on waking was only minor and had only occurred once in the last month. My itchy tail had cleared up, my period arrived unannounced with no symptoms or bloating and I felt that I was on the right track. I continued to make progress on all fronts, until Christmas. I was feeling so much better that I went for the dried fruit, chocolate, orange juice and wine. The symptoms flared up and it took a couple of weeks to calm down again, but it really brought home to me how sensitive my body was to these foods and drinks.

I have taken up jogging again, which I used to love, and I feel wonderful. All my gut symptoms have disappeared, I no longer feel like I have thrush, my PMS has gone and I am coping really well with situations at work and at home. We have been juggling with my diet for the last six months, and I have gradually been able to add things back without seeing a return of symptoms. I feel very

confident that I can manage my health myself now with my new knowledge, and be there for all those who depend upon me.'

See also: The yeast-free diet, The very nutritious diet, References.

Carpal Tunnel Syndrome

This is a common condition where there is pressure on the nerves in the wrist, causing numbness and tingling in the hands, and typically affects the dominant hand. Symptoms are worse at night, or on waking in the morning, and the sufferer may have to get out of bed and shake their hands to achieve relief. The pain may also travel back up the arm.

What causes it?

The common causes include:

- fluid retention
- underactive thyroid
- in pregnancy, hormonal changes
- in obesity, additional strain on the joints
- arthritis of the wrist, particularly rheumatoid arthritis
- over-use during sports, such as tennis or squash.

The nerves that carry signals from the brain to the hand pass through a tunnel constructed by the carpals (wrist bones) on the way to the fingers. Sometimes when there is excess fluid in the area, or a change in the shape of the joints occurs, as seen in arthritis, then additional pressure may be placed on the nerves running through the tunnel, causing pins and needles, and numbness in the fingers and the arms. When the body is warm the blood vessels swell a little, which accounts for the fact that carpal tunnel syndrome is often worse during the night.

What your doctor can do

- Give injections of steroids at the wrist to reduce swelling.
- Prescribe splints to be worn at night – these can be surprisingly effective.
- Diuretics are sometimes recommended.
- If all else fails, recommend an operation to relieve the pressure on the nerves.

What you can do

- Lose weight if you need to.
- Follow a low-salt diet to reduce fluid retention (see page 449).

- Don't drink alcohol.
- Take supplements of vitamin B complex and B6. Several studies have shown that relatively high doses of vitamin B6 (100 mg daily) may help relieve symptoms. Not all studies have been positive. This is best taken as B complex (50–100mgs x 1 daily) for 3 months.
- Visit your osteopath for an assessment.
- As a temporary measure, raise your arms above your head at night, to allow the fluid to drain away from the carpal tunnel.
- Use ice packs on the wrists to reduce the heat, and subsequently the swelling.

The numbness and tingling very often disappear of their own accord after pregnancy, so it is unlikely that you will have to take any further action after the baby has been born.

Complementary therapies

Acupuncture is well worth a try, as are homeopathic remedies, but remember to follow the low-salt diet as well. Cranial osteopathy probably has more to offer than any other complementary therapy for this condition.

See also: Fluid retention, Obesity, Thyroid disease, plus References.

Cerebrovascular Disease

Cerebrovascular disease is a furring up and sometimes blockage of, or bleeding from, the major blood vessels that supply the brain. Commonly this causes what is termed a stroke or cerebrovascular accident where there is a sudden development of weakness, loss of sensation, loss of balance, vision or consciousness.

Who gets it?

The same people who are predisposed to ischaemic heart disease and peripheral vascular disease. The main risk factors seen in practice are:

- very high blood pressure 200/110 or higher
- excess alcohol consumption 28 units per week or greater
- obesity
- smoking.

If all four are present then it is simply a matter of time. Other important risk factors are.

- a family history of strokes.
- the presence of any heart abnormality that may lead to a blood clot forming in the heart chambers which can then break off and travel to the brain.
- a wide variety of blood-clotting problems and other rare conditions.
- Rarely, but worthy of mention – migraine headaches. Occasionally if these are very severe they may result in a small stroke with residual numbness or tingling in a limb as a consequence. The risk of this is increased for a woman if she is on the oral contraceptive pill and is a smoker. One suspected event like this means that oral contraceptives are to be avoided for ever more.
- Several recent studies have confirmed that elevated levels of the toxic amino acid homocysteine is a risk factor for stroke. *See* Ischaemic Heart Disease (page 277) for further information.

