Dr. Warwick Carter

MENOPAUSE
A to Z

A simple guide to the menopause, its investigations, stages, complications, treatment, anatomy, and terminology.
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Why do they call it the menopause, when it happens to women?

Derived from the combination of a Greek and Latin word:
Greek : MENO = Month
Latin : PAUSIS = Cessation
Mothers teach their daughters all about periods and procreation, but nobody teaches them about what happens when it all stops. Menopause (called the climacteric in the old days) has only been a fact of life for most women in the last century or two. Prior to this the majority of women did not live long enough to reach menopause, many dying from the complications of childbirth. Once a woman passes her menopause, her ovaries will no longer produce eggs, her monthly periods will cease, and no more female hormones will be manufactured. The process usually occurs gradually over several years, between the early forties and the mid-fifties, but it may occur as early as 35 or as late as 58. It is therefore not unusual for a woman to spend more of her life after the menopause (or change of life) than she spends being fertile, but this does not mean that she loses her femininity. Many women treat the end of their periods as a blessing and lead very active lives for many years afterwards (active sexually as well as physically and mentally).

The unpleasant part of the change is from one stage to another, when the hormones go crazy, the headaches and hot flushes take over, and depression occurs. The first sign is usually an irregularity in the frequency and nature of the periods, and the gradual disappearance may be the only symptom in 25% of women. About 50% have other symptoms that cause discomfort, and the remaining 25% go through severe and very distressing symptoms.

The menopause is a natural event, and psychologically most women take it in their stride as simply another stage of life, but it is wrong to dismiss the unpleasant physical symptoms without seeking medical assistance. Doctors find the biggest problem to be the failure of their patients to tell them exactly what they are feeling and what effects the menopause is having on them. The first step in treating someone with menopausal symptoms is explanation. If they know why something is happening, it often makes the problem more bearable.

The sex hormones are controlled by the brain and released from the ovaries into the bloodstream on regular signals from the pituitary gland, which sits underneath the centre of the brain. Once in the blood, these hormones have an effect on every part of the body, but more particularly the uterus, vagina, breasts and pubic areas. It is these hormones that make the breasts grow in a teenage girl, give the woman regular periods as their levels change during the month, and cause hair to grow in the groin and armpits.

For an unknown reason, once a woman reaches an age somewhere between the early forties and early fifties, the brain breaks rhythm in sending the messages to the ovaries. The signals become irregular - sometimes too strong, at other times too weak. The ovaries respond by putting out the sex hormones in varying levels, and this causes side effects for the owner of those ovaries. The periods become irregular, vary in length and intensity, and may become painful. Other symptoms can include bloating and associated headaches and irritability as excess fluid collects in the brain, breasts and pelvis; hot flushes when hormone surges rush through the bloodstream after excess amounts are released by the ovaries; abdominal cramps caused by spasms of the uterine muscles; and depression which can be a reaction to the changes in the body, a fear of ageing or a direct effect of the hormones on the brain.

Menopause cannot be cured, because it is a natural occurrence, but doctors can relieve most of the symptoms. Sex hormone tablets are the main stay of treatment. They can be taken constantly after the change has finished, but during the menopause they are usually taken cyclically. One hormone (oestrogen) is taken for three weeks per month, and a different one (progestogen) is added in for the last 10 to 14 days. This maintains a near normal hormonal balance, and the woman will keep having periods, while underneath the artificial hormones, her natural menopause is occurring, so that when the tablets are stopped after a year or two, the menopausal symptoms will have gone. Hormones may also be given as skin patches, vaginal cream and by injection.

After the menopause, women should continue the hormones for many years to prevent osteoporosis, skin thinning, Alzheimer’s disease and slow ageing. Taking combined oestrogen and progestogen hormone replacement for longer than five years slightly increases the risk of breast cancer, although it slightly decreases the risk of some other cancers.

Minor symptoms can be controlled individually. Fluid tablets can help bloating and headaches, other agents can help uterine cramps and heavy bleeding. Depression can be treated with specific medications.

An obvious problem faced by a woman passing through the menopause is when to stop using contraceptives. As a rule of thumb, doctors advise that contraception should be continued for six months after the last period, or for a year if the woman is under 50. Taking the contraceptive pill may actually mask many of the menopausal symptoms and cause the periods to continue. It may be necessary to use another form of contraception to determine whether the woman has gone through the menopause.

Doctors can also perform blood tests to determine relative hormone levels and tell a woman if she is through the change of life or not. These tests are very difficult to interpret if the woman is taking the contraceptive pill.

Help is available, and there is need for any woman to suffer as she changes from one stage of her life to another.
ACNE

Acne, spots, pimples, zits. It doesn’t matter what they are called, nobody likes to have them, or look at them. Acne can vary from the annual spot, to a severe disease that may cause both skin and psychological scarring. It is generally a curse of teenage years, but it may strike later in life too, particularly in women. Acne is usually more severe in teenage males, but starts earlier in females. Acne affects Caucasians (whites) more than Negroes or Chinese races. The face, upper chest, upper back and neck are most commonly affected.

Pimples are due to a blockage in the outflow of oil (known as sebum) from the thousands of tiny oil glands in the skin. This blockage can in turn be caused by dirt (uncommon in our super-clean society), dead skin left behind during the normal regular regeneration of the skin surface, or a thickening and excess production of the oil itself.

Once the opening of the oil duct becomes blocked, the gland becomes dilated with the thick oil, then inflamed, and eventually infected. The result is a white head, with the surrounding red area of infection. Eventually this bursts, sometimes leaving a scar.

The most common cause of acne is the thickening of sebum caused by the hormonal changes of puberty. The severity of acne in a teenager will depend upon the degree of acne suffered by his/her parents, as this is a strongly inherited characteristic. Pregnancy, premenstrual syndrome (hormonal changes before a period), menopause and the oral contraceptive pill may all cause pimples in this way.

Stress in the patient, either psychological or caused by disease, may make pimples worsen. A simple cold, or the onset of exams may see the number of spots increase dramatically.

If the onset of acne is after the teenage years, or recurs, the polycystic ovarian syndrome may be responsible, and medications such as the contraceptive pill and metformin may be helpful.

Pressure from spectacles on the bridge of the nose or tight collars, increases in skin humidity from a fringe of hair or nylon clothing, and excessive use of cosmetics that further block the oil duct openings, can all cause deterioration in a person’s acne. Some chemicals or oils that a patient may encounter in the work place are also possible causes. Medications such as phenytoin, lithium, isoniazid, rifampicin may also be responsible.

Treatment of asthma or other diseases with steroids (eg. prednisone) may worsen acne. A tumour of the pituitary gland under the brain, or the adrenal glands on each kidney, may produce higher than normal levels of steroids to mimic this problem.

The severity of acne also depends on hereditary factors. There is no evidence that dark chocolate, vitamins or herbs have any effect on acne, but there is some new evidence that a diet high is sugar and foods with a high glycaemic index may aggravate acne.

A number of conditions can cause a rash that looks like acne, but is not. The most common of these are rosacea and folliculitis barbae (ingrown facial hairs caused by blunt blade when shaving or other skin damage). Rosacea is a skin disease of the face, found most commonly in middle-aged women, that causes excessive intermittent flushing of the face, then sores develop that are similar to a severe case of pimples.

There is no evidence that diet, vitamins or other herbs have any effect on pimples. A small number of sufferers may find that one particular food causes a fresh crop of spots, but these people usually quickly realise this and avoid the offending substance.

The first step in treatment involves keeping the skin clean with a mild soap and face cloth, and simple oil drying, antiseptic and cleansing creams or lotions. Further treatment involves combinations of antibiotics (eg. tetracyclines) that may be taken in the short term for acute flare ups or in the long term to prevent acne, skin lotions or creams containing antibiotics and/or steroids, and changing a woman's hormonal balance by putting her on the oral contraceptive pill or using other hormones. In rare cases it is necessary to take the very potent medication isotretinoin (which can cause birth deformities if used during pregnancy), give steroid injections (eg. triamcinolone) into the skin around particularly bad eruptions, and abrade away the skin around scars. The treatment of adults with maturity onset acne is more difficult than juvenile acne.

Acne may cause both skin and psychological scarring. Picking acne spots can cause serious secondary bacterial infections that can spread deep into the skin (cellulitis).

Although acne cannot be cured, in the majority of cases reasonable control can be achieved.
**ACUPUNCTURE**

Acupuncture is an ancient Chinese method of healing used for at least four thousand years. It is a system of healing in which the body's inherent defence, repair and maintenance systems are stimulated by means of the selective insertion of fine needles through the skin. The points for insertion are located along the meridians along which the energy (or chi), according to the ancient Chinese tradition, is perceived to flow through the body. The oldest surviving description is the “Yellow Emperor's Classic of Internal Medicine” which was written in China about 100 BC. By the sixth century, the practice of acupuncture had been codified and standardised throughout China, and it remained one of the mainstays of Chinese medical practice until outlawed in 1929 by the nationalist government of Chiang Kai-shek. The practice of acupuncture continued in rural areas until the ban was lifted by Mao Tse-tung in 1949.

The first information in Europe about acupuncture was published by Dutch traders to Japan in the late eighteenth century. In 1821, the Englishman J. M. Churchill published “A Treatise on Acupuncture” under the aegis of the Royal College of Surgeons and brought knowledge of the practice into the British area of influence.

In addition to the natural therapists who practise traditional Chinese medicine, many doctors and physiotherapists now also use acupuncture and it has become an accepted form of treatment, particularly for the relief of pain, in orthodox medical practice. Scientifically, it is believed that acupuncture stimulates the release of endorphins. Endorphins are a potent narcotic painkiller that are naturally produced in small quantities in the body. A full explanation for its actions in other diseases has not yet been found, and its use for these is more controversial.

During acupuncture treatment, very fine needles are inserted into various points on the body. These points contain nerve endings, and correspond to areas of reduced electrical resistance on the skin. These areas can be detected by a meter that measures electrical resistance.

Acupuncture is believed to reduce pain by at least two methods:-
- Firstly it stimulates the release in the brain of chemical substances called endorphins, which are the body's own pain killers.
- Secondly, stimulating nerves with acupuncture effectively overloads them so that they are less able to carry pain messages to the brain.
Other actions of acupuncture can include raising the blood levels of white blood cells and antibodies that fight infection, and producing a calming effect by the release of other natural chemicals in the brain.

Acupuncture is a useful treatment for many painful conditions, especially those caused by muscle sprains or strains eg. strained neck, frozen shoulder, tennis elbow, low back pain, sciatica (provided it is not caused by a slipped disc), period pain, shingles and arthritis.

There are a number of other conditions for which acupuncture can be performed as an extra treatment in addition to orthodox western medical methods. These include the symptoms of menopause. It is absolutely essential that a patient receiving acupuncture treatment is first assessed by a doctor. Under no circumstances should a patient stop or change any of their other treatments except in consultation with a doctor (it would be extremely dangerous for example, to stop using your asthma puffers or tablets).

The needles used for acupuncture are even finer than those used for giving injections. Insertion is virtually painless, however sensations such as tingling, numbness or heaviness may be felt during treatment, and are part of the affect of acupuncture stimulating nerves.

The number of treatments necessary varies with the nature and severity of the complaint, and with the length of time it has been present. In some cases, for example an acute strained neck or morning sickness, relief may be obtained after two or three sessions. Other conditions such as low back pain which has been present for many years may require six to ten treatments before marked relief is evident. Usually the first signs of improvement are a return to normal sleep and improved range of movement.

For best results, the patient should be warm, relaxed and not overly hungry at the time of treatment. People who are physically exhausted, fasting or suffering from bleeding disorders should not undergo acupuncture treatment, and the practitioner should know if you are pregnant, taking warfarin tablets or have a pacemaker.

AGEING
Never regret growing old, there is only one alternative!
Older people should never hold back, but get out there and live as much as they can. The old aphorism of “use it or lose it” holds very true. Don’t act your age, act as you feel.

Everyone knows that the body ages, but no-one knows exactly how it occurs, why it occurs, and what triggers it. Ageing begins quite early in life, when we are in our twenties in the case of some organs, but it usually isn't noticed until middle age when the process accelerates.

At one time, people were “old” when they reached their forties, and little more than a hundred years ago in Britain most people could expect to die by the time they were fifty. Advances in medical care, nutrition and general living standards have resulted in a higher life expectancy as well as a higher quality-of-life expectancy until well into the seventies and eighties.

Women outlive men by an average of five to six years. No-one knows quite why. Some people believe that women are under less stress than men because women do not usually hold such demanding or responsible positions in the work force. Others say that this is nonsense that women have to deal with far more stress than men but learn to cope with it better. The fact that until recently women have smoked far less than men could be a contributory factor to female longevity. However, younger women today are smoking more, and this could cause a major change in their life expectancy. It has been suggested that female hormones may play a part in women's longer life expectancy, but a contrary view points to the deleterious effect on women's bodies of the menopause and the cessation of oestrogen production. It is likely that the more common use of hormone replacement therapy in women after the menopause will widen the gap between the life expectancy of men and women even further.

The most important factor in ageing is your own choice in parents. If your parents lived to a good age, you have a better chance of doing so, but with the advances in medical science and lifestyle in recent decades, even those whose parents died young can live a long life as their blood pressure, cholesterol, diabetes, osteoporosis etc. can all be effectively controlled.

Smoking and obesity are factors that you can control that will affect your longevity adversely, while alcohol in small amounts actually has a beneficial effect, as does moderate regular exercise.

As the body ages it changes both physically and mentally. Needless to say, the most obvious signs are physical, and the two most common signals of approaching old age are the hair and the skin. The hair loses its pigment and turns grey and eventually white, and the skin loses its elasticity so that it wrinkles, especially around the eyes and the neck. The hair also thins and men especially may go bald. Teeth tend to decay more easily in the elderly and may have to be filled or extracted, although advances in dental techniques mean that the latter is far less common, and the days when whole sets of teeth were extracted more or less routinely in older people are mercifully a thing of the past.

Muscles tend to lose their flexibility with age, although this is exacerbated by a sedentary life, and people who exercise adequately or do manual work show fewer signs of muscle deterioration than those who engage in little physical activity.

Bones become smaller, thinner and more brittle as they get older, and after the age of about 55 there is a measurable decrease in height. Posture often changes so that the elderly are no longer as erect, but round-shouldered
or even stooped. Joints and ligaments deteriorate and stiffen so that movement is not as automatic as it was, but slower and more deliberate. Different body tissues and organs vary considerably as to the time at which they will begin to age. For example, hearing is never as acute as it is in the teens, whereas the heart doesn't start to deteriorate until the thirties. Most organs are slightly less efficient by the age of forty but this is generally not noticeable for another decade or so unless the body is subjected to severe stress, such as illness or extreme exertion.

Just as the external parts of the body change with age, so too do the internal organs and functions. The lung capacity decreases (especially in smokers), blood pressure rises, the heart increases in size and the arteries become more rigid. The levels of various minerals (such as iron) and proteins in the blood reduce. Just about every organ in the body degenerates to some extent, including the liver, kidneys, and the entire nervous system encompassing the brain, the spinal cord and the peripheral nerves.

The first mental capacity to deteriorate is the ability to formulate new concepts. Newton and Einstein were in their mid-twenties when they developed their theories. This is followed by a difficulty in learning new facts, and especially in relating them to previous knowledge - although it will usually not become obvious for a considerable period since it is possible to compensate with increasing experience. Older people take longer to react, for example a middle-aged car driver is slower to stop in an emergency than someone in their twenties. The ability to concentrate also lessens with age.

The most common mental deterioration is an increasing difficulty with memory. This is usually noticed for the first time around 60 and it normally relates to new things and recent happenings, not to events and skills learned in the past. Very old people can often remember perfectly what happened many years ago but have no recollection at all of the events of yesterday.