Prevention is the key, as damage to the nervous system from a stroke often leads to a degree of permanent disability. Large strokes and repeated small ones are frequently fatal. Warnings, however, do occur. Small strokes called transient ischaemic attacks (TIAs) commonly precede an impending major cerebrovascular accident. Warning symptoms include symptoms indicating a loss of neurological function which lasts for several minutes or hours and is followed by full or nearly full recovery. These warning episodes include loss of vision, loss of speech, weakness in a limb, loss of feeling in one side of the face, in a hand or a limb, transitory mental confusion or other unusual transitory feelings, or disturbed sensations. Combinations of these may occur often with a headache.

What your doctor can do

- Examine you and quickly assess the main risk factors. The blood pressure, the health of the heart, the presence of diabetes can all be checked quickly.
- Prescribe a daily dose of aspirin. This simple drug at a dose of up to 300 mg per day significantly reduces the risk of these warning episodes developing into a stroke.
- Treat any high blood pressure. This is probably the next priority.
- Assess the likelihood of a major narrowing of the carotid artery – the main artery in the neck. Listening with a stethoscope to the neck gives an idea of this possibility. Further specialist referral may lead to defurring of the artery by operation – worth it for severely narrowed arteries.
- Consider other treatments and assessments. Many of these, which are needed for young patients, those with a strong family history of strokes or high risk predisposing blood disorders, will mean specialist referral.
- For those who have had a stroke, hospital treatment is the rule for anyone other than the very elderly. Specialised x-rays help decide if the stroke is

due to a bleed, the formation of a clot or an embolism – a blood clot from a distant site, usually the heart – which has travelled to the brain.

What you can do

- See your doctor at the first sign of trouble.
- Do as he or she says and take any recommended medicines.
- Change your diet. Reducing weight, cholesterol and blood pressure by dietary change is very important.
- High intakes of fresh fruit has been known for years to be associated with a lower risk, and vegetables are protective too. Visit your greengrocer on the way home from the doctor and before you see your solicitor. Follow The Very Nutritious Diet on page 437 for a healthy dietary regime.
- Drink alcohol only very moderately.
- Do not smoke.
- Take some supplements. In theory there should be a substantial role for some supplements but large trials have yet to be performed. Poor dietary intakes of vitamin C, a low blood level of retinol (vitamin A) are risk factors for having a stroke or making a poor recovery from one. A reasonable suggestion might be a stronger multivitamin containing 200 milligrams of vitamin C and possibly vitamin E. Other supplements of fish oils, magnesium and vitamin B might also be worth considering on an individual basis.
- Take supplements of folic acid, B12 and B6 if the levels of the artery damaging amino acid homocysteine is elevated. Folic acid appears to be the most important vitamin to supplement with in order to normalise homocysteine levels.

Complementary therapies

One exciting development has occurred in the field of acupuncture. A London-based trial involving conventional doctors and traditional acupuncturists has apparently shown, at least initially, an improvement in the degree of recovery after a stroke in those patients who have received acupuncture. The full report will undoubtedly merit much study and attention. If this proves to be reliable then a long overdue role for the acupuncturist in the district hospital will come into being.

Coeliac Disease

Coeliac disease is a condition where there is marked sensitivity to a protein found in wheat and other grains. As a result there is damage to the lining of the small bowel, resulting in difficulty in absorption of a number of essential nutrients. There may also be a wide variety of other symptoms seemingly unrelated to the digestive system.

What are the symptoms?

Typical features of coeliac disease are weight loss, muscle wasting, diarrhoea, abdominal bloating, fatigue and anaemia. Other not infrequent problems include poor growth in children, delayed puberty, mouth ulcers, fatigue without other features, absent periods, infertility in the male or female and, rarely, heart or arthritic problems.

Under the microscope the lining of the small bowel is made up of tiny finger-like projections called villi. These become shrunken and finally disappear, with malabsorption resulting. The whole process takes many months, even years, and equally recovery on a specialised gluten-free diet can also take several months.

Who gets it?

- Coeliac disease is a disease of Caucasians. About one in 1,500 of the population in the UK are affected and many of these are undiagnosed.
- There is a strong genetic tendency, with a high risk, if you have an identical twin who is affected. Lesser degrees of sensitivity and change in the bowel may be present in many first-degree relatives of those who have this disease.
- A possible predisposing factor is the early introduction of wheat and other grains into the infant's diet. Since 1974 the recommendation has been that wheat should not be introduced before four months of age, rather than six weeks which was the norm previously. This may have resulted in a fall in the incidence of childhood coeliac disease.
- Infection with a virus may also be a trigger, perhaps only in predisposed individuals.
- Finally coeliac disease is also associated with diabetes, thyroid disease and some types of arthritis.