Despite the fact that our body works less efficiently with ageing, it does not mean that it is inevitable that the body will break down altogether. The ageing process of itself does not cause illness - for example arthritis has the same causes no matter what the age of the individual. But certain conditions are more likely to occur in later years simply because of a general decline in the body's strength and resistance to infection.

Older people certainly have more time available to them than when they were building careers, homes and families, so they should enjoy their time by doing the travel, sports, hobbies and other activities that they always wanted to do but never got around to. Even relatively extreme activities such as abseiling, horse riding and even parachute jumps are not beyond many older people. The anticipation and organisation of these events can be more than half the fun, while recollecting and regaling your friends with the details can prolong the enjoyment for years afterwards.

It is important to remain active and not get into a boring routine. Vary your activities in a random way, and if an opportunity for activity presents itself, grab that opportunity, abandon any routine you may have and head off for a coffee at the local shops or a trip to the Amazon.

Even those who have had the misfortune to suffer from poor health, or don't have the financial resources to travel far, can enjoy new activities as simple as gardening, walking, music appreciation classes, learning to play bridge, research into a topic (eg. history) that they have always wondered about, or just going to a different shopping centre to the usual one.

Sex is often a taboo subject for the elderly, but it need not be so. Many couples have an active and rewarding sex life until the end, not necessarily involving intercourse (although doctors now have ways of helping this for both sexes), but caresses and other forms of intimacy can be just as rewarding. In fact humans are healthier and happier if they have someone to love and care about. The fact that the body is not as trim, taut and terrific as it used to be is unimportant, it is the caring and touching that counts.

In general, Western societies do not cope well with old age. We don't respect our old people and, as a community, fail to provide adequate facilities for them, although as more and more people live longer, the demand and political pressure for support services is likely to be increasingly pronounced and effective.

It is important to be aware of what is likely to happen as we age and to take steps to combat any negative aspects. Since the muscles and joints will become less flexible, appropriate exercise becomes doubly important. The exercise does not have to be vigorous, but a good brisk daily walk with some gentle stretching exercises to improve muscular condition will go a long way towards maintaining mobility. It is vital to maintain an adequate diet. When there is no longer a family at home to cook for, and especially if one spouse dies, it is easy to skimp on the preparation of meals and no longer eat an adequate supply of vitamins, minerals and the necessary nutrients. It is by no means uncommon for elderly people to suffer from malnutrition and older people often need to make a conscious effort to meet their dietary needs. Most community centres can make available easy-to-prepare recipes with a sound nutritional base.

Just as physical mobility is maintained by exercise, so too is the mind. It is important to maintain interests that have a purpose and keep the brain active and alert.

Most people will want to adapt their lifestyle as they get older so that their day-to-day living patterns are adjusted to meet their changing needs. A smaller home might be appropriate, which is near to shops or public transport if driving becomes too arduous. Proximity to family and friends becomes of increasing significance. Access to medical care is also important. Although ill health is by no means inevitable in old age, nevertheless it is more likely than before, and it is essential to have nearby a doctor and other medical facilities in which you have confidence.
You will never be really old provided you continue to have something to look forward to and approach new ideas and activities with enthusiasm.

See also LIBIDO REDUCED

ALZHEIMER DISEASE

Alzheimer disease (or senile dementia) use to be called second childhood, or the person was described as eccentric. Today it is recognised as the most common form of dementia in the elderly, but it may start as early as the mid-fifties.

It is named after the Wroclaw (Poland) neurologist Alois Alzheimer, who was born in 1864, and first described the disease in the medical literature.

The cause is a faster than normal loss of nerve cells in the brain, the exact cause of which is unknown, but studies suggest specific genes may predispose a person to the disease, and there is a familial tendency (runs in families from one generation to the next).

Initially it causes loss of recent memory, loss of initiative, reduced physical activity, confusion and loss of orientation (confused about place and time), then progresses to loss of speech, difficulty in swallowing which causes drooling, stiff muscles, incontinence of both faeces and urine, a bedridden state and eventually the patient is totally unaware of themselves or anything that is happening around them. Some patients may not deteriorate for some time, then drop to a lower level of activity quite suddenly. Admission to a nursing home or hospital is eventually necessary.

Reduced brain volume and wasting may show on a CT scan, but the diagnosis is primarily a clinical one made by a doctor after excluding all other forms of dementia by blood tests, X-rays, electroencephalogram (EEG) and sometimes taking a sample of the spinal fluid. The progress of the disease can be followed by tests of skill, general knowledge, simple maths, etc.

Medication is useful for restlessness and insomnia, and a number of medications (eg. donepezil, rivastigmine, tacrine, memantine) are now being used to slow the progression of the disease. These medications should only be prescribed by, or in consultation with, clinicians, who are experienced in the diagnosis and management of Alzheimer disease. In women, hormone replacement therapy after menopause reduces the incidence of Alzheimer disease, and slows its progress. Visits by the family general practitioner, physiotherapists, occupational therapists, home nursing care and health visitors are the main forms of management. Many claims have been made for various herbal remedies, but none have proved to be beneficial.

There is no cure, and treatments are aimed at keeping the patient content. Medications in the anticholinesterase class (eg. donepezil) have been shown to slow the progression of the disease in some patients. Lipoic acid is used by some practitioners. From diagnosis to eventually death takes seven years on average.

See also DEMENTIA; MEMORY DISTURBANCE

AMENORRHOEA

Amenorrhoea is a cessation of menstrual periods for any reason from pregnancy to stress and menopause.

See also MENSTRUAL PERIODS, LACK OF

ANDROPAUSE

The male menopause (andropause) is a natural event that occurs in all men. After the andropause no male hormones are manufactured in the testes, the testes no longer produce sperm, and the man is infertile.

The male sex hormone (testosterone) is released from the testes into the blood in response to signals from the pituitary gland, which sits underneath the centre of the brain. These hormones effect every part of the body, but more particularly the penis, scrotum and body hair production. For an unknown reason, once a man reaches an age somewhere between the late sixties and late seventies, the pituitary gland stops sending messages to the testes, which results in the symptoms of the andropause.

The man experiences the gradual onset of a loss of interest in sex (low libido), difficulty in maintaining or achieving an erection of the penis, a lack of ejaculation during sex, thinning of body and pubic hair, and shrinking of the testicles. Osteoporosis may occur, particularly if there is a family history, or the andropause occurs at an early age. These symptoms are far more subtle, and far less distressing than those that occur in the female menopause.

Blood tests can determine the levels of testosterone and the stimulating hormone released by the pituitary gland.

No treatment is normally necessary as it is a normal part of the ageing process, but if the andropause occurs earlier than normal, or following an injury or surgery to the testes or pituitary gland, testosterone supplements may be given by tablet, injection or implant.

See also MENOPAUSE; PITUITARY GLAND; SEX HORMONES

ANDROSTENEDIONE

Androstenedione is a weak androgenic hormone secreted by the testes, ovaries and adrenal glands. The amount present in the blood may be determined in the investigation of female hirsutism (facial hair and other male
characteristics). The normal ranges are:

- Males:
  - After puberty: 1.7 to 5.2 nmol/L (0.05 to 0.29 µg/100 mL).
  - Before puberty: less than 2 nmol/L (less than 0.05 µg/100 mL).

- Females:
  - Menstruating: 1.7 to 7.0 nmol/L (0.05 to 0.35 µg/100 mL).
  - Before puberty: less than 2 nmol/L (less than 0.05 µg/100 mL).
  - After menopause: 1.7 to 4.5 nmol/L.

High levels of androstenedione may indicate the presence of a virilising tumour (e.g., ovarian cancer), congenital adrenal hyperplasia (inherited lack of adrenal glands) or polycystic ovarian syndrome (multiple cysts in the ovaries). The levels may also be raised in patients with severe acne and premature baldness. The test can also be used to assess whether a person has entered puberty. It is necessary to collect the sample midmorning.

See also HORMONE; SEX HORMONES

ANTIDI-MÜLLERIAN HORMONE

The anti-Müllerian hormone (AMH) or Müllerian inhibiting hormone is a hormone that can be detected in the blood. It is at high levels in male children but drops at puberty, while in women it is absent during childhood and rises at puberty, dropping again as menopause approaches.

Changes in the level of this hormone, which is produced in the testes and ovaries respectively, may be responsible for the onset of puberty.

AMH may also be used as a test to assess the number of eggs (ova) a woman has in her ovaries. A low level indicates that the woman's egg supply is low and she may be approaching menopause. On the other hand, a very high level can indicate ovarian abnormalities such as the polycystic ovarian syndrome. The test must be done after any use of oral contraceptives or other hormone supplements has ceased.

The normal level in a fertile woman is 0.9 to 2.5 ng/mL.

See also OVARY

ANXIETY

Anxiety may be natural or unnatural. Natural anxiety is the type we all experience while expecting or experiencing a stressful event (e.g., exam, job interview, dangerous journey), and may be eased by counselling, distraction (doing something else) or as a last resort using medication. There are numerous causes of unnatural anxiety.

Depression is one common cause of anxiety. It may be a reaction to circumstances (e.g., loss of job, death in the family), or may have no apparent cause (endogenous depression). Patients with endogenous depression have an imbalance of chemicals that normally occur in the brain to control mood. If too much of one chemical is produced, the patient becomes depressed. Postpartum depression occurs in some women after childbirth as a response to the effect on the brain of sudden changes in hormone levels. The symptoms may be the same as endogenous depression, but excessive anxiety about the infant, or neglect of the child, may also occur.

Hormonal effects may also come into play in the menopause and with premenstrual tension. Women may find that they become inappropriately anxious just before their periods, or for no reason during menopause as their sex hormone levels fluctuate dramatically.

A neurosis is an illness of the personality that may cause excessive anxiety, phobias (an inappropriate fear of something or some place), and physical distress (e.g., shortness of breath, palpitations, nausea, abdominal pain, headache, faint). It is usually not possible to define the cause of the anxiety in patients with neuroses, and their phobias have no rational explanation.

As well as social and work disruption, long term alcoholism may result in neuroses, phobias, depression, irrational behaviour, poor coordination, difficulties in walking and performing simple tasks, and insanity.

Patients who have a serious disease, or who have had a near-death experience, may become excessively anxious. This is particularly common in patients who have had a heart attack, and who have some ongoing symptoms of heart disease.

The effects of anxiety are widespread in the body and it can affect every system and physiological function in some way. The effects vary from person to person and from time to time, but may include the following:

- Palpitations
- Increased reflexes
- Fainting
- Insomnia
- Weakness
- Lump in throat
- Nervousness
- Loss of appetite
- Nausea
- Sweating

- Twitches
- Tremors
- Rapid speech
- Clumsiness
- Jumpiness
- Choking
- Diarrhoea
- Itching

- Restlessness
- Abnormal fear
- Shallow breaths
- Indigestion
- Pallor
- Cold sweats

- Inattention
- Forgetfulness
- Poor judgement
- Inhibition
- Avoidance
- Revulsion
- Flushing

- Impatience
- Poor concentration
- Unfitness
- Fidgeting
- Poor coordination
- Preoccupation
- Confusion

- Hypertension
- Rapid breathing
- Chest pressure
- Lump in throat
- Nervousness
- Loss of appetite
- Nausea
- Sweating

- Insomnia
- Tremor
- Pacing
- Clumsiness
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- Rapid speech
- Clumsiness
- Jumpiness
- Choking
- Diarrhoea
- Itching

- Forgetfulness
- Poor judgement
- Inhibition
- Avoidance
- Revulsion
- Flushing

- Poor coordination
- Preoccupation
- Confusion
- Self-consciousness
- Colic

- Hypertension
- Rapid breathing
- Chest pressure
- Lump in throat
- Nervousness
- Loss of appetite
- Nausea
- Sweating

- Insomnia
- Tremor
- Pacing
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- Poor judgement
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- Revulsion
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- Poor coordination
- Preoccupation
- Confusion
- Self-consciousness
- Colic

- Hypertension
- Rapid breathing
- Chest pressure
- Lump in throat
- Nervousness
- Loss of appetite
- Nausea
- Sweating

- Insomnia
- Tremor
- Pacing
- Clumsiness
- Jumpiness
- Choking
- Diarrhoea
- Itching

- Increased reflexes
- Fainting
- Insomnia
- Weakness
- Lump in throat
- Nervousness
- Loss of appetite
- Nausea
- Sweating

- Tremors
- Rapid speech
- Clumsiness
- Jumpiness
- Choking
- Diarrhoea
- Itching

- Forgetfulness
- Poor judgement
- Inhibition
- Avoidance
- Revulsion
- Flushing

- Poor coordination
- Preoccupation
- Confusion
- Self-consciousness
- Colic
ATROPHIC VAGINITIS

Atrophic, postmenopausal or senile vaginitis is a lack of vaginal moisture and lubrication. The vagina is kept moist by the production of mucus from glands in and around it, that become more active during sexual stimulation. After the menopause the female hormone oestrogen, is no longer produced by the ovaries. This hormone stimulates the vaginal glands to produce mucus, but without oestrogen, they do not function. Blood tests can be used to measure the oestrogen level.

It is usually a condition of older women who complain of a dry, sore, itchy vagina. Ulceration and bacterial infection of the vagina may occur, and there is an increased risk of vaginal prolapse.

Simple moisturising creams can be applied when the vagina is irritated, but give only temporary relief. The best solution is to replace the missing oestrogen long term by using a vaginal cream once or twice a week, oestrogen tablets daily, skin patches once or twice a week, or implants every few months. Dosages must be slowly adjusted to suit each individual woman. The results of treatment are usually very good.

See also MENOPAUSE; VAGINA; VAGINAL PROLAPSE

BACK PAIN

Back pain (rachialgia) may occur when the intricate arrangement of bones, ligaments, discs, muscles and nerves that makes up the back becomes strained, torn, broken, stretched or otherwise disrupted.

The most common cause of back pain is ligamentous and muscular damage from incorrect lifting. Lifting and twisting simultaneously is particularly dangerous. A poor posture can also add to muscular and ligamentous strain.

In older people, arthritis may be the cause, when the smooth joints between the vertebrae become roughened and damaged by age and long years of use. This is osteoarthritis, but rheumatoid arthritis, which normally affects the hands and feet, may also affect the back.

A slight shift in the position of one vertebra on another, or inflammation of the surrounding tissues, may put pressure on a nerve, causing sciatica (leg pain) or localised back pain.

Direct injuries may fracture or dislocate the bones in the back, causing the spinal cord to be pinched, and paralysis of the body below that point.

There are discs of rubbery material between each vertebra that act as shock absorbers and allow movement between the discs. These intervertebral discs may be damaged by a sudden injury, gradual deterioration with age or many years of heavy work. A damaged disc may bulge (slipped disc) and press on a nerve as it leaves the spinal cord, to cause pain in both the back and down the course of that nerve. Discitis is an inflammation of the disc that causes local pain without pressing directly on a nerve.

Fibromyositis occurs in large muscles that have been overused and damaged repeatedly by heavy work or exercise. Scattered muscle cells are replaced by fibrous scar tissue to disrupt the structure of the muscle and cause a deep ache that worsens with use.

Osteoporosis is a thinning of the bones that occurs mainly in women after the menopause, due to a lack of calcium in the bones. It may result in bones breaking easily anywhere in the body, but particularly in the back where the weak vertebrae may collapse and cause pain.

Any woman who has been pregnant will confirm the distressing pain that may be caused by that condition. Hormonal changes cause the ligaments throughout the body to slacken, and when this occurs in the back the vertebrae...
Menstrual period pain is a common cause of lower back pain, particularly in younger women who have not been pregnant.

Kidney stones may irritate the kidney to cause a dull ache on one side of the back, but if the stone starts moving down the ureter from the kidney to the bladder, excruciating pain will be felt running from the loin to the groin.