What your doctor can do

- Investigate suspected cases with:
 - Biopsy of the small bowel taken via a telescope. This usually gives a definite or near definite answer. Subsequent avoidance of gluten should result in marked improvement in the bowel appearance as seen on a second biopsy.
 - Perform blood tests to look for anaemia, nutritional deficiencies and patterns of antibodies that would support the diagnosis of coeliac disease.
 - Perform a barium meal x-ray of the small bowel, which doesn't confirm the diagnosis but may help exclude other conditions.
 - Sometimes challenge with a gluten preparation and repeating the bowel biopsy are necessary to confirm the diagnosis.

- Treat with a gluten-free diet (see page 442) which means not consuming wheat, oats, barley and rye, and any food made from them. The degree of sensitivity may be remarkable even with modified starch, communion wafers and some beers causing problems. The advice of an experienced dietician is invaluable, especially for those whose illness does not recover promptly.
- Correct nutritional deficiencies. Supplements of iron, folic acid and zinc may be needed. Those with severe malabsorption may also need calcium, vitamin D and multi-vitamins. Eventually long-term supplements should not be required. However there may be a slight relative lack of calcium, selenium and possibly other nutrients. Whether these are important is not certain.
- Very rarely patients do not improve with a gluten-free diet, and other treatments are needed. These include steroids and immune system altering drugs.
- In the long term other bowel problems may develop despite careful adherence to a gluten-free diet. Life-long follow-up is recommended and reinvestigation of those with a return of symptoms is needed.

What you can do

- Follow the gluten-free diet carefully. Keeping a diet diary for four weeks, which is then reviewed by the dietician, is a useful exercise. It allows assessment of nutrient intake, and may allow early identification of foods that may not be gluten-free.
- Other foods may sometimes need to be avoided. Sometimes milk products contribute to the diarrhoea, possibly because of their lactose (milk sugar) content. When recovery is complete, some of the eliminated foods may be able to be re-introduced into the diet. Sometimes other food sensitivities exist; soya is a particular possibility.
- If your bowel has recovered completely, there is recent evidence that some coeliacs are able to tolerate oats. This cereal is lower in gluten than the others. Discuss this possibility with your specialist or dietician.
- Take supplements of zinc if appetite is poor, there is poor resistance to infection or a poor response to a gluten-free diet.
- Supplements may have to be taken in a sublingual form because damage to the villi reduces absorption of nutrients in the small intestine.

Special note for mothers

It would seem prudent for all new mothers who are not coeliac not to introduce gluten-containing cereals, including oats, into their children's diet until at least after their first birthday, possibly even later. Refer to the Weaning Section in *Healthy Parents, Healthy Baby* (see Recommended reading page 490).

Constipation

Our bowels are not something we talk about in public, and yet a disturbance in bowel function, especially constipation, is a common affliction of those living in industrialised countries. A change in lifestyle and a relatively poor intake of fibre-rich foods are contributory factors. Constipation is the result of the bowel becoming sluggish and therefore not doing its job properly, due usually to a lazy bowel muscle which does not contract regularly and strongly, or bowel muscles that do contract, but in a poorly coordinated fashion.

There are two layers of muscle throughout the gut which extend from the throat. They are involved in swallowing, the passage of food through the gut, and the expulsion of waste from the the rectum and anus. They all work to propel food through the gut while it is being broken down, digested, and absorbed into the body, and while the waste residues are formed. The whole process normally takes between one to two days in most men and up to three days in women.

In order for food and digestive material to pass smoothly along the bowel, both muscle layers must work together in a carefully coordinated fashion. First, the ring muscles, which are found at the entrance or exit to the stomach, must relax. This relaxation is then followed by a wave of muscular contraction which pushes a ball of food along the gut and slowly down its length. Each muscle contraction is preceded by an area of muscle relaxation before it. The high pressure generated by the bowel contraction pushes the bowel contents forwards into the low-pressure area of the relaxed bowel. This is what would happen in a healthy gut.

What are the symptoms?

Apart from resulting in much attention being placed on the bowel, constipation can result in a most uncomfortable feeling in the lower abdomen, sometimes accompanied by wind and pain. Straining on the toilet can result in haemorrhoids.