A peptic ulcer in the stomach is caused by the concentrated hydrochloric acid in the stomach penetrating the protective mucus that normally lines the organ, and eating into the stomach wall. Severe pain in the belly or back that is eased by eating, but worse after eating, is common.

Psychological and psychiatric conditions, including anxiety and depression, may cause muscle spasms and inappropriate perception of minor aches and pains that are magnified into a significant problem.

Other causes of back pain include scoliosis (a sideways curvature of the spine), posterior facet syndrome (small joints at back of vertebra are inflamed), Paget disease (in which the bones enlarge and soften in the back, legs and skull), Scheuermann’s disease (an inflammation of the vertebrae in the centre of the back that is common in teenagers), hip disorders (eg. osteoarthritis, poor circulation) may be felt as a pain in the back, diffuse idiopathic spinal hyperostosis (spines on vertebrae) and ankylosing spondylitis (a long-term inflammation of the small joints between the vertebrae in the back).

Cancer from one part of the body to another is called metastatic carcinoma, and the back is one site where these spreading cancers may lodge.

Back pain does not necessarily come from the back. Many diseases of the organs in the chest and belly may cause back pain. Conversely, quite severe damage to the back may cause pain anywhere from the belly to the big toe, without any pain being actually felt in the back.

A woman’s organs of reproduction are a common source of back pain. Infections of the Fallopian tubes (salpingitis) or uterus (pelvic inflammatory disease) may be felt in the back, as may endometriosis, a twisted ovarian cyst, and a prolapsed uterus (uterus slips down into the vagina).

Bald

By far the most common form of baldness is that caused by hereditary tendencies in men (androgenic alopecia). If your father or grandfather was bald, you have a good chance of developing the same problem. Baldness is a gender linked genetic condition that is very rare in women, but passes through the female line to men in later generations. There are no cures available, and none are likely for some time to come.

There are many other causes for patchy or diffuse hair loss including ageing, skin diseases, stress, the menopause, lack of iron or zinc, an under active thyroid gland, drugs (particularly those used to treat cancer) and a dozen or more rare diseases.

Some people, particularly young women, develop patches of baldness that are scattered across their scalp. This condition is known as alopecia, and is very difficult to treat. Many cases settle by themselves after some months or years, but most require prolonged care by a dermatologist.

Almost always male pattern baldness commences with gradual hair loss, starting at the front of the scalp on either side, or in a circular area on top. It is usually accompanied by excess hair on the body due to higher levels of testosterone. The connection between baldness and sexual potency is unproved.

Minoxidil or finasteride tablets, or minoxidil scalp lotion, may slow or stop hair loss, but the only real treatments are hair transplants, scalp flap rotation or a wig.

See also TELOGEN EFFLUVIUM

Beard

The ability to grow a beard is a secondary sexual characteristic, which develops at puberty due to the release of testosterone from the testes. The rate of beard growth is related to testosterone production, and as testosterone levels drop in old age with the andropause, the rate of beard growth and its density also decrease. It is not possible to judge a man’s potency by the thickness of his beard as different genetic and racial factors also affect beard growth, but the more a man thinks about sex, the faster his beard grows. Thinking about sex increases testosterone production, which increases beard growth.

Beard growth in females is due to a hormonal imbalance, particularly around the time of menopause.

Black Cohosh

Black (or blue) cohosh is a perennial herb that is used by naturopaths for the symptoms of the menopause, premenstrual discomfort, painful periods and arthritis. Clinical trials show only limited effectiveness. Its common adverse effect is stomach discomfort, but it has been shown to cause significant liver damage and block electrical signals in the heart in some patients. It may interact with other medications including oestrogen. It should not be used during pregnancy (as it stimulates the uterus), while breastfeeding or in people with heart disease.

See also OESTROGEN
BODY ODOUR

Bromhidrosis is the medical term for an unpleasant body odour.

The body produces two very different types of sweat. About 2.5 million eccrine glands produce sweat all over the body in order to assist in regulating excessive body heat by evaporation, but apocrine glands produce a very different, oilier form of sweat in the armpits, groin, and around the nipples, that contains the sexually attractive pheromones.

Increased sweating obviously occurs with exercise and in hot weather, but it may also increase with stress, and people who are suffering from long term or persistent stress may develop a noticeable body odour that disappears when the stress goes away. The hormonal changes associated with puberty, pregnancy and menopause may also cause a temporary increase in sweating.

Neither form of sweat has any significant smell, but the apocrine sweat is a good breeding ground for bacteria, and it is the break down of the oily apocrine sweat by bacteria that produces most body odour.

Body odour can obviously be controlled by regular bathing, particularly after vigorous exercise, but sometimes this is insufficient and antiseptic soaps that reduce the number of bacteria on the skin is the next step.

Commercial antiperspirants and deodorants containing aluminium or zinc compounds that reduce sweating are the obvious next step. An antiperspirant blocks the pores in the skin and prevents the sweat leaving the skin, while deodorants allow sweat to escape but destroy bacteria or mask smells. Unfortunately, some people find that even these are inadequate.

Cotton clothing breathes better than synthetics, and is less likely to cause the accumulation of sweat and therefore odours. Cotton underwear should always be worn. Laundering clothes regularly, and using an antibacterial additive to the wash may also be helpful.

Hydrogen peroxide can be used to wash the skin in the armpit and groin, but ensure that there are no cuts (it will sting) and avoid the vagina.

Zinc supplements in the diet may help some forms of body odour as it increases the level of zinc in sweat and discourages bacterial growth.

In a small number of cases it is necessary for doctors to prescribe special antibiotics, either as a solution or tablet, that reduce the load of bacteria on the skin. These cannot be used long term, only intermittently.

Some people have a slightly beery smell, despite not consuming large quantities of this intoxicant. In this case a fungal (yeast) infection may be responsible for the odour.

What is an unpleasant body odour to one person may actually be quite attractive to others in some circumstances. This is particularly the case in body odours due to spicy foods as some of the spice may be excreted in the sweat.

Diabetics whose sugar levels are poorly controlled may have an acetone-like (nail polish remover) smell about them. This is a serious sign, and they should be told of the problem and urged to seek immediate medical advice.

Rarely, an ammonia smell may be a sign of severe liver disease.

People with body odour problems may not be aware that they have a problem, so a quiet word to them from a friend, or even a carefully worded anonymous note, may make them aware, so that they can seek a solution.

These people may also have problems in their personal, social, school and work life which may result in loss of friends, school bullying, failing to be promoted and missing social events.

BREAST CANCER

Mammary carcinoma is the technical name for this all too common cancer that affects one in every eleven women at some time in their life.

The absolute cause is unknown but it is more common in women who have a close relative (mother, sister, daughter) with the disease, in women who have not had a pregnancy, have not breast fed, have had a first pregnancy after 35 years, in white women, those who have had uterine cancer, and in higher socio-economic groups. On the other hand, women who start their periods late and those who have an early menopause have a lower incidence of breast cancer. About 2% of all breast cancers occur in men as they have a tiny amount of breast tissue present just under the nipple.

Extraordinarily, left-handed women have double the risk of developing breast cancer compared to those who are right handed.

The symptoms are a hard, fixed, tender lump in the breast. The nipple skin itself can become cancerous (Paget’s disease of the nipple) causing a thick, firm, rubbery feeling to the nipple. There are many other causes of lumps in the breast and less than one in ten breast lumps examined by a doctor is cancerous.

One method of detecting breast cancer is monthly self-examination. The diagnosis is confirmed by an x-ray mammogram, ultrasound scan of the breast and needle biopsy.

The most common form of treatment is a lumpectomy in which only the cancer itself is removed, but if it is too large for this procedure a simple mastectomy, in which only the breast is removed, may be performed, leaving a cosmetically acceptable scar and scope for later plastic reconstruction of the breast. Often the lymph nodes under the arm will be removed at the same time. A course of radiotherapy and/or chemotherapy (drugs) may also be given. Tamoxifen,
letrozole, cyclophosphamide, 5-fluorouracil, anastrozole, trastuzumab and toremifene are some of the antineoplastic drugs that may be considered. Preventive chemotherapy with medications such as tamoxifen or trastuzumab may be continued for years.

A radical mastectomy in which the breast, underlying muscle and all the lymph nodes in the armpit and other nearby areas are all removed is done rarely, and only for very advanced cancer.

More than 3/4 of all patients with breast cancer can now be cured. In early cases the cure rate rises to over 90%. In advanced cases the cancer may spread to nearby lymph nodes, the lungs and bones.

See also NIPPLE DISCHARGE

BREAST ENLARGED

Breasts are normally a female characteristic, developing at puberty in the early teenage years, but any human, of any age or either sex, is able to develop breasts if given the sex hormone oestrogen. Those men who have decided to change their apparent sex, and those who wish to be transvestites, may take oestrogen in order to develop breasts, but there are a number of medical conditions that can also cause gynaecomastia (abnormal breast enlargement).

Some boys going through puberty find that they are developing small lumps of tissue behind their nipples. This is caused by an imbalance in the sex hormones during this delicate stage of development. Most settle in a few months or a year, but a small number continue to develop excessive amounts of breast tissue and require an operation to remove it.

In men the menopause (andropause) occurs in the seventies, while in women it occurs in the late forties and early fifties. As testosterone levels drop in elderly men, the small amount of oestrogen that is present in the system of all men, may no longer be suppressed by the testosterone, and start stimulating breast tissue development.

Women taking oestrogen as a hormone replacement therapy after the menopause, or in the oral contraceptive pill, may notice an increase in their breast size.

Obesity is an often overlooked cause for breast enlargement in both sexes, as fat may deposit in the breast area more easily than in the surrounding chest tissue.

Other causes of breast enlargement include liver failure (oestrogen normally produced by a man or woman may not be broken down and removed from the body at the normal rate), cancer or tumours of the testicle may prevent the normal production of testosterone, or in some cases (eg. teratoma) may start to produce oestrogen instead, Klinefelter syndrome (only affects males who have additional X chromosomes matched with a single Y chromosome), Addison's disease (adrenal glands do not produce sufficient quantities of vital hormones), and a rare form of lung cancer (oat cell carcinoma) will affect sex hormone balance and cause breast enlargement in both sexes.

BREAST PAIN

The medical term for breast pain is mastalgia. There are many possible causes for mastalgia.

Any direct injury or blow to the breast may cause bruising and pain.

Many women experience painful tender breasts for a few days before each menstrual period. If this becomes a significant problem, medications are available to ease the discomfort.

In early pregnancy, one of the first signs of the pregnancy, other than missing a menstrual period, may be unusually sore and enlarged breasts.

The hormonal disturbances of the menopause may over stimulate breast tissue to cause varying soreness. In the same way, excess oestrogen in hormone replacement therapy or the contraceptive pill will have the same effect.

Infections in the breast (mastitis), particularly during breastfeeding, will cause hard, tender, painful, red lumps. If left untreated, an abscess may develop in the breast tissue.

Breast cancer may present as a painful lump in the breast, but sometimes there may be a firm painful area behind the nipple, with virtually no lump that can be felt. Large breasted women may not be able to feel a cancerous lump, but may experience pain on pressing on the affected area.

BRUISE

A bruise (ecchymosis or haematoma in medical jargon) occurs when part of the body is struck by a blunt object to cause rupture of blood vessels under the skin, when internal structures rupture blood vessels by their movement (eg. a fracture of a bone), blood vessels are ruptured by over stretching when a joint is overextended (eg. a severe sprain), or blood fails to clot rapidly when a blood vessel receives minor damage.

If an artery ruptures, a bruise will form very rapidly, with swelling and a blue/black tinge to the overlying skin. A bruise develops more slowly, and with less swelling if a vein ruptures. It is far harder to rupture a muscular, thick walled artery than a thin walled vein. Blood under pressure can track its way between layers of tissue so that bruising may occur not only at the site of the injury, but some distance away (eg. a kick to the calf may cause a spot bruise on the calf, but a day or two later bruising may appear around the ankle).

Patients on medication (eg. warfarin) which is prescribed to reduce the speed at which blood clots form (to prevent strokes or heart attacks), will bruise far more easily than normal people. Aspirin, anti-inflammatory medications (for
arthritis) and other less commonly used drugs may also increase bleeding, and therefore bruising.

Women bruise more than men, particularly around the menopause, because hormonal changes may make blood vessel walls weaker, and allow them to rupture easily. Many women complain of multiple small bruises on their arms and legs, in places where they cannot recall any significant injury.

Other common causes of abnormal bruising include thrombocytopenia (a lack of platelets in the blood), Cushing syndrome (over production of steroids in the body, or taking large doses of cortisone), and leukaemia (cancer of the white blood cells).

When a bruise is likely, or first develops after an injury, the affected area should be cooled with ice, elevated and rested. The ice should not be applied directly to the skin, but wrapped inside a cloth. Elevation of the area reduces the pressure in the veins, and slows blood loss from the ruptured blood vessel. Any exercise or movement involving an area with a ruptured blood vessel will force more blood out into the tissues.

With time and rest the swelling will reduce, the bruise will go from blue/black to purple, brown and finally yellow before disappearing. There may be some residual swelling and firmness at the bruise site due to the formation of fibrous scar tissue and the skin over the area may dry out and flake off.

If there is no apparent cause for a bruise, medical advice should be sought.

CHANGE OF LIFE
The term "change of life" is used as a euphemism for the menopause.

CHORIONIC GONADOTROPHIN, HUMAN
Beta human chorionic gonadotrophin (beta HCG or HCG) is secreted by the placenta. The blood level rises to a peak at 10 weeks of pregnancy, and then slowly declines. Its presence can be used as a diagnostic test for pregnancy, but can only be detected at least ten days after conception. Its presence also acts as a reliable marker for certain cancers of the ovary and testes. The interpretation of blood levels are as follows:-
- Less than 10 IU/L - normal non-pregnant.
- 20 to 100 IU/L - 1 to 2 weeks after pregnancy commences, or menopause
- 100 to 6000 IU/L - 3 to 4 weeks of pregnancy, or after 6 months of pregnancy, or cancers of ovary or testicle (embryonal carcinoma or choriocarcinoma).
- 6000 to 30,000 IU/L - increases between weeks 7 and 30 of pregnancy, and then slowly decreases.
- Over 30,000 IU/L - increased risk of Down syndrome (mongolism).

Most HCG tests for pregnancy are performed on urine. The tests indicate whether the HCG is over a threshold level of HCG and merely indicate a positive or negative result. False positive results can occur with cancers of ovary or testes (seminomas, choriocarcinoma) or placental tumour (hydatidiform mole). False negatives are far more common and can occur with very dilute urine, if the pregnancy has not progressed far enough to produce sufficient HCG or with kidney diseases. The peak level of urine HCG is reached at 10 weeks pregnancy, after which it declines, so a urine pregnancy test after about 20 weeks of pregnancy may be negative.

Chorionic gonadotrophin can also be injected as a medication in the treatment of infertility in women, delayed puberty in girls, failure of testicular development and failure of sperm production. It may result in multiple pregnancies and may cause fluid retention. It must not be used by patients suffering from some types of cancer affecting the sex organs.

Although chorionic gonadotropin has been prescribed to help some patients lose weight, it should never be used this way. When used improperly, chorionic gonadotropin can cause serious problems.

CLIMACTERIC
The term "climacteric" is an old fashioned one for the menopause.

CYPROTERONE ACETATE
The antiandrogen (acts against testosterone) hormone cyproterone acetate (Androcur) is used alone in women to treat excessive body hair, loss of scalp hair and severe acne in women, and in men for the reduction of sexual drive, premature puberty and cancer of the prostate gland. It is combined with ethinylestradiol in some contraceptive pills (eg. Diane) to control acne and oily skin, as well as a being a contraceptive; and with oestradiol valerate to ease the symptoms of the menopause.

It is not to be used in pregnancy or breastfeeding and adequate contraception must be used in sexually active women. Do not take it if suffering from severe liver disease, blood clots, sickle cell anaemia, severe depression or diabetes. It is not to be used in prepubertal girls and is for use in boys only if medically indicated. Use cyproterone with caution in those with diabetes and liver tumours.

The side effects may include male infertility, reduced libido, tiredness, increased weight, nausea, headache and irregular menstrual periods. Less commonly breast enlargement in men, depression, breast milk production, sleeplessness and hot flushes may occur. There is an increased risk of developing a blood clot (deep vein thrombosis).
DEPRESSION

Depression is also known as an affective disorder, melancholia, hypothyrdia or a nervous breakdown. It is a medical condition, not just a state of mind that affects 30% of people at some time in their life. Patients are not able to pull themselves together and overcome the depression without medical aid, although a determination to improve the situation certainly helps the outcome.

Depression may be a symptom (having a bad day and feeling sad), personality type (inherited with the genes), reaction (depressed because of loss of job, death in family etc.) or a disease (depression due to chemical imbalances in the brain). It is usually a mixture of several of these.

There are two main types of depression, endogenous and reactive, with very different causes.

Endogenous depression has no obvious reason for the constant unhappiness, and patients slowly become sadder and sadder, more irritable, unable to sleep, lose appetite and weight, and feel there is no purpose in living. They may feel unnecessarily guilty, have a very poor opinion of themselves, feel life is hopeless and find it difficult to think or concentrate. After several months they usually improve, but sometimes it can take years. It is due to an imbalance of the chemicals (neurotransmitters) that normally occur in the brain to control mood. The neurotransmitters include serotonin, noradrenaline and dopamine. If too little of any one is produced, the patient becomes depressed - if too much, the patient may become manic.

Endogenous depression can be further subdivided, depending on the combination of neurotransmitters that are too low. The subtypes are:-

<table>
<thead>
<tr>
<th>Type</th>
<th>Neurotransmitter level too low</th>
<th>Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-melancholic depression</td>
<td>Serotonin</td>
<td>Obsession, panic, compulsions, anxiety</td>
</tr>
<tr>
<td>Non-psychotic melancholia</td>
<td>Serotonin, noradrenaline</td>
<td>+ lack of energy, tired</td>
</tr>
<tr>
<td>Psychotic melancholia</td>
<td>Serotonin, noradrenaline, dopamine</td>
<td>+ unmotivated, no pleasures, lack of concentration, no insight</td>
</tr>
</tbody>
</table>

Those patients with endogenous depression are not able to pull themselves together and overcome the depression without medical aid, but doctors can alter the abnormal chemical balance by giving antidepressant medications. When they do start to improve, some patients with depression go too far the other way and become over-happy or manic. These patients are said to be manic depressive, have bipolar personality (generally severe swings of mood) or cyclothymic disorder (milder mood changes).

Reactive depression is the sadness that occurs after a death in the family, loss of a job, a marriage break-up or other disaster. Patients are depressed for a definite reason, and with time, will be often be able to cope with the situation, although some patients do require medical help.

Patients who are severely affected by depression are described as having a major depressive disorder.

There are no diagnostic blood tests or brain scans to prove these diagnoses, and the final diagnosis depends on the clinical acumen of the doctor.

There are many other causes of depression that overlap between the two types above or have totally independent causes.

The elderly often become depressed because they are confused, ill, unable to sleep as well as they would like, in discomfort, have no pleasure in life and can see no future. A change in attitude, environment and a bit of medication may often change their outlook dramatically.
The hormonal changes associated with pregnancy and menopause are often triggers for significant clinical depression. Postnatal depression usually occurs just after the birth of a child, with the sudden drop in the level of hormones. The mother feels inadequate, helpless and unable to cope. Urgent medical assistance is vital. In the menopause, the varying hormone levels may cause wide variations in mood that can be corrected by hormone replacement therapy.

Many women find that the normal sex hormone variations during the month will also cause mood changes, with depression and irritability being particularly common just before a menstrual period (premenstrual tension - PMT).

Many other diseases may have depression as a component, but doctors must be careful to differentiate between depression caused by the disease process itself, and depression in the patient because they are upset at having the disease.

Possible medical causes for depression include a tumour, cyst, abscess, cancer or infection of the brain; a stroke (cerebrovascular accident); hypothyroidism (a lack of thyroxine); Parkinson disease (a degeneration of part of the brain that co-ordinates muscle movement); serious viral infections (eg. AIDS, hepatitis, influenza, glandular fever); pernicious anaemia; systemic lupus erythematosus (an autoimmune disease); multiple sclerosis (a nerve disease that can affect any nerve in the body in a random and intermittent way); and abnormalities in the levels of potassium, sodium, bicarbonate and chloride (electrolytes) in the blood due to kidney or other diseases.

A number of medications, including cortisone, methyldopa (used for high blood pressure), beta-blockers (used for heart disease) and various hormones (including the contraceptive pill) may have depression as a side effect.

There are many rarer medical causes of depression.

Some patients can benefit from counselling and behaviour therapy by either a doctor or a psychologist, and sometimes these are all that is required to help their depression, but these may also be combined with medication. Having a pet dog to care for (and who loves for the patient in return) can often be therapeutic.

Numerous medications (antidepressants) that control the production or activity of the depressing chemicals in the brain are available to treat depression, but most antidepressant drugs work slowly over several weeks. Hospitalisation in order to use high doses of drugs or other treatments, and to protect the patient from the possibility of suicide, is sometimes necessary when the disease is first diagnosed. The other form of treatment used is shock therapy (electroconvulsive therapy - ECT), which is a safe and often very effective method of giving relief to patients with severe chronic depression.

Untreated depression may lead to attempted or actual suicide, which can be seen as a desperate plea for help.

Depression is not a diagnosis that patients should fear, as medication and counselling by a general practitioner, psychologist or psychiatrist will cure or control the vast majority of cases.

**ECTASIA**

Ectasia is an abnormal dilation, distension or increase in size. Often used with reference to over dilated milk ducts in the breast (mammary duct ectasia) due to the collection of secretions in these ducts after the menopause.

**ESTROPIPATE**

Estropipate is a sex hormone used for hormone replacement treatment after the menopause in women. It should normally be combined with a progestogen unless the woman has had a hysterectomy.

It should not to be used in pregnancy, breastfeeding or children, but accidental usage in these situations unlikely to be harmful. It should be used with caution in patients with epilepsy, migraine, heart failure, high blood pressure, kidney disease, diabetes, porphyria or uterine disease. It should be totally avoided in patients with liver disease, breast or
genital cancer, or a history of blood clots. Side effects may commonly include abnormal uterine bleeding, vaginal thrush, nausea, fluid retention, weight gain and breast tenderness. Unusual side effects may include a rash, blurred vision, vomiting, bloating, intestinal cramps and pigmentation of the skin on the face. Severe but rare side effects include blood clots, calf or chest pain and yellow skin (jaundice).

It interacts with other sex hormones, and smoking increases risk of serious side effects. Currently estropipate has only limited distribution around the world.

See also OESTROGEN

FERTILITY
Fertility is the ability of either a man or woman to conceive a child. It commences with puberty, rapidly reaches a peak, then slowly declines to the menopause in women and at a later age, the andropause in men. Even if a woman is menstruating regularly at the age of 50, her fertility is greatly reduced due to the inability of eggs (ova) to be successfully released with each menstrual cycle. A woman’s fertility starts to reduce markedly from about 38 years of age, and by 50 is down to 1% (ie. a one in 100 chance of falling pregnant in a year with regular sex and no contraception).

See also OVARY

FIBROIDS OF THE UTERUS
The uterus (womb) is made up of muscular, fibrous and glandular tissue. After childbirth, the uterus shrinks back to its usual size, but the stress on the uterus during pregnancy may result in some minor injury to the fibrous tissue in its wall, and after the uterus shrinks, it may repair itself in an abnormal way by the formation of one or more hard fibrous balls in the wall of the uterus. These are fibroids.

When the uterus contracts to force out the blood and wastes during a period, the fibroids distort the uterus causing painful cramps and sometimes heavy menstrual bleeding. Fibroids can usually detected on pelvic examination, but the diagnosis may be confirmed by an ultrasound scan of the abdomen, laparoscopy or special x-rays of the uterus.

The treatments available include a hysterectomy to completely remove the uterus, or if the woman wishes to have more children, the individual fibroids can be removed from the uterus.

See also UTERUS

FLUSH, ABNORMAL
A flush is a brief episode of facial redness and warmth. Many people have a facial flush (redness and hot feeling) when they are embarrassed, and this is a completely normal characteristic, particularly in women with fine skin. Abnormal flushes may occur occasionally, or may be almost constant.

The menopause is a very common cause of sudden, unexpected flushing when sex hormone levels surge instead of being released at in a very slowly varying pattern. The woman usually feels the flush far more than others can see it as the skin in women of this age has usually thickened somewhat over the years, particularly if they live in a sunny climate.

Sex hormone treatment can also cause abnormal flushing, particularly if the dosage is incorrect.

Excessive indulgence in alcohol can cause obvious flushing that may persist for several hours after over imbibing. Repeated excessive use of alcohol can result in liver and blood vessel damage that causes a persistent red face that is not specifically flushing.

A fever of almost any cause can cause flushing that lasts for hours or days.

Other causes of flushing may include an overactive thyroid gland (hyperthyroidism), a severe allergy reaction (anaphylaxis), Cushing syndrome (caused by over production in the body, or over use, of cortisone), phaeochromocytoma (tumour of the adrenal glands that causes very high blood pressure), Pepper syndrome (a cancer
of the adrenal glands), diseases of the hormone controlling pituitary gland in the centre of the brain, impaired drainage of blood from the head caused by narrowing of the major veins in the neck or upper chest, and the carcinoid syndrome (characterised by diarrhoea, palpitations and wheezing).

FOLLICLE STIMULATING HORMONE

Follicle stimulating hormone (FSH or follitropin) is a sex hormone produced naturally in the pituitary gland under the brain. It acts with luteinising hormone to stimulate the production of eggs in women (ovulation) and sperm in men.

The level of FSH in blood can be measured. The normal ranges are:-

<table>
<thead>
<tr>
<th>Age/Cause</th>
<th>Normal Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Before puberty</td>
<td>0 to 3 IU/L.</td>
</tr>
<tr>
<td>Adult female</td>
<td>1 to 9 IU/L.</td>
</tr>
<tr>
<td>Female at ovulation</td>
<td>10 to 30 IU/L.</td>
</tr>
<tr>
<td>After menopause</td>
<td>40 to 200 IU/L.</td>
</tr>
<tr>
<td>Adult male</td>
<td>1 to 5 IU/L.</td>
</tr>
</tbody>
</table>

A low level in the blood may be due to Stein-Leventhal syndrome and may be a cause of infertility. A very high level may be due to disease or failure of the testes or ovaries. Levels normally rise at mid-cycle in ovulating women.

It may be used as an injectable medication to treat female and male infertility. Common side effects include nausea, diarrhoea and headache, while less common ones may include multiple pregnancies, breast tenderness and/or enlargement, acne and weight gain.

See also GONADOTROPHINS; LUTEINISING HORMONE; OVARY; PITUITARY GLAND

FRIGIDITY

Frigid is a term, now outdated, usually intended to describe a woman who is unable to experience any pleasure or arousal from sexual stimulation. Anorgasmia is a term used to indicate an inability to have an orgasm. Frigidity is usually a psychological problem and not a physical one, and may be the result of a woman's strict upbringing, a loathing for sex that has been conditioned by an oppressive mother or violent father, an unfortunate early sexual experience, an unwanted pregnancy, a rape or other assault. Other causes include pain with intercourse, postnatal depression after birth, life stress (eg. moving house or changing jobs), and the hormone drop associated with menopause. Certain prescribed drugs and hormones may also be responsible.

With sexual stimulation there is no lubrication of the vagina, enlargement of the nipples or clitoral tenseness. In extreme cases it may be responsible for infertility.

Treatment requires a very understanding partner and a very slow teaching process, usually with the help of a psychiatrist or psychologist. Stimulation of non-erotic parts of the body to relax the woman over a period of weeks, followed by stimulation of more erotically sensitive areas, slowly breaks down the barriers. Most women respond to appropriate treatment after many sessions over several months.

See also LIBIDO LACKING

GENITAL ITCH

The genitals (penis and scrotum in the male, vulva and vagina in the female) may become itchy for similar, or totally different reasons in males and females.

Any skin condition that causes itching can also affect the genital skin. Common examples are eczema, reactive dermatitis and psoriasis.

If you have an itch of any cause, and scratch it, the scratching will further irritate the skin, leading to yet more itching and scratching. The condition becomes self perpetuating, although the cause of the original itch has long gone. If it itches, do NOT scratch it!

Excessive sweating in an area that is usually well covered and constricted by clothing is a common cause of skin irritation and itching. The damaged skin may become infected by fungi and/or bacteria to cause a painful, oozing rash. Prevention is better than cure, and regular washing of the area when sweaty, loose clothing and cotton underwear (nylon may look sexy, but is not good for skin) can all help.

Other causes common to both sexes include an allergy reaction (eg. to soaps, clothing, antiperspirants, toiletries, perfumes, contraceptive creams, lubricants etc.), infestation of the pubic hair (eg. with scabies, lice or crabs), genital herpes, genital warts (caused by the human papilloma virus) and poorly controlled diabetes (due to excessive sweating and superficial infections of the affected skin by fungi and bacteria).

Psychiatric conditions, including depression, may often include itching of the more private parts of the body as one of their symptoms. This may be because the mind becomes focussed inwards, magnifying minor irritations, and excluding the outside world.

Conditions that may cause genital itching in women include thrush (fungal infection of the vagina), vaginal infections by bacteria or parasites (eg. Trichomonas), excessive natural vaginal secretions (leucorrhoea often due to excess
oestrogen), infection of the bladder (cystitis), urinary incontinence (urine can irritate the genital skin), cancer of the vulva may first be noted as a hard area of itchy skin, and a lack of oestrogen in older women after the menopause can cause the vagina to become dry and itchy. The burning vulva syndrome is a rare condition that causes exquisite tenderness and itching of the vulva, but its cause is unknown.

In men a genital itch may be due to fungal and bacterial infections under the foreskin of the penis, venereal diseases that cause a penile discharge (eg. gonorrhoea, chlamydia) and rarely cancer of the penis.

See also ANAL ITCH; SKIN ITCH and separate entries for diseases mentioned above.

HAIR LOSS
A healthy adult loses at least 100 hairs a day from their head, so only excessive hair loss above this level is abnormal. Hair may be lost in small patches (alopecia areata), large areas (alopecia totalis, baldness), or there may be diffuse loss of hair from all over the head (telogen effluvium).

The most common type of hair loss is male pattern baldness, which may start in the late teens and progress to total loss of all scalp hair. There is a strong hereditary tendency in this condition, which cannot be reversed.

Diffuse hair loss (telogen effluvium), when the person notices large quantities of hair coming out in their brush or comb, is a common and distressing problem, but must be very severe before anyone else notices the problem. It occurs more in women than men, and may be related to the menstrual cycle, with more hair loss occurring at certain times of the month. Prolonged stress and anxiety, or a sudden severe shock (eg. death in the family) may trigger significant hair loss. The menopause is another time when dramatic hair loss may occur, but this stabilises once the menopause is passed. There is not usually a permanent loss of hair in these cases, but the hair becomes more fragile at its root, and breaks away from the scalp. The number of hair follicles remains the same though, and the site where a hair breaks off immediately starts producing more hair.