When the bowels are working normally they are usually emptied daily, with perhaps one or two motions. Those who are constipated cannot seem to empty their bowels more than once or twice each week, and may take even longer in severe cases, usually with the use of laxatives.

What is not widely appreciated is that other disturbing health problems are also associated with severe constipation in young women. These include:

- hormonal abnormalities such as a low oestrogen level
- more painful and irregular periods
- breast lumps and pre-cancerous changes in breast tissue

- a greater chance of hysterectomy or operation for a cyst on the ovary
- pain on intercourse and difficulty achieving orgasm
- infertility
- hesitancy in starting to pass water
- cold hands and a tendency to faint.

Who gets it?

Women are more prone to constipation than men. Firstly the gut transit time is faster in men than women (the time it takes for food to be processed from one end of the gut to the other). Secondly, the bowel seems to be slowed by the presence of oestrogen, the female sex hormone.

In some women with constipation the muscles of the pelvic floor are tense and not able to relax properly. These muscles support our urethra allowing water to pass from the bladder to the outside world, and the walls of the vagina as well as the bowel. You can feel these muscles by pulling in your tummy and drawing your buttocks together, as if you were trying to stop the flow of urine in mid-stream. If these muscles are tense and do not relax then the motions cannot easily pass through.

Approximately 50 per cent of the women we see in our clinics each year suffer with constipation to some degree, and in many cases have done so for years.

What causes it?

Lack of fibre

A number of experts have recommended that the UK population as a whole should increase its fibre intake by about 40 per cent. This means that everyone, in theory, should eat on average 40 per cent more fruit, vegetables and cereals (bread and other foods containing wheat, oats, barley, rye and sweetcorn maize). The theory is the increased amount of fibre (and, if you remember, fibre is the food that does not get digested), would increase the stool output and reduce the gut transit time. But it doesn't work like that for all of us, unfortunately. In fact it is now acknowledged that some cereals can actually *worsen* constipation.

Wheat and other grains

Although bran has been heralded as the best remedy for constipation, and is still recommended by many doctors today, more recent evidence suggests that it may serve to worsen symptoms in some people. Early studies in *The Lancet* medical journal showed the benefits of bran in some of a small sample. (Interestingly, these doctors used Allinson's bran. Dr Allinson, the nineteenth century doctor was struck off the medical register for advocating the then controversial health benefits of whole-meal as opposed to white bread.)

More recently *The Lancet* carried a report from a group of specialists at Addenbrookes's Hospital in Cambridge, led by Dr John Hunter, which told a rather different story. Their observation was that the avoidance of certain foods helped two-thirds of their patients who had erratic bowel habit including constipation. Wheat was reported as the most common aggravating food, and subsequent work has confirmed this initial observation. Wheat and its associated grains – oats, barley and rye – which all contain the protein gluten, can cause either constipation or diarrhoea.

Tea

It seems that tea slows down gut-transit time for 50 per cent of people, according to a Scandinavian study. It can then aggravate constipation, having the opposite effect to coffee.

Dehydration

Lack of fluid is sometimes a cause of constipation, particularly in hot climates. If you take fibre supplements you will need to drink an extra two glasses of fluid per day.

Periods

It is now widely known that many women become constipated in the week before their period is due. The normal rate at which food moves through the gut slows down, and may well contribute to the abdominal bloating that many women experience premenstrually.

Magnesium deficiency

Magnesium is needed for smooth muscle control. As the lining of the gut is made up of smooth muscle, when levels of magnesium are low, as seems to be the case in over 50 per cent of women with PMS, the muscle groups do not contract and relax in their usual sequence, and constipation results. Taking supplements of magnesium, to correct levels, seems also to ease constipation.

Stress

Following the emphasis that many people have placed on stress, it probably won't come as a surprise to find that it affects the movement of food through the gut. Studies have shown that any stress can inhibit the normal regular contractions that occur spontaneously as part of the digestive system, and might aggravate constipation.

Pain

Understandably, any painful pelvic condition, including ovarian cysts, endometriosis, period pains, or post childbirth, can easily inhibit the urge to go to the toilet. In addition to these sources of pain and discomfort, piles (a tear in the margin of the anus or an anal fissure) are almost always

associated with a powerful spasm of the muscles in the anus also, making it very difficult for motions to pass through.

Drugs

A number of drugs can cause constipation as a side-effect, the most common of which include antidepressants and painkillers.