The hair density tends to decrease with age, and an older people will have fewer hair growing follicles on their scalp than when they were young. This occurs far more after the menopause, which in women occurs about twenty years earlier than in men. Unfortunately there is nothing that can be done to reverse this process, but there are products available which will thicken the remaining hair to make it appear that more is present.

A sudden loss of weight, either by diet or disease, is often associated with diffuse hair loss.

After pregnancy, the combination of a sudden change in hormone levels with the delivery of the baby and breast development for milk production, and the physical and mental stress of looking after and breastfeeding an infant, may result in diffuse hair loss.

Alopecia areata causes a small area of the scalp to be completely hairless. The area starts as just a tiny patch, but may slowly spread to result in hairless patches a few centimetres across. In the worst case, the entire scalp may be affected (alopecia totalis). There is often no apparent cause, but sometimes extreme stress, psychiatric disturbances and drugs may be found responsible.

Less common causes of hair loss include fad diets lacking in essential nutrients (eg. proteins, iron, zinc), diseases of the hormone secreting glands of the body (eg. pituitary gland in the brain, thyroid gland in the neck, testes and ovaries), autoimmune diseases in which the body inappropriately rejects some of its own tissue (eg. systemic lupus erythematosus), excessive intake of vitamin A either as vitamin supplements or eating large quantities of orange coloured foods (eg. carrots, pawpaw) and diabetes mellitus.

Drugs used to combat cancer are well known to cause serious hair loss, often involving the entire scalp, but other drugs may also cause the problem, although usually not as significantly. Examples include anticoagulants that prevent blood clots (eg. warfarin), lithium (for psychiatric conditions), beta-blockers (for heart disease and high blood pressure) and the oral contraceptive pill.

There are many rarer causes of scalp hair loss, some of which include liver failure, uraemia (kidney failure), tumours or cancers anywhere in the body (particularly those involving the testes or ovaries), trichotillomania (psychiatric condition in which the patient pulls out handfuls of their own hair), loose anagen syndrome and Fröhlich syndrome.

See also BALD

HEADACHE
A headache is probably the most common symptom to be experienced by mankind, and may be associated with problems of any of the multiple complex structures in the head, or disorders of many of the body's other organs. Fatigue, stress and anxiety may in themselves cause a headache, or may trigger muscle spasms in the temples and scalp that are responsible for the pain.

Any infection, by a bacteria (eg. tonsillitis, sinusitis, ear infection, bronchitis, urinary infection), virus (eg. influenza, common cold, glandular fever, hepatitis), fungus or parasite (eg. malaria), may cause a headache, as may a fever of any cause.

Injury to any part of the head may cause a headache, but sometimes, and very seriously, the headache may occur some days after the injury due to slow bleeding from a leaking vein within the skull.

A headache is more significant when not associated with any other symptoms elsewhere in the body. The most
common headaches to fit into this category are tension headaches, migraine and cluster headache.

A tension (muscle spasm) headache causes a dull, persistent pain with varying intensity that is often described as a pressure or tightening around the scalp. It occurs as a localised band around and across head, and is not aggravated by exercise or alcohol. The muscles at the top of the neck, in the forehead and over both temples go into prolonged contraction, which tightens the scalp, causing pressure on the skull, and further increases the strain on the muscles. Tension headaches are episodic, often in association with stress. Depression and anxiety are common accompanying symptoms. The pain may last for 30 minutes or a week. Muscle spasm headaches usually have a cause (eg. stress, infection, psychiatric disturbance, eye strain), and if possible this should be rectified. Simple medications such as aspirin or paracetamol, sometimes in combination with muscle relaxants, are readily available to ease both the muscle spasm and pain. Commericially available combinations (eg. Fiorinal, Mersyndol, Panalgesic) are useful in the short term, but often cause drowsiness. Mild heat and massaging the tense muscles will give temporary relief. Relief of chronic anxiety by talking through the problems with a doctor or counsellor, accepting help to deal with a stressful situation, and using an anti-anxiety medication may also be useful.

**TENSION HEADACHE**

Migraines are often associated with visual symptoms including flashing lights, shimmering, seeing zigzag lines and loss of part of the area of vision. They usually occur on only one side of the head, are described as throbbing, and cause intolerance of exercise, light and noise. Nausea and vomiting are common. Migraines occur periodically, and may last for a few hours to several days. The patient often looks pale and drawn.

**MIGRAINE**

Cluster headaches are not common, but cause a very characteristic pattern of headache, usually associated with excess sweating of one or both sides of head. They occur in episodes once or twice a year to cause severe pain around or behind one eye, which spreads to a temple, the jaw, teeth or chin. They often begin during sleep, and other effects may include a red, watery eye, drooping eyelid, altered pupil in the eye, stuffy nose and flushed face. Cluster headaches may be triggered by alcohol, temperature changes, wind blowing on the face or excitement. They usually last for 15 minutes to three hours, and are named because of their tendency to occur in clusters for several weeks.

**CLUSTER HEADACHE**

Many people fear that their headache may be due to a brain tumour, but this is actually very rare, most brain tumours causing other symptoms that lead to their diagnosis well before a headache develops. Cancerous and benign tumours may develop not only in the brain tissue itself, but also in the other structures within the skull such as the pituitary gland, membranes around the brain (meninges), sinuses and eyes. Most brain tumours are benign and can be cured by surgery.

Anything that puts abnormal pressure on the brain may cause headaches. An abscess caused by an untreated infection in the brain or an injury that penetrates the skull, is one possibility. Bleeding inside the skull caused by an injury or rupture to a blood vessel is another. An aneurysm is the ballooning out of one side of an artery. The aneurysm may put pressure on the brain to cause a headache, or rupture to cause very severe effects on the brain function.

Viral or bacterial infections of the brain (encephalitis) or surrounding membranes (meningitis) will almost invariably cause a headache.
Inflammation of nerves in the scalp and face may appear to be a headache, when really it is the tissue outside the skull that is affected. Trigeminal neuralgia is one relatively common example, as is the pain of neuralgias associated with pinched nerves in the neck that spread from the base of the skull up the back of the head and as far forward as the hairline.

Psychiatric disorders as varied as phobias (abnormal fears), depression, post-traumatic stress disorder and excessive anxiety may cause headaches.

Other common causes of headache include eye disorders that vary from increased pressure within the eye (glaucoma) to poor vision (resulting in eye muscle strain) and inflammation of the eye (iritis); menopause, menstrual periods (prenatal menstrual tension), contraceptive pills, pregnancy and other fluctuations in the level of the sex hormone estrogen; sexual intercourse may result in a headache, either with arousal or orgasm/ejaculation; inflammation or infection of the teeth (eg. abscess or dental decay), jaw joint (eg. arthritis), neck (eg. arthritis or ligamentous strain), nose (eg. large polyp) or sinuses (eg. polyp or infection); cancer of any tissue in the body may cause headaches due to the release of toxins into the blood (eg. leukaemia); an under active and over active thyroid gland (hypothyroidism and hyperthyroidism); diseases of other glands (eg. adrenal glands, testes, parathyroids); extreme high blood pressure (eg. phaeochromocytoma) and anaemia (a lack of haemoglobin and/or red blood cells).

A wide range of medications (eg. for control of high blood pressure, epilepsy and cancer) may cause headache as a side effect.

Uncommon causes of headache may include SUNCT syndrome (variant of cluster headache), poorly controlled diabetes (either high sugar levels from lack of treatment, or low blood sugar from excess medication), severe allergy reactions (anaphylaxis), acromegaly (thickening and enlargement of the bones in the skull and legs), cyclic vomiting syndrome (episodes of vomiting associated with severe headache), Cushing syndrome (over production or over dosage of steroids), low blood pressure (eg. from excessive medication, sudden change in position, shock or fright), failure or inflammation of any of the body’s major organs (eg. kidneys, spleen or liver), pre-eclampsia (severe complication of pregnancy that is associated with a rise in blood pressure), autoimmune diseases (eg. systemic lupus erythematosus, rheumatoid arthritis, scleroderma), inflammation of arteries in the neck (carotidynia) or temples (giant cell or temporal arteritis), chronic paroxysmal hemicrania (episodes of headache on one side only), Paget’s disease (softening of bone throughout the body), toxic shock syndrome and many other causes that have not been included, because almost any abnormality in the body may result in some kind of headache as our brain, or its surrounding structures, perceives the disorder in body function.

HIRSUTISM

Hirsutism (or hypertrichosis) is the medical term for the presence of excess body hair in both sexes, and facial hair in women.

There are obvious racial and family reasons for a hairy body, with some races and families carrying genes that predispose to the growth of hair on the chest, belly, back, buttocks, arms and legs. Facial hair in men also varies between races, with southern Asians having a scanty beard, while northern Europeans can grow a thick bushy beard.

Hair is normally present on all areas of skin except the palms and soles. Hirsutism is often the presence of coarse dark coloured hair rather than fine body coloured hair.

At puberty, both sexes develop hair on the lower abdomen above the genitals and in the armpits, but sometimes excessive hair growth may occur in other areas, including the face of girls. This problem usually settles down over a few years as the hormone levels stabilise.

The menopause, and associated hormonal changes, may see the growth of hair on the face and chest of women. Women whose periods cease for no apparent reason may be suffering from a hormonal imbalance that results in hirsutism. Other women naturally have a hormonal makeup that allows normal menstrual periods and fertility, but still inappropriately stimulates body and facial hair growth.

Other causes of hirsutism include tumours and diseases of the pituitary gland in the brain, tumours or injury of the testes or ovaries, failure of the thyroid gland in the neck to produce sufficient thyroxine (hypothyroidism), starvation, severe psychological stress (may affect hormone production), the Stein-Leventhal syndrome (causes multiple cysts in the ovaries to affect their function), Cushing syndrome (over production, or excessive use of cortisone), Achard-Thiers syndrome (postmenopausal women with diabetes) and foetal alcohol syndrome (babies born to alcoholic mothers).

Numerous medications, including cortisone, oral contraceptive pills, minoxidil, diazoxide, streptomyacin, muscle building anabolic steroids, phenytoin and metoclopramide, may have hirsutism as a side effect.

Anyone with hirsutism for no obvious cause should have the condition investigated. Most forms can be successfully treated by dealing with the cause, or using medications that reduce the growth of body hair (eg. spironolactone, antiandrogens). Individual hair electrolysis permanently removes that particular hair.

HORMONE

Hormones are chemicals that move from the producing gland directly into the blood, to act upon every cell in the body and affect the function of cells. They are produced naturally in the body by many different glands, including the
thyroid and parathyroid glands (in the neck), the pancreas (in the abdomen), the pituitary gland (in the brain), the adrenal glands (on top of the kidneys), the ovary and testes (sex hormones). Most of these are listed under their individual type of hormone (eg. sex hormones).

Hormones are chemicals that travel from the producing gland, directly into the bloodstream, and then around the body. They reach and act upon every cell in the body through the bloodstream.

The thyroid gland in the neck produces the hormone thyroxine, which acts to control the rate at which every cell in the body works. It is the accelerator of the body. If thyroxine is lacking, the patient becomes tired and slow. This is a common condition in middle-aged and elderly women. The thyroid hormone not being produced by the thyroid gland can be given as a tablet (thyroxine) by mouth. If used at the correct dosage, as determined by regular blood tests, there should be minimal side effects.

The pituitary gland produces a range of hormones, most of which control other glands. The pituitary gland is therefore the “conductor” of the glandular and hormonal ‘orchestra’ of the body.

There are more than a score of hormones in the body, many of which are composed of several subtypes, but the most common are shown in the following table.

**HORMONE** | **SOURCE** | **FUNCTION**
---|---|---
Adrenocorticotrophic (ACTH) | Pituitary gland | Controls level of steroid production by the adrenal glands.
Antidiuretic (vasopressin) | Pituitary gland | Controls blood pressure, contraction of intestine, contraction of uterus and urine production.
Calcitonin | Thyroid gland | Balances parathormone to control calcium and phosphate levels.
Follicle stimulating (FSH) | Pituitary gland | Controls sperm production in males and egg (ova) production in females.
Gastrin | Stomach | Stimulates production of hydrochloric acid in the stomach.
Glucagon | Pancreas | Controls release of glucose into the blood from the liver.
Glucocorticoid (steroids) | Adrenal glands | Regulate carbohydrate, fat and protein levels in the body, affect muscle tone, aid in blood pressure control, stimulate healing, reduce inflammation and allergy responses, and shrink lymphatic tissue. Includes cortisol, cortisone and corticosterone.
Insulin | Pancreas | Controls glucose levels in cells and blood.
Luteinising (LH) | Pituitary gland | Controls ovulation and menstruation in female and testosterone production in males.
Oestrogen | Ovaries | Causes female sexual features to develop and controls menstruation.
Parathormone | Parathyroid glands | Controls balance of calcium and phosphate in blood and bones.
Placental lactogen | Placenta | Controls supply of nutrition to the foetus.
Progesterone | Ovary, placenta | Controls lining of uterus (endometrium).
Prolactin | Pituitary gland | Controls milk production in the breasts.
Releasing hormones | Hypothalamus | Stimulates release of hormones from anterior pituitary gland.
Secretin | Duodenum | Stimulates pancreas to release specific digestive fluid.
Somatostatin | Hypothalamus | Causes growth hormone, thyroxine, insulin and gastrin production.
Testosterone | Testes | Causes male sexual features to develop.
Thyroxine | Thyroid gland | Controls the metabolic rate of the body.
Thyroid stimulating (TSH) | Pituitary gland | Controls the function of the thyroid gland.

See also OVARY; PITUITARY GLAND; SEX HORMONES

**HORMONE REPLACEMENT THERAPY**

Sex hormones are produced by the ovary in the woman, and the testes in the man, to give to each sex its characteristic appearance.

In women, the sex hormone oestrogen that is produced for the first time at puberty causes breast enlargement, hair growth in the armpit and groin, ovulation, the start of menstrual periods and later act to maintain a pregnancy.

If the sex hormones are reduced or lacking, these characteristics disappear. This happens naturally during the female menopause. After the menopause, the breasts sag, pubic and armpit hair becomes scanty, and the periods cease due to the lack of sex hormones.

Hormone tablets are the main method of menopause control. While passing through the menopause, it is usual to take one hormone (oestrogen - eg. Premarin) for three weeks, and a different hormone (progestogen - eg. Provera) is added in for the last seven to ten days, and then no hormones are taken for a week. After the menopause has been completed and all periods have stopped, it is usual to take both the oestrogen and progestogen constantly. Other dosage regimes may be recommended.

If oestrogen is taken without progestogen, there is over stimulation of the endometrial tissue in the uterus (womb), which can increase the risk of cancer of the uterus. When the two are taken together, either cyclically (progestogen for only part of the month) or constantly (both hormones all the time) there is no increased risk of uterine cancer. In a hysterectomy the uterus is removed, and so women who have had a hysterectomy cannot have an increased risk of
cancer of the uterus, and these women only need to take the oestrogen, and progestogens are unnecessary. These hormones maintain the body in a near normal balance, while underneath the artificial hormones, the natural menopause is occurring, so that when the tablets are stopped after a year or two, the menopausal symptoms will have gone.

Hormone replacement therapy (HRT) can be given as tablets, skin patches, skin cream, vaginal cream, vaginal pessaries, implants, nasal spray or injection. Every woman must assess her own needs in consultation with her doctor regarding her lifestyle expectations and the risks of using HRT. Many women are now continuing hormone replacement therapy (HRT) for many years after the menopause to prevent osteoporosis (and the resultant fractured bones), and to slow ageing. Generally speaking, HRT has been a major advance in the health of women, who now outlive men by an average of more than seven years.

Concerns about the safety of hormone replacement therapy (HRT) relate to long-term (greater than five years) use of combined (oestrogen and progestogen) HRT. Short-term use for up to five years is still apparently safe and is used to control the symptoms of menopause (eg. hot flushes, dry vagina, aching).

Long-term use needs to be weighed for each individual woman according to her risk factors for heart disease, osteoporosis, breast cancer, stroke and blood clot.

The points for and against combined hormone replacement therapy are outlined as simply as possible in the following list.

**EFFECTS OF COMBINED OESTROGEN AND PROGESTOGEN HORMONE REPLACEMENT THERAPY**

**BENEFITS:**
- Improved sense of well-being
- Increases libido (sexual desire).
- Lubricates the vagina and enhances sexual pleasure.
- Breast shape retained for longer without drooping
- Reduced risk of bowel cancer (risk decreases from 1.6 women in every 1000 developing bowel cancer in any one year to 1.0)
- Significantly reduced risk of osteoporosis (risk decreases from 1.5 women in every 1000 having a hip fracture from osteoporosis in any one year to 0.9)
- Slightly reduced incidence of heart disease.
- Delays onset of dementia.
- Improves bladder capacity and control
- Slows the development of wrinkles and keeps the skin moist and more elastic.
- Improves mood and reduces irritability
- Relieves the hot flushes, depression, bloating, insomnia and other symptoms of menopause.

**DISADVANTAGES:**
- Increases growth of existing breast cancer
- Increased risk of blood clots in veins (leg blood clots) (risk rises from 1.1 women in every 1000 developing a blood clot in any one year to 2.9)
- Breast tenderness and break through bleeding in early stages of use.
- Nausea and belly cramps may occur and migraines may be aggravated.

**NEUTRAL EFFECTS**
- No effect on weight gain or loss.
- No reduction in migraines or headaches.

If oestrogen is used alone without a progestogen, there is also an increased risk of endometrial and ovarian cancer. The concurrent use of a progestogen negates these risks.

Except under special circumstances, women who have had cancer of the breast, uterus or cervix; hormonal mastitis (breast pain), endometriosis, blood clots (thromboses) or strokes, should not use HRT.

Overall, the risk of using HRT is very small, and the latest research shows that women who use HRT to control hot flushes, mood swings, pelvic fullness and breast discomfort are far less likely to develop serious side effects than women who use HRT with no significant symptoms. The short-term benefits of HRT on menopausal symptoms may in fact give a better long-term quality of life.

See also OESTRADIOL; OESTROGEN; SEX HORMONES; STILBOESTROL; UTERUS

**HYDROXYPROLINE/CREATININE RATIO**

The ratio between the chemicals hydroxyproline and creatinine in blood can be measured. The normal level is less than 0.02. High levels may indicate Paget's disease of bone, hyperparathyroidism (over active parathyroid gland), osteomalacia (bone disease), hyperthyroidism (over active thyroid gland), osteoporosis after the menopause, kidney failure or a severe fracture. The ratio is a measure of the bone breakdown rate and calcium loss. Calcium
supplementation lowers the ratio after menopause.

HYPERHIDROSIS

Hyperhidrosis is a congenital condition of excessive inappropriate sweating for which there may be a family tendency. The excessive sweating may affect the entire body, or only specific areas, particularly the armpits, palms and soles. Sweaty feet may become smelly due to a secondary fungal or bacterial infection. It usually worsened with high temperatures, exercise, alcohol, eating (particularly spicy foods) and stress.

Blood tests may be performed to exclude any hormonal (eg. menopause) or metabolic (eg. overactive thyroid) cause for the problem.

Treatment involves antiperspirant sprays and lotions, absorbent powders under skin folds (eg. armpits, groin, breasts) and absorbent shoe insoles. In more severe cases propantheline tablets and diphenamid powder may be prescribed. Daily iontophoresis, which passes an electrical current across the skin to stop sweat production, may be used intermittently by doctors, or regularly by the patient. In very severe cases, the nerves that supply the sweat glands may be permanently destroyed, or the sweat glands in the armpits may be surgically removed. There is no cure, but treatments usually help to some extent.

See also SWEATING EXCESS

HYSTERECTOMY

Hysterectomy is a term that many women misunderstand and fear, yet it is one of the most common surgical procedures performed. Before a hysterectomy, a woman should be thoroughly investigated by blood tests, ultrasound examinations, and possibly x-rays and laparoscopy, to determine if there is any method of relieving her symptoms other than removal of the uterus.

The operation derives its name from a period over 150 years ago when it was thought that the uterus was a source of mental disturbance and caused hysteria in women. A hysterectomy was a very radical cure.

The female sexual organs consist of four main parts - the vagina which is used in intercourse, the womb (uterus) and its opening into the vagina called the cervix, the Fallopian tubes that carry the egg from the ovaries to the womb, and the two ovaries. It is only the uterus, tubes and one ovary that are removed from most women in a hysterectomy. Both ovaries and/or the vagina may be removed if the operation is for cancer.

Because the vagina and one ovary are normally left behind, the woman is able to have a normal sex life after the operation. The vagina remains the same size, and the female hormones that stimulate sexual responses and maintain the normal breast shape and body hair continue to be released in adequate amounts from the remaining ovary. Once she has recovered fully from the operation, the woman and her partner should notice no significant difference in their normal sexual relationships, and the woman will still be able to experience an orgasm.

Women who have the operation before their menopause will still experience the problems commonly associated with the change later in their life, and the resultant hot flushes, depression, bloating, headaches and other symptoms may need further medical treatment.

Because the uterus is responsible for producing the blood loss that occurs with monthly periods, a hysterectomy stops any further bleeding, but a woman may still experience the symptoms of premenstrual tension, and sometimes detect the bodily changes associated with ovulation. This is because the remaining ovary continues to produce hormones in the normal cyclical manner, as though the uterus was still there to respond. If both ovaries are removed, the woman undergoes an instant menopause, and must take hormone replacement therapy long term.

Hysterectomies are performed for many different reasons, the most serious being cancer (which may result in more major surgery to remove the surrounding lymph nodes as well). Most operations are for milder diseases and complaints that may still be very distressing to the individual woman. These problems include uterine growths (eg. fibroids), endometriosis (a type of pelvic bleeding disorder), ovarian diseases, and most commonly for intractable heavy and painful periods.

There are three main methods of performing a hysterectomy - an open operation, vaginal hysterectomy and laparoscopic hysterectomy.

In the open operation, a horizontal incision is made into the lower part of the belly, the abdominal cavity is opened, and the uterus and other attached organs are removed. The wound, which is about 12 to 15 cm. long, is then sutured closed. A hospital stay of five or six days is necessary, and it may be six to eight weeks before a return to normal activities.
In a vaginal hysterectomy, there is no scar on the abdomen as the entire operation is performed through the vagina. The recovery time is not quite as long as for the open operation, but the operation is more technically difficult, and in most centres has been replaced by laparoscopic hysterectomy.

Laparoscopic hysterectomies were first performed in the late 1980s, and are now the most common form of the operation, but not all women are suitable candidates. It involves four incisions in the abdomen, each about one centimetre long, and through these, thin tubes are introduced. These laparoscopic tubes are used to see what is happening inside the abdomen using a camera or direct vision, and to introduce instruments to perform the operation. When the uterus and tubes have been cut free from the supporting structures, they are removed through the vagina. There is much less pain after this operation, the hospital stay is only one or two nights, and patients recover completely in two to three weeks. There are fewer complications than with open surgery as less tissue damage occurs.

An alternative to hysterectomy in some circumstances (eg: heavy bleeding) is microwave endometrial ablation. Most women who have the operation for good reasons are very grateful because they no longer need to spend a week or more each month cloistered away from society because of menstrual flooding and cramps.

Any woman contemplating a hysterectomy, or who has been advised to have one, should take along a list to ensure that her gynaecologist or general practitioner adequately answers all her questions and concerns. Obtaining a second opinion from another gynaecologist may further reassure the woman that the operation is her best option. In this way, many problems can be avoided.

See also MICROWAVE ENDOMETRIAL ABLATION; OVARY; UTERUS

INCONTINENCE OF URINE

This is the inability to control the outflow of urine so that wetting of clothing or bedding occurs. It is a problem that affects women far more than men. Repeated urinary infections may be a complication.

In women, there is normally an acute angle between the bladder and the opening into the urethra (tube leading to the outside) - see diagram below. If this angle is reduced for any reason, the woman will become more prone to urinary incontinence.

Diagramatic cross section through a woman's pelvis showing normal angle of urethra and bladder that prevents incontinence, and the abnormal situation after childbirth when the angle may be lost.

Alcohol and caffeine are both known to increase the production of urine, and if too much of the former is consumed, the person may lose their inhibitions and urinate inappropriately.

A sudden severe fright or shock, and extreme fear, may cause loss of bladder control.

An infection of the bladder or kidney will result in the frequent, painful passage of small amounts of urine. Women may find their control of urination to be compromised with these infections.

Childbirth can cause damage to the muscles that control the release of urine, and may result in long term problems, so that every time the woman laughs, coughs or exercises, she passes a small amount of urine. The loss of muscle tone in the floor of the pelvis can result in the same problem. The female hormone oestrogen maintains the muscle tone in this area, so the lack of oestrogen at menopause is usually responsible. Obesity will further aggravate the problem. Pelvic floor exercises supervised by a physiotherapist, hormone replacement therapy, weight loss and surgery can all help control these causes of incontinence.

Detrusor hyperactivity is an excessive sensitivity of a muscle that forms a sac around the scrotum in the groin. A spasm of this muscle puts pressure on the bladder and reduces the control of urination by the muscles around the bladder opening into the urethra causing the affected man to suddenly and uncontrollably pass urine.

A number of medications may aggravate incontinence. Examples include blood pressure medications (particularly prazosin), fluid producing medications (diuretics), tranquillisers, lithium and some depression treating drugs (tricyclics).

Other causes of urinary incontinence include surgery to the pelvis and genitals (eg. hysterectomy), a stroke, loss of consciousness, epileptic fit, damage to the brain (eg. cerebral palsy, tumour, Parkinson’s disease), senility or dementia (eg. Alzheimer disease), tumours or stones in the bladder, pelvic injury, multiple sclerosis, injury to the spinal cord (eg. paraplegia or quadriplegia), trigonitis, poorly controlled diabetes mellitus and diabetes insipidus.

A fistula (abnormal opening) between the bladder and vagina may be caused by a very difficult childbirth,
particularly in poorer countries. These poor women constantly dribble urine through their vagina.

Rarer causes include severe allergy reactions affecting the genitals, psychiatric disorders (eg. severe depression) and birth abnormalities of the bladder structure.

X-rays of the bladder and kidneys, and cystoscopy (looking into the bladder through a thin tube) can be used to investigate the cause of the incontinence. Incontinence is not a disease but a symptom, and the responsible disease needs to be diagnosed before any treatment can start, although medications such as propiverine, trospium or tolterodine may be useful in some patients.

**INSOMNIA**

Insomnia is an inability to sleep, either a difficulty in getting to sleep, waking repeatedly or for prolonged periods, or early morning waking (EMW) after initially falling asleep. Sleep is as essential for the normal functioning of the human body as food and drink. Doctors do not completely understand why we need sleep, but they do understand what happens when we are asleee.

There are two main types of sleep - deep sleep and REM sleep. REM stands for rapid eye movements, and several times a night, the level of sleep lightens, and while the eyelids remain closed, the eyes themselves move around rapidly. It is during this stage of sleep that dreams occur, and it is the more valuable form of sleep. If a volunteer is observed, and woken every time s/he starts REM sleep, s/he will remain tired and irritable, and obtain little benefit from the sleep. REM sleep does not start until an hour or so after first falling asleep, and long periods of deep sleep occur between each episode.

Unfortunately, many sleeping tablets induce deep sleep, but tend to prevent REM sleep, so that people using them do not benefit from their sleep as much as those who sleep naturally. This is one of the reasons that doctors are reluctant to use them until all other avenues have been explored.

The amount of sleep needed varies dramatically from one person to another. Some require only three or four hours a day; most require seven or eight hours; others may need ten hours. As we age, our sleep needs change too. An infant requires 16 or more hours of sleep a day; in middle age, eight hours is normal; but the elderly need only five or six hours sleep.

The problem here is that older people may have less to occupy their days, and so look forward to the escape of eight hours sleep every night, but find they cannot obtain it because their bodies do not require that much. This is further exacerbated by the low activity levels of many elderly people, and any midday naps they take. As a result, some elderly people seek help in obtaining extra sleep from their doctors by means of sleeping pills. This is not true insomnia, merely a desire for extra sleep, above what is biologically necessary.

There are, of course, those who genuinely cannot get to sleep for a variety of reasons, and 15% of the population fall into this category.

Specific causes of insomnia include stress and anxiety (including post-traumatic stress disorder), pain, depression (particularly early morning waking), menopause and its associated hormonal fluctuations, snoring, the restless legs syndrome and Cushing syndrome (over production in the body of, or excessive medication with, cortisone).

Numerous drugs, both illegal and prescribed, may cause sleeplessness. Examples include alcohol, caffeine, marijuana, cocaine, slimming pills and pseudoephedrine (Sudafed) for runny noses.

There are many things other than medication that can be done to ease the problem. The simple steps that anyone can use to aid sleep include:-
- Bed is for sleep and sex only, not for watching television or reading.
- Go to bed when you feel tired, not when the clock tells you to.
- Do not lie down or nap during the day.
- Do not have a clock in the bedroom.
- Avoid exercise immediately before bed. Take time to wind down before going to bed.
- Avoid drinks containing caffeine such as tea, coffee or cola. Caffeine is a stimulant.
- Do not smoke before going to bed.
- Relax by having a long warm bath and/or a warm milk drink before going to bed.
- Lose weight if you are obese. A slight weight loss can significantly improve sleep.
- Avoid eating a full meal immediately before bedtime. Give your food a couple of hours to settle.
- If you cannot sleep once in bed, get up and read a book or watch television for half an hour before returning to bed. Never lie in bed tossing and turning.
- Learn to relax by attending specific relaxation classes, which your doctor may recommend. Follow up by listening to relaxation tapes.
- Try counting backwards slowly from 100.
- Have a radio on all night tuned to a news/information station playing very quietly so that you can just understand the voice, and listen intently to what is being said when trying to go to sleep and when awake during the night.
- Instead of counting sheep or worrying about your problems, focus your mind on a pleasant incident.
MENOPAUSE A to Z

in your past (such as a holiday, journey or party) or the day you have just finished and remember the whole event slowly in intricate detail from beginning to end.

- Remember that the harder you try to fall asleep, the less likely you are to succeed, so relax!

If all else fails, and sleep is still impossible, a doctor can prescribe medications (eg. benzodiazepines, sedatives) that can be taken ideally for a short time only, to relieve the problem.

See also BABY SLEEP PROBLEMS; BENZODIAZEPINES; FATAL FAMILIAL INSOMNIA; SEDATIVES; SHIFT WORK; SLEEP; SLEEP STUDIES

ISOFLAVONE

Isoflavone is plant oestrogen obtained commercially from soybeans and other legumes, which acts in humans as a phytoestrogen and an antioxidant. It is used by some orthodox and many alternative practitioners to treat the symptoms of menopause, infertility and to act against cancer in the breast and prostate. The clinical benefits of isoflavone for these indications varies from nil to slight in clinical trials. High levels can be found in tofu.

See also OESTROGEN; PHYTOESTROGENS

KUDZU

Kudzu is a Chinese herb that is used to reduce the craving for alcohol and symptoms of the menopause. It should not be used in pregnancy or patients with heart disease.

LEUCORRHOEA

Leucorrhoea is a white or clear vaginal discharge due to excess production of the normal lubricant in the vagina. It occurs more commonly with sexual stimulation, pregnancy, breastfeeding and with hormonal fluctuations during menopause.

See also VAGINAL DISCHARGE

LIBIDO LACKING

Libido is controlled by the brain and not the testes or ovaries, although diseases of these glands can certainly have an adverse effect on libido as they do not respond to stimuli from the brain.