Antidepressants are frequently accompanied by constipation, a dry mouth and sometimes blurred vision, especially at the start of therapy or if high doses are used. This effect is most noticeable with older types of antidepressants such as Amitryptiline and Desimipramine.

Strong painkillers

Painkillers which are derived from morphine, such as codeine, will invariably cause constipation. This means that when taking any pain killer that contains codeine or dihydrocodeine you can expect to become constipated.

Lack of exercise

As we get lazier as a nation, the incidence of heart disease, stroke and obesity increases. There is nothing like a good workout to get the bowels moving, so if you have a sluggish bowel and you are not exercising, turn to page 32 and get started!

What your doctor can do

- Recommend a diet rich in fruit and vegetable fibre, rather than bran or wheat fibre.
- Offer laxatives or a fibre supplement.
- If the onset of constipation is sudden in an older patient, and accompanied by bleeding or pain, your doctor should test for an underlying reason, like colon cancer. This may mean performing tests for hidden traces of blood in the stools, x-rays or arranging a specialist examination.

What you can do

- *Eat plenty of fibre-rich foods* These include fruit, vegetables, nuts and seeds, some cereals like brown rice, sweetcorn (maize), buckwheat, sago and tapioca. Take care, as some of these foods might make other symptoms worse, especially if you have bloating and wind.
- *Take a fibre supplement* This can be from your doctor or from a health-food shop. Good supplements include those containing ispaghula (Fybogel), sterculia (Normacol), linseeds (Linusit Gold), psyllium husks and, when tolerated, coarse oats. These are all highly water retentive and can be very effective, especially when combined with other measures to stimulate movement through the gut.

- *Ensure a good intake of fluid* This is very important if you are elderly or when taking a fibre supplement.
- *Avoid wheat, oats, barley and rye* Avoid too all foods containing them. This is a major change to your diet, and you will need to refer to the suggested menus on page 442.
- *Cut down or stop your tea consumption* Limit yourself to two cups of weak tea per day, or drink a herbal alternative (see page 7).
- *Drink one or two cups of coffee instead of tea* This may act as a laxative for some. The stimulating effect appears to take about 60 minutes before it is noticeable.
- *Have a cigarette!* Yes, if you are already a smoker, you may be aware that a few puffs – especially first thing in the morning or after your main meal – can stimulate your bowels. This is no recommendation to start smoking and no excuse not to give up, but if you do smoke you can sometimes help your bowels along.
- *Take some magnesium* This is particularly effective if you don't suffer with intermittent diarrhoea as well, and have premenstrual problems or suffer fatigue. Some women find that it is better for them to take magnesium last thing at night, gradually increasing the dose to what is called 'gut tolerance level'. This means that you will reach a level when the magnesium causes diarrhoea, and you will then need to cut back. A safe starting dose is between 200 and 400 mg per day. We frequently have patients who take a combination of linseeds with their morning cereal and up to 800 mg magnesium at night in order to control their constipation. We use magnesium amino acid chelate because it is gentle on the gut, but magnesium oxide or gluconate will do. Magnesium hydroxide, in the form of a white liquid and sulphate or in the form of crystals are available from some chemists, and are much more dramatic in their effect.
- *Take regular exercise* Try exercising three or four times each week. Choose a form of exercise that you have enjoyed in the past so that you continue on a regular basis (see page 32).
- *Avoid stressful situations whenever possible* Stress can cause muscles to go into spasm. Yoga is an excellent way of helping your body to relax and improve tolerance of stress. Listening to music, going for a walk, eating a good meal or just enjoying the company of family and friends, are all useful and effective ways of reducing tension.
- *Set aside time for your bowels* Some of us need peace and quiet and plenty of time to relax our muscles so that the bowels work properly. If you prefer to be undisturbed, choose a time when you can be alone, take the phone off the hook if necessary, and make a hot drink. A morning exercise session may stimulate the bowels too. Try to open your bowels at a regular time each day, like after breakfast or after your main meal. Our bodies like habits.

- *Use a suppository* If the other methods have failed try using a glycerine suppository to stimulate a bowel movement. They can be bought over the counter in any pharmacy. However do not use them in place of the above recommendations as your bowels might become dependent on them.

Complementary therapies

There are numerous treatment approaches to try to help relieve the symptoms of constipation. Massage is a favourite one, as it encourages peristalsis, which is the coordinated wave-like muscle contractions that take place in the gut, and will also release tension in those muscles. You should ideally have a regular professional massage, and do some self-massage of the tummy and lower back in between.