To enjoy, and be successful in achieving, sexual intercourse, both partners must be relaxed, secure and comfortable. Psychological stress of any sort will reduce sexual desire. Examples can be as wide ranging as worries about job, money, pregnancy, discovery (will the children come in?), the relationship itself or disease.

Many psychiatric conditions, but particularly depression, will remove any desire for sex. Difficulty in sleeping, loss of interest in other activities and poor self-esteem, are other signs of depression.

Failure of any major organ of the body (eg: heart, liver, kidney) or any other serious disease will affect the normal hormonal and chemical balances, as well as causing stress and anxiety, and sex becomes something to be remembered rather than sought.

Disease, infection, tumour (eg. Fröhlich syndrome), injury or cancer of the pituitary gland under the centre of the brain will affect libido. This tiny gland is the conductor of the gland orchestra in the body, and is itself directly controlled by the brain. If for one of these reasons it does not produce the necessary hormones to stimulate the testes or ovaries, they will not release the appropriate sex hormones (testosterone and oestrogen) to allow appropriate sexual responses. Rarely the pituitary gland may become over active, and over stimulate the sex glands to drain them of their hormones.

The part of the brain controlling the pituitary gland can itself be affected by a stroke, bleeding, injury, tumour, cancer or abscess. Parkinson's disease and other degenerative conditions of the brain will both reduce desire and ability.

In men, any disease that reduces the production of testosterone (male hormone) in the testes will reduce libido. Examples include infections (orchitis), tumours (eg: cancer), cysts and torsion (twisting to cut off the blood supply). Other causes of low libido in men include enlargement of the prostate gland and poorly controlled diabetes mellitus.

Women find that their libido varies during the month, usually being highest at the time of ovulation (when they are most likely to get pregnant) half way between the start of one period and the next, and lowest during a menstrual period.

Pregnancy also lowers libido for its duration, and breastfeeding has a similar effect on the hormones.

Other causes of low libido in women include tumours or cysts of the ovary, and during the menopause, when there is a lack of oestrogen, sex may be uncomfortable as well as undesirable.

Numerous drugs, legal, illegal and prescribed, can reduce libido. Examples include alcohol, heroin, marijuana, steroids, antihistamines (eg. cold preparations), benzodiazepines (eg. diazepam, oxazepam), fluid pills and some of those used to treat depression (tricyclics) and decrease high blood pressure (beta blockers).

See also FRIGIDITY
LUTEINISING HORMONE

Luteinising hormone (LH) is released from the pituitary gland in the brain. It is responsible for controlling ovulation, oestrogen production and maintenance of a pregnancy in the female, and stimulates sperm production and production of testosterone in the male testes.

The level of LH in blood can be measured to investigate menstrual cycle disorders and infertility. Normal results vary between laboratories, but a representative range is:

- Before puberty: 1 to 3.4 IU/L.
- Male: 2 to 9 IU/L.
- Fertile female: 2 to 20 IU/L.
- At time of ovulation in females: 10 to 50 IU/L.
- After menopause: 30 to 200 IU/L.

Low levels may indicate infertility or hypogonadism (ovary or testicle not functioning properly to produce sex hormones). High levels may indicate that the test was taken at the time of ovulation, the child may be having a premature puberty, or the Stein-Leventhal syndrome.

See also FOLLICLE STIMULATING HORMONE; GONADOTROPHINS; PITUITARY GLAND; SEX HORMONES;

MALE MENOPAUSE

See ANDROPAUSE

MAMMARY DYSPLASIA

Mammary dysplasia is also known as chronic cystic mastitis and fibrocystic disease of the breast. It is a common cause of breast lumps and cysts, and breast discomfort in middle-aged women, and is caused by overactivity of the ovaries in producing too much oestrogen. It is often an inherited characteristic.

Affected women develop multiple, tender, painful, small lumps in the breasts that vary in size and severity with the monthly hormonal cycle. They are usually worse just before a menstrual period. Large cysts may form permanently in the breast, and persistent pain and discomfort may significantly affect the woman's lifestyle.

Mammography (breast x-ray) and ultrasound may be used initially, but in most cases needle or surgical biopsy is necessary to confirm the diagnosis.

Initially a firm bra should be worn day and night. Individual cysts may be drained through a needle when they become too large or uncomfortable. Medical treatment involves using drugs such as the contraceptive pill to regulate the menstrual cycle, nonsteroidal anti-inflammatories, danazol and progestogens. Avoiding caffeine helps some patients. The condition often persists until menopause, when it naturally subsides.

See also BREAST CANCER

MEMORY DISTURBANCE

Memory disturbance is different to memory loss (amnesia). In this section causes of abnormal or inappropriate memories are discussed.

Dementia is caused by degeneration of the brain in old age, and is associated with abnormal thought processes, poor memory and hallucinations.

Alzheimer disease (senile dementia or second childhood), is one of the most common forms of dementia in the elderly, and is characterised by loss of recent memory, loss of initiative, reduced physical activity, confusion, loss of orientation (patients become confused about where they are and dates), and then it gradually progresses to loss of speech, difficulty in swallowing (drooling results), stiff muscles, incontinence of both faeces and urine, and a bedridden state in which the patients are totally unaware of themselves or anything that is happening around them. It is caused by a faster than normal loss of nerve cells in the brain.

The female sex hormone, oestrogen, has an effect upon every cell in the body, not just the breast, uterus and other reproductive organs. During and after the menopause, the levels of oestrogen fluctuate irregularly, and then it disappears altogether. A lack of oestrogen will have effects on the brain that include memory disturbances. Hormone replacement therapy can correct the problem.

The organic brain syndrome is a result of severe emotional disturbance (eg. horror, fear) and causes memory disturbances, disorientation, poor logic and behavioural changes. Drug use, epilepsy, cancer outside the head and severe infections may also trigger this syndrome.

Some illegal drugs (eg. heroin, marijuana) and prescribed narcotics and sedatives may affect memory. Long-term alcoholism may cause memory disturbances.

MENOPAUSE, MALE

See ANDROPAUSE
MENOPAUSE, PREMATURE
See PREMATURE OVARIAN FAILURE

MENORRHAGIA
Menorrhagia is a term used in medicine for an excessive menstrual period blood flow.
See also MENSTRUAL PERIODS HEAVY

MENOTROPHIN
See MENOPAUSAL GONADOTROPHIN

MENSES
The menses or menstruation is the normal monthly loss of blood during a woman's menstrual period.
See also MENSTRUAL PERIOD

MENSTRUAL PERIOD
Once a month, just after a woman releases the egg (at ovulation) from her ovary, the lining (endometrium) of the womb (uterus) is at its peak to allow the embedding of a fertilised egg.

If pregnancy does not occur, the endometrium starts to deteriorate as the hormones that sustain it in peak condition alter. After a few days, the lining breaks down completely, sloughs off the wall of the uterus, and is washed away by the blood released from the arteries that supplied it in a process known as menstruation or the menses. Contractions of the uterus help remove the debris.

After three to five days, the bleeding stops, and a new lining starts to develop ready for the next month's ovulation.

Schematic representation of hormone changes during menstrual cycle

![Diagram showing hormone changes during menstrual cycle]

See also MENSTRUAL PERIODS HEAVY; MENSTRUAL PERIODS PAINFUL; UTERUS; VAGINAL BLEEDING ABNORMAL

MENSTRUAL PERIODS FREQUENT
Polymenorrhoea is the medical term for frequent menstrual periods. Women with polymenorrhoea have normal pain-free periods, but they occur very frequently. It is not considered to be a problem unless the periods occur more often than every 24 days, and treatment is often reserved for those women in whom it occurs more often than once every three weeks.

It is important to distinguish from polymenorrhoea the small breakthrough bleed that may occur at the time of ovulation in the middle of some women's monthly cycle. These mid-cycle bleeds are usually only 12 to 36 hours in length, and are characterised by minimal blood loss. A similar breakthrough bleed can occur while taking an oral contraceptive pill that is too low in hormone dose for that woman.

Frequent periods can be caused by a disturbance to the pituitary gland under the brain, which is releasing the ovary-stimulating hormones at the incorrect time. In other women, damaged ovaries (e.g. due to cysts) may be the cause of polymenorrhoea.
The only practical treatment for polymenorrhea is the oral contraceptive pill, as this can hold the hormone levels at an artificially high level until the period is desired (usually every 28 days). If the woman objects to the use of the pill, other hormones may be used, but they are not generally as effective.

See also OVARY; PITUITARY GLAND

MENSTRUAL PERIODS HEAVY

Excessive blood loss during a menstrual period (menorrhagia or flooding) is uncomfortable, distressing and may lead to anaemia and other health problems. In most women it is a constitutional problem in that there is no specific disease or condition causing the problem, but it is the way that their body deals with the monthly hormonal changes. In a few cases though, there is an underlying medical problem. This is more likely if the periods have changed to become heavier over a few months.

The menopause occurs in the late forties and early fifties in most women. Instead of cycling smoothly and evenly through the monthly changes, sex hormone (oestrogen and progestogen) levels start to change suddenly, irregularly and inappropriately. This causes the symptoms of menopause which include irregular menstrual periods that can vary from very light to very heavy, hot flushes, headaches, irritability, personality changes, breast tenderness, tiredness and pelvic discomfort.

Inappropriately high levels of oestrogen being prescribed for hormone replacement therapy may cause heavy periods.

Psychological disturbances (e.g. severe stress, shock or anxiety) may affect oestrogen production and irregular heavy periods may follow.

Intrauterine contraceptive devices (IUD) may irritate the lining of the uterus to cause heavier and more painful periods in some women.

Other causes of menorrhagia include fibroids (hard balls of fibrous tissue that form in the muscular wall of the uterus), cysts in an ovary, ulcers and erosions of the cervix (opening of the uterus into the vagina), endometriosis, a miscarriage (may cause abnormal bleeding before a woman is aware that she is pregnant), an ectopic pregnancy (development of a growing foetus in the fallopian tubes instead of the uterus), salpingitis (infection of the fallopian tubes), hypothyroidism (an underactive thyroid gland) and tumours, polyps or cancers of the uterus or cervix may cause irregular heavy bleeding, that may not be related to the menstrual cycle, but be caused by direct bleeding from the growth.

Uncommon causes include the Stein-Leventhal syndrome (multiple cysts in the ovaries affect their function) and thrombocytopenia.

See also MENSTRUAL PERIODS PAINFUL; VAGINAL BLEEDING ABNORMAL

MENSTRUAL PERIODS, LACK OF

Women expect their menstrual periods to occur regularly every month, and become concerned when this does not happen. The obvious causes for periods to stop are pregnancy and menopause, and every woman between 15 and 50 who misses a period should be considered pregnant until proved otherwise. Breastfeeding will delay the return of regular menstrual periods. There are also a number of medical conditions that may be responsible for amenorrhoea (a lack of menstruation) or oligomenorrhoea (infrequent menstruation).

Any significant emotional trauma (e.g. loss of job, death in family), physical stress (e.g. vigorous athletic training), serious illness (e.g. major infection) or poor nutrition (e.g. lack of food, vomiting and diarrhoea) can affect the menstrual cycle. This is a very common phenomenon.

Significant weight loss as a result of deliberate dieting, disease (e.g. cancer) or psychiatric disturbance (e.g. anorexia nervosa) will also stop menstruation.

The oral contraceptive pill may cause menstrual periods to become lighter and lighter until they disappear completely. Some women take the pill constantly, without a monthly break off the pill or taking sugar tablets, and stop their periods for the sake of convenience. This practice is completely safe and causes no long-term harm.

Uncommon causes include tumours, cysts or cancer in an ovary that affect the regular cyclical production of oestrogen, a lack of thyroxine (hypothyroidism), Asherman syndrome, Addison’s disease and the Stein-Leventhal syndrome.

See also MENSTRUAL PERIODS

MENSTRUAL PERIODS PAINFUL

In more than 8 out of 10 cases, there is no serious cause for painful periods (dysmenorrhoea). Although distressing, they are merely the way in which a woman, and her uterus, cope with menstruation.

The uterus mainly consists of powerful muscle fibres, which should only come into use during the delivery of a baby, and to a minor extent when blood and the unused lining of the uterus is expelled in the monthly menstrual period. Period pain is usually caused by excessive spasms of these muscles in the uterus, but sometimes may be due to other medical problems.
During the menopause, the natural sex hormones produced by the ovaries, may be produced irregularly and in greater quantities, leading to an increased build up of the uterine lining during the month, or excessive stimulation of the uterine muscles during a period.

An intrauterine contraceptive device (IUD) may irritate the uterus to trigger more powerful contractions than usual. Salpingitis (infection of the fallopian tubes), often by sexually transmitted diseases, may result in the tubes becoming blocked and painful. Pelvic inflammatory disease is a more widespread infection of the organs within the pelvis. During a period, contractions of the uterus may irritate these infected organs to cause pain.

Endometriosis is a disease in which the cells that normally line the inside of the uterus become displaced, and move through the fallopian tubes to settle around the ovary, in the tubes themselves, or on other organs in the belly. In these abnormal positions they proliferate, and when a menstrual period occurs, they bleed as though they were still in the uterus. This results in pain, adhesions, damage to the organs they are attached to, and infertility.

Fibroids are hard balls of fibrous tissue that form in the muscular wall of the uterus, often after pregnancy. They can distort the shape of the uterus to cause pain when the uterus contracts during a period or orgasm.

The uterus is normally bent forwards at about 60° to the vagina. In some women, the uterus is straighter, or bent backwards (retroverted). These women seem to suffer from more painful periods.

Other causes of dysmenorrhoea include a prolapse of the uterus (uterus slips down into the vagina), pelvic congestion syndrome (veins in the pelvis become dilated), narrowing of the cervix after surgery, adhesions and tumours, polyps or cancers of the uterus or surrounding organs.

See also MENSTRUAL PERIODS; UTERUS

MENSTRUATION
See MENSTRUAL PERIOD

MICROWAVE ENDOMETRIAL ABLATION
An alternative to hysterectomy in some circumstances (eg. heavy bleeding) is microwave endometrial ablation. Investigations by ultrasound scans and/or hysteroscopy will be performed before the procedure is considered.

The endometrium is the lining of the womb, which is normally responsible for nurturing a growing foetus in pregnancy, or a woman's monthly periods at other times.

There are several methods of endometrial ablation, which is normally a simple procedure. Two examples are:-
- The patient is given a general anaesthetic, and the cervix is dilated to allow a small instrument to be introduced into the uterus. At the end of this probe is a rolling ball, through which an electrical current is passed. The ball is moved around the inside of the uterus and the electrical current permanently destroys the endometrium.
- Under local anaesthetic, a thin wand is introduced into the uterus through the cervix. At the end of the wand is a gold mesh which opens like a triangular umbrella to completely cover the inside of the uterus. Radiofrequency energy is then passed through the gold mesh for about 90 seconds to destroy the endometrium, before the wand and mesh are withdrawn.

The woman can usually go home the same day, there may be some uterine cramps for a day or two and there may be a watery and bloody discharge for a few days, but most women can return to work in two or three days.

The main complication is infection, and to prevent this the patient should avoid swimming, baths and sex for about ten days after the procedure.

The procedure may not totally remove a woman's symptoms, and up to a quarter of patients need to go on to have a full hysterectomy at a later date.

See also HYSTERECTOMY; UTERUS

MUSCLE PAIN
Muscle pain (myalgia) may affect the large muscles of the legs and back, or tiny muscles in the hands or face. It may often be mistaken for pain coming from deeper in the body, particularly if the muscles of the belly or chest are affected.

By far the most common and obvious cause of myalgia (muscular pain) is overuse of the muscle with excessive and unaccustomed exercise. This may cause microscopic tears in the muscle, which result in both cramps and pain.

The next cause in order of importance is viral and bacterial infections that involve muscles. Dozens, if not hundreds, of different infections may be responsible. Examples include influenza (muscle pain is a feature that separates influenza from a common cold), hepatitis (most forms), glandular fever (infectious mononucleosis), measles, Ross River fever (joint pains), encephalitis (brain infection with neck stiffness), dengue fever, brucellosis (caught by meat workers from cattle), Lyme disease (spread by tics from mice and deer), toxoplasmosis (from cats), polio (prevented by vaccination, but if caught may cause permanent muscle damage) and leptospirosis (inflamed eyes and fever).

Fibrositis is the replacement of some muscle fibres with scar tissue after injury to the muscle from over use or repetitive use. The affected muscles may ache, become stiff and harder than usual. The discomfort is eased by heat and worsened by cold.
While passing through the menopause, women may suffer muscle pain as well as hot flushes, irregular menstrual periods, depression and headaches.

Less common causes of myalgia include low blood sugar (caused by overdoses of medication for the treatment of diabetes), polymyalgia rheumatica (inflammatory condition involving many muscles), motor neurone disease (progressive and permanent degeneration of the nerves that control muscle movement), chronic fatigue syndrome, severe deficiencies of vitamins B (beriberi) and C (scurvy), myositis ossificans and rheumatic fever.

Rarer still are causes such as the Guillain-Barré syndrome (progressive symmetrical weakness of the limbs and face), eosinophilia-myalgia syndrome (eating excessive amounts of the protein L-tryptophan), some psychiatric conditions, focal nodular myositis, hyperparathyroidism (overactive parathyroid glands), Bornholm disease (a viral infection that attacks the membrane surrounding the lungs), myofascial pain syndrome and Weil syndrome (complication of an infection by the bacteria Leptospirosis).

Some medications (eg. methyldopa for high blood pressure and those used to lower cholesterol) may also cause muscle pains.

**NAIL SOFT**

Nails that are soft and keep breaking or tearing are most commonly caused by genetic factors, changes in sex hormone levels at menopause, alcoholism and sometimes persistent infections of the nail bed by a fungus or bacteria.

There is no direct link between most cases of nail softening and bone softening (osteoporosis), but a link is possible with the rare condition osteomalacia in which osteoporosis and soft nails occur.

A diet high in calcium may help the problem slightly, but nail hardening lacquer is probably the best treatment. The fact that so many nail hardening products are available in beauty shops will give some idea of how common this problem has become.

**NIGHT SWEATS**

Abnormal sweating at night can be due to a multitude of variable factors. Obviously a warm climate, excessive clothing and a high ambient temperature can be a cause, but so can anxiety and fear.

By far the most common cause is the menopause. Medical causes include viral or bacterial infections of any type, thyrotoxicosis (an overactive thyroid gland), hypoglycaemia (low blood sugar), lymphomas and other cancers, a tumour of abscess of the hypothalamus (temperature regulating part of the brain), some medications and withdrawal from narcotics (eg. heroin).

See also SWEATING EXCESS

**NIPPLE DISCHARGE**

The nipple of the breast will obviously discharge milk in a woman who is breastfeeding, and will often leak milk between feeds, particularly when the breast is engorged with milk some hours after a feed. At other times a discharge will indicate some medical problem.

Sex hormone imbalances are the most common cause of abnormal nipple discharges. At almost any time during pregnancy, but particularly late in pregnancy, the higher levels of hormones in the body may stimulate premature breast milk production.

Hormones in the oral contraceptive pill, or hormone replacement therapy after the menopause, may over stimulate breast tissue to cause a discharge if the dose is too high.

The pituitary gland under the brain sends signals to the ovaries to increase or decrease sex hormone (oestrogen) production. A tumour or cancer of the pituitary gland or ovaries may result in excessive hormone levels and breast milk production.

Newborn infants of both sexes sometimes produce “witch’s milk”, which is a discharge from the nipples in the first few days of life due to high levels of sex hormone passing over to the child from the mother through the placenta during birth. It is a harmless condition that settles quickly.

Other causes of an abnormal nipple discharge include breast cancer that involves the milk ducts (brown or blood stained discharge), kidney failure (may prevent the excretion of the normal amount of oestrogen and the levels of hormone increase), under or over active thyroid gland (hypothyroidism and hyperthyroidism), Cushing syndrome (over production of steroids, or taking large doses of cortisone) and excessive stimulation of a woman’s nipples for a prolonged period of time may result in a reflex which increases oestrogen levels and results in milk production.

Some non-hormonal medications may increase sex hormone production as a side effect. Examples include methyldopa and reserpine (used for serious high blood pressure) and tricyclic antidepressants.

**OBESITY**

In Roman times, a beautiful woman was considered to be well proportioned and rounded in the style of Venus de Milo (plus arms of course!). During the Renaissance, voluptuous females of Junoesque proportions were appreciated. Today the tall, skinny, anorexic fashion model is considered to be in vogue. It is possible that those overweight by
today's standards were merely born in the wrong era!

Two centuries ago the average person walked 12 kilometres a day, getting adequate exercise and burning off excess weight. As a result, obesity was a sign of wealth, as the person did not need to walk long distances for work, or had access to a carriage rather than a horse (horse riding also uses energy).

Up to 40% of people in developed countries are overweight, but only 5% are considered to be obese by medical standards. Obesity is medically defined as being more than 40% over the ideal weight for sex, height and age. Men tend to develop "apple" obesity (fat around the middle of the body) while women are "pears" (fat deposits around the buttocks). The "apple" form has a far higher risk of heart complications.

Those whose weight is within 20% of their recommended weight have little to fear health-wise. Those who exceed this limit are more likely to develop strokes, heart disease, diabetes, arthritis and liver disease.

The causes of obesity can be simply listed (in order of importance) as:-
- inherited tendency
- too much food eaten
- too little exercise
- metabolic (body chemistry) disorders.

The vast majority of cases of obesity are due to excessive food and physical inactivity, but if your parents were obese, your chances of also being obese are greatly increased. Some people have very efficient bodies (like a fuel efficient car), and require remarkably little energy in the form of food to remain healthy and active. If the amount of energy used (calories/kilojoules) in exercise and normal body function exceeds the amount of energy taken in as food and drink, the person will always lose weight. If the reverse is true, weight will increase. It should be remembered that calories and kilojoules are a measure of the energy content of food, and not the fat content.

Middle age spread occurs as the metabolic rate of the body (the rate at which all organs in the body function) slows with age, at the same time that exercise levels tend to reduce, and food intake increases with more leisure and security. Many women gain weight after the menopause due to a slowing of the body's metabolic rate when oestrogen levels drop. This effect may be slowed by hormone replacement therapy.

Other metabolic causes of obesity include disorders of the pituitary gland under the brain (caused by a tumour, cancer, stroke, infection, injury or other disease), an under active thyroid gland (hypothyroidism), Cushing syndrome (over production of steroids, or taking large doses of cortisone), poorly controlled insulin dependent diabetes, the chromosomal defect of Prader-Willi syndrome, metabolic syndrome (also known as Reaven syndrome and insulin resistance syndrome), Stein-Leventhal syndrome (multiple cysts in the ovaries), Fröhlich syndrome (late onset of puberty, thin wrinkled skin, scanty body hair) and the Laurence-Moon-Biedl syndrome (night blindness, intellectual disability, obesity, small genitals and sometimes extra fingers or toes).

Obesity can be self-perpetuating as one of the effects of fat is to insulate the body so that it does not lose as much heat. If less heat is lost, less heat needs to be produced within the body, so the metabolic rate drops, less energy is required for the body to function and excess energy is stored as fat, thus completing the cycle.

Those with a metabolic cause for their obesity must have the underlying condition treated, and not the obesity itself.

Obese men and women tend to spend an incredible amount of money in their attempts to become thin by buying special foods and medicines. The cheapest and most effective way to lose weight is to spend less, by buying less food, particularly less of the expensive processed foods. If you find your willpower is lacking, or the craving for rich foods becomes unbearable, doctors can prescribe tablets that are designed to reduce your appetite (anorectics). These drugs are expensive, and should not be used for long periods, but they are effective.

Orilistat (Xenical) is a drug that reduces the body's ability to absorb fat, and is quite successful in assisting obese people to lose weight, but it must be used in conjunction with a diet program, and some degree of diarrhoea is an almost invariable side effect.

Sibutramine (Reductil) is a medication that was released in 2002, that acts on the brain to reduce appetite. A weight reduction of 5% can be expected in three months in most patients. It cannot be used by patients who are on some antidepressants, and patients with heart disease or high blood pressure, blood pressure must be monitored regularly, and the medication is quite expensive. There are many other groups who should not use this medication, including those over 65 years. Its use should be carefully discussed with a doctor.

Phentermine (Duromine) is another medication used to reduce appetite in obesity. It is less commonly used these days due to the significant risk of dependence and addiction.

There are also food substitutes that can be used to replace meals and primarily contain non-absorbable fibre such as cellulose.

As a last resort, surgical procedures that reduce the size of the stomach (bariatric surgery, gastric banding) or salt water filled balloons that sit in the stomach (intragastric balloon) can be used to aid the patient in their dieting.

If those who are medically overweight reduce their weight by just 10%, they will:-
- reduce blood pressure by 10 to 20 mm.
- reduce the symptoms of angina by 90%
- reduce the bad forms of cholesterol in their blood
MENOPAUSE A to Z

- reduce the risk of developing diabetes by 50%
- reduce the risk of death from heart disease, diabetes and cancer by more than 20%
- improve the quality and quantity of sleep
- reduce daytime drowsiness
- increase sexual desire and activity
- improve overall assessment of health by more than 20%

The long-term success rate for those who are truly obese and try to lose weight is very discouraging. Most have yo-yo weights, which fluctuate up and down over the years by 20 Kg. or more as they try different diets and exercise programs. This weight fluctuation can be more harmful than staying fat. Overall, less than one in twenty of obese people manage to return to within normal weight limits and stay there for more than five years.

If you do manage to stay on a diet for about five years, and maintain your weight constantly within the desired range, the body will adapt to its new shape, and the metabolic rate may also adjust, so that you may suddenly find after years of dieting that you can relax a little, and still maintain the new weight.

OESTRADIOL

Oestradiol (estradiol in the USA) is a female sex hormone that is produced by the ovaries. It may also be used as a medication in the form of a tablet, patch, gel, cream, nose spray, vaginal pessary, vaginal ring, injection or implant to relieve the symptoms of menopause.

The amount of 17-beta oestradiol (the full name of the ovarian hormone) can be measured in a blood sample to test for infertility in a woman. The normal range is:

<table>
<thead>
<tr>
<th></th>
<th>Female before ovulation</th>
<th>Female after ovulation</th>
<th>After menopause</th>
</tr>
</thead>
<tbody>
<tr>
<td>Range</td>
<td>180 to 1500 pmol/L</td>
<td>400 to 800 pmol/L</td>
<td>Less than 200 pmol/L</td>
</tr>
<tr>
<td>(50 to 400 ng/L)</td>
<td>(120 to 200 ng/L)</td>
<td>(less than 55 ng/L)</td>
<td></td>
</tr>
</tbody>
</table>

A low level indicates that a woman is not ovulating, before puberty or after menopause.

As a medication it should not be used in males, pregnancy, breastfeeding or children, but accidental usage in these situations is unlikely to be harmful. Use oestradiol with caution in epilepsy, migraine, heart failure, high blood pressure, kidney disease, diabetes, porphyria or uterine disease, and not at all if suffering from liver disease, breast or genital cancer, blood clots, sickle cell anaemia, undiagnosed bleeding from vagina, severe high blood pressure or endometriosis.

Common side effects may include abnormal uterine bleeding, vaginal thrush, nausea, fluid retention, weight gain, breast tenderness. Less common effects may be a rash at site of patch application, blurred vision, vomiting, bloating, intestinal cramps, pigmentation of skin on face, nose bleeds with nasal spray use. Rare but serious side effects may be blood clots, calf or chest pain and yellow skin (jaundice). Smoking increases the risk of serious side effects.

Oestradiol may interact with other sex hormones, antibiotics, diabetes medications (hypoglycaemics), warfarin, epilepsy medications (anticonvulsants), imipramine, corticosteroids, thyroxine and the herbs saw palmetto, alfalfa, dong quai, ginseng, liquorice and red clover. Do not use oestradiol nose spray at same time as other nose sprays.

It is very useful in managing the effects of menopause, and reduces the risk of osteoporosis after the menopause.

See also HORMONE REPLACEMENT THERAPY; OESTROGEN; SEX HORMONES

OESTRIOL

Oestriol (Ovestin) is a female sex hormone used as a table, pessary or vaginal cream for hormone replacement therapy in the menopause.

It should not be used in pregnancy, breastfeeding or children, but accidental usage in these situations is unlikely to be harmful. Use oestriol with caution in epilepsy, migraine, heart failure, high blood pressure, kidney disease, diabetes, porphyria or uterine disease, and not at all if suffering from liver disease, breast or genital cancer, blood clots, undiagnosed vaginal bleeding, endometriosis, porphyria or otosclerosis.

Side effects may include abnormal uterine bleeding, vaginal thrush, nausea, fluid retention, weight gain, breast tenderness. Unusual effects may include a rash, blurred vision, vomiting, bloating, intestinal cramps, pigmentation of skin on face. Severe but rare reactions may be blood clots, calf or chest pain and yellow skin (jaundice). Smoking increases the risk of serious side effects.

See also HORMONE REPLACEMENT THERAPY; OESTROGEN; SEX HORMONES

OESTROGEN

Oestrogen is a class of female sex hormone that is produced in the ovaries and to some extent the testes. Oestrogen is divided into several different types - oestrone, oestradiol and oestriol. Together they stimulate ovulation (the release of an egg from an ovary once a month) and the development of breasts, pubic hair and other sexual characteristics at puberty in women. The amount present in urine can be measured in the investigation of female
infertility, determination of menopause state and even sex determination, but blood measurements of a specific form of oestrogen, oestradiol, are more accurate. In urine the normal results in µg/24 hours are:

<table>
<thead>
<tr>
<th>Oestrogen</th>
<th>Male</th>
<th>Menstruating woman</th>
<th>After menopause</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oestrone</td>
<td>0 to 5</td>
<td>5 to 20</td>
<td>0.3 to 2.4</td>
</tr>
<tr>
<td>Oestradiol</td>
<td>0 to 5</td>
<td>2 to 10</td>
<td>0 to 1.4</td>
</tr>
<tr>
<td>Oestriol</td>
<td>0 to 10</td>
<td>5 to 30</td>
<td>2.2 to 7.5</td>
</tr>
</tbody>
</table>

A high level in females usually indicates sex hormone therapy, while in males it may be due to feminisation from taking female hormones or abnormal hormone production within body. A low level in women indicates infertility or menopause.

As a medication oestrogen has the common trade name Premarin, which is derived from the original rather unsavoury source of oestrogen, pregnant mare’s urine. It is used as a tablet, vaginal cream or injection for hormone replacement therapy in the menopause.

It should not be used in pregnancy, breastfeeding, children or males, but accidental usage in these situations is unlikely to be harmful. Use oestriol with caution in epilepsy, migraine, heart failure, high blood pressure, kidney disease, diabetes, porphyria or uterine disease, and not at all if suffering from liver disease, breast or genital cancer, blood clots, undiagnosed vaginal bleeding, endometriosis, porphyria or otosclerosis.

Side effects may include abnormal uterine bleeding, vaginal thrush, nausea, fluid retention, weight gain, breast tenderness. Unusual side effects may include a rash, blurred vision, vomiting, bloating, intestinal cramps, pigmentation of skin on face. Severe but rare reactions may be blood clots, calf or chest pain and yellow