Colonic irrigation is said to be effective at flushing out the toxins in the bowel and some people swear by it. Always remember though that colonic irrigation is aiming at symptom relief rather than addressing the root cause.

Both acupuncture and herbal medicine are likely to be useful tools, helping to get your whole body functioning optimally. A herbal practitioner can also prepare a special cream for you to insert into your back passage to soothe piles and help to heal cracks and tears.

Taking time to relax formerly each day, perhaps combining relaxation with some self-massage is one way that you can help to speed up the recovery process (see page 29).

Nicole's story

Nicole was a 37-year-old doctor and mother of two children who had been suffering with constipation for many years.

I had constipation for absolutely years to a point where I thought it was normal for me. I remember a representative from a pharmaceutical company raving about a product for constipation called Regulan which I subsequently tried. It did make a bit of difference to start with but not a great deal. I remember being constipated during pregnancy. I also developed haemorrhoids after my first pregnancy which were made worse by the constipation.

The doctors were concerned after the birth of our first child as they thought I had a prolapsed uterus which the piles and constipation aggravated. I usually open my bowels every few days and my motions were very hard and pellety. Because of the prolapse, in order to pass a motion, I had to actually stick my fingers into my vagina as everything seemed to be pressing on my bowel. I always felt as if 'everything was falling out'. I thought I was going to need major surgery at some point. After my second baby, the consultant

I was under decided I had a weak pelvic floor rather than a prolapse and that I must avoid being constipated at all costs!

I heard an interview with the WNAS on the radio and decided to get some advice about my diet. Even though I'm medically qualified I had had so little education on the subject of nutrition as part of my training. The WNAS recommended taking supplements of magnesium and organic linseeds to help combat the constipation. In addition I eliminated certain foods such as wheat, rye and oats from my diet. I must say I have not been constipated since the week after I began the programme. I have to watch my diet and the occasions when I eat foods I should not be eating I can feel some of the symptoms starting up again, but this time I know how to put it right. I don't have that falling out feeling any more or any pressure in the pelvic floor area. My bowels have calmed down and I feel a great deal better for it. I also had severe premenstrual syndrome which I have managed to sort out on the same programme. I now feel comfortable physically and mentally. I feel that I have had my eyes opened.'

See also: Irritable bowel syndrome (IBS), The Women's Nutritional Advisory Service.

Crohn's Disease

Crohn's disease is named after an American physician who, over 60 years ago, described, with others, this chronic inflammatory disease of the bowel. Its cause remains as elusive now as it was then. This condition can affect any part of the bowel from the mouth to the anus. Young adults are most commonly affected, and it seems to affect equal numbers of men and women. Typical features are diarrhoea, abdominal pain and weight loss. The affected parts of the bowel become swollen and inflamed, with large numbers of white cells being present, though what stimulates this reaction is unclear. Most usually the small bowel, which is primarily involved in digestion and absorption, and the large bowel, are the main targets for this disease. At times the inflammatory process extends to other distant parts of the body, namely the eyes, joints and skin.

What causes it?

This is a much debated subject, with a mixture of genetic and environmental factors at work.

- *It tends to run in families* In identical twins, if one has the disease, there is nearly a 66 per cent chance that the other will develop it. However, it is rare for both husband and wife to suffer.

- *Dietary factors are a possibility* Recovery from Crohn's disease can be achieved by the exclusion from the diet of a variety of foods. Whether this is due to an actual allergy or the influence of some foods upon the type of bacteria present in the bowel is uncertain.
- *Infection with either the measles virus, or a bacteria* that is a distant relative of that which causes tuberculosis, are two possibilities.
- *Immune system overactivity* is a possible factor, causing the body to over-react to the presence of bacteria or even to attack the body's own tissues.
- *Smoking*, antibodies against baker's yeast, the swallowing of tooth-paste, and not being breast-fed as an infant, are all possible contributing factors.

What your doctor can do

- *Assess the extent of the disease* Barium x-rays, examination of the lower or upper bowel with a flexible telescope called an endoscope, and use of radioactive white cells are all used for this.
- *Perform blood tests* These will assess disease activity, anaemia and nutritional deficiencies, especially iron, vitamin B12 and zinc.
- *Give advice on diet* Any one of the following types of diet may be appropriate. This is best determined on the basis of specialist recommendation:
 - a high-calorie, high-protein diet for those with weight loss and nutritional deficiencies
 - a low-fibre diet for those in whom the bowel is very inflamed
 - a diet that avoids milk and milk sugar (lactose) for those who are sensitive to it/them
 - an exclusion diet if multiple food sensitivities are suspected
 - a diet using only specialised pre-digested foods – an elemental diet – used in a hospital setting.
- *Prescribe drug therapy* Steroids are the mainstay of treatment, and high doses are required if the illness is severe. Other anti-inflammatory and immune system altering drugs are used, especially if the patient needs repeatedly high doses of steroids. Antibiotics are used for infective complications and sometimes to help with the bowel disease.
- *Consider surgery* This would be to remove severely affected parts of the bowel or to tackle the inflammation if it has spread to neighbouring areas.

What you can do

- Take your medicine regularly.
- Staying in regular and good contact with your specialist is very important. Crohn's disease is never cured, and the quality of care will depend on a good two-way flow of information.

- Stop smoking if you are a smoker.
- Avoid foods that aggravate your symptoms. This will for the majority of patients require some expert advice along the lines given above. It seems that the commonest foods to aggravate Crohn's disease are the same that aggravate irritable bowel disease. These are:
 - wheat and other grains and all food such as bread, cakes and pasta
 - milk and cheese
 - coffee, and possibly tea
 - some fruits, especially raw, with orange and tomato the most likely
 - foods that contain baker's yeast, e.g. bread and some buns
 - other yeast rich foods, e.g. alcohol, vinegar, pickled foods and yeast extract
 - foods that are hard to digest, e.g. sweetcorn and beans.

Many of these can be easily avoided without recourse to expert advice. You will need to avoid the foods for three or four weeks to see if there is any improvement.

- Take supplements. Probably the simplest supplement to take for those who are not receiving specific advice on this from their doctor is a strong multi-vitamin multi-mineral preparation. This may need amending if the following situations are present:
 - severe diarrhoea – a soluble vitamin supplement may be better absorbed
 - blood loss or anaemia – iron supplements may be needed
 - poor wound healing or reduced resistance to infection – supplements of zinc
 - prolonged bleeding in those with severe disease or receiving antibiotics – supplements of vitamin K
 - long-standing disease with osteoporosis – calcium supplements
 - sulphasalazine therapy – folic acid supplements
 - severe or long-standing diarrhoea and muscle cramps – extra magnesium or potassium supplements
 - severe disease and a restricted diet or special feeding regime – supplements of the mineral selenium
 - damage to the terminal ileum or its surgical removal – vitamin B12 by injection
 - severe or long-standing disease and poor night vision – vitamin A.
- Take a probiotic supplement like Acidophillus to repopulate the colon with 'friendly' bacteria. Crohn's sufferers have up to six times more 'bad' bacteria, (bacteriodes) present in the colon.
- Limit foods which contain the additive carageenan found in jelly, drinks and other manufactured foods. This additive actually stimulates the growth of bacteriodes and thus has an adverse effect on the friendly bacteria (bifidobacteria).

- Do not give time-release supplements as they rely on adequate hydrochloric acid (HCL) to break them down over a long period of time.
- If supplements are hard to take, try crushing the tablet and mix it with jam or honey. Buy capsules which can be opened and sprinkled on food or in a drink. They might not taste too pleasant, but absorbancy will be more efficient.
- Take some aloe vera, which can reduce inflammation of the gut lining and has a healing effect on the gastrointestinal tract.
- Zinc loss through the bowel is quite great, so supplementing with this mineral is fundamental.
- The amino acid L-glutamine helps to help the gut lining and reduce the risk of it becoming 'leaky' and setting up further reactions.
- Take a supplement of evening primrose oil and marine fish oil to reduce the synthesis of the pro-inflammatory prostaglandins.

If any of these situations apply then you should discuss the need for such supplements with your specialist. All of these nutrients can be tested for, though some require the use of a specialised laboratory. Correcting any nutritional deficiency can only help, and it is possible that doing so may positively influence the degree of inflammation, the rate of wound healing, resistance to infection, appetite, general well-being and possibly the future risk of cancer.

Complementary therapies

None are likely to control the disease.

Cystitis

Cystitis is an inflammation of the bladder caused by a bacterial infection or a mechanical disturbance in the area. Vigorous sexual intercourse can be a trigger, which is why it became known as 'the honeymoon syndrome'. Consequently it should come as no surprise to discover that cystitis is nearly thirteen times more common in the general female population than in nuns. Studies estimate that one woman in five will have had a recent episode of cystitis. A physician-based study conducted in London demonstrated that 52 per cent of women get cystitis at some point in their lives, but some 6 per cent suffer repeated attacks.

What causes it?

- In approximately 50 per cent of cases it is caused by the organism *E. coli*, which sometimes travels from the anus area. The bacteria

penetrate the urethra, via the perineum, and work their way into the bladder. There is a clear association between diaphragm users and cystitis, again because of the *E.coli*.

- Vigorous sexual intercourse can bring on symptoms.
- Tight clothing, which can put unacceptable pressure on the urethra.
- Vaginal deodorants and disinfectants can also bring on symptoms.
- A prolapse may restrict the urinary flow and predispose an infection.
- Caffeine affects the muscles of the bladder and aggravates symptoms of urgency.

What your doctor can do

- Test your urine to determine which sort of bacteria are present and whether they are sensitive to any particular types of antibiotics.
- Prescribing antibiotics is the usual method of treatment. However, studies have shown that approximately two-thirds of female sufferers recover naturally without antibiotics, and even after treatment with antibiotics symptoms can return.

Penny's story

Penny was a 37-year-old researcher who had been suffering with bouts of recurrent cystitis, which were becoming almost constant at the time she approached the WNAS.

'I had my first episode of cystitis three years ago. It was painful and unpleasant, but it came and went and I didn't give it much thought. The following year I had three separate bouts which I found alarming. I consulted my doctor and researched self-help methods to overcome the symptoms, but nothing really seemed to help. This last year I reckon I had cystitis every month, at period time. I really lived in dread of the symptoms as the month progressed.

I approached the WNAS for advice after reading one of their books as I was suffering with diarrhoea, and horrendous period pains. I completed their questionnaire and diet diary, and then made an appointment for a telephone consultation. I was given a programme to follow which involved changing my diet, taking regular exercise and some nutritional supplements. I also started being meticulous about my hygiene, and began using baby wipes after going to the toilet.

To my absolute delight I haven't had any cystitis since I began the programme, the diarrhoea has cleared up and I have now had several pain-free periods. I am amazed and relieved as I am due to get married in a few months time and we are hoping to start a family straight away.'

What you can do

- Drink plenty of liquids, particularly water, throughout the day. Aim to have the equivalent of a glass of water every hour whilst the symptoms are acute to flush your system through.
- Drink a few glasses of cranberry juice. Cranberry juice contains a compound called hippuric acid which actually inhibits the bacteria responsible for cystitis from adhering to the lining of the bladder and urinary tract. However, the caution with drinking too much is that most commercial varieties contain a lot of sugar to disguise the bitter taste of the fruit. Since sugar has a detrimental effect on the immune system, it would be more beneficial to take a concentrated cranberry formula in tablet or powder form.
- Strengthen the immune system to help prevent recurrent bouts of cystitis by taking garlic capsules and 25mg of zinc daily. Garlic, as well as being an immune enhancer, is also a natural antibiotic. Antibiotics are normally the first line of treatment given by doctors to clear up cystitis, but more natural means are healthier and safer in the long term.
- After sex and after a bowel movement wash yourself carefully with warm, unperfumed soapy water, wiping yourself from front to back to wash the germs away. Sit so that your anus is at a lower point than your urethra, and let the water run down to wash away any faecal bacteria.
- Choose unperfumed bath products, as allergies can develop, and the urethra may become inflamed as a result. Do not use feminine fresh sprays as the chemicals can cause a reaction.
- Organic tampons and sanitary towels are becoming widely available in health food stores and even supermarkets.
- Add a small amount of bicarbonate of soda to the water you drink; this can help to ease the symptoms by making your urine more alkaline.
- Avoid drinking caffeine, and use alternative drinks, as coffee can make the bladder irritation worse.
- If you use a diaphragm, and your symptoms are recurrent, try switching to an alternative method of contraception for a while.
- If there is blood in the urine, consult a medical practitioner for further diagnosis.

Complementary therapies

Homeopathic remedies like *Cantharis*, *Staphisagria* or *Apis* may well bring relief. Herbal remedies may also be helpful as an adjunct to the conventional methods of overcoming symptoms of cystitis. Aromatherapy can be useful and juniper oil can be used as part of a lower abdominal massage.

See also: Recommended reading and References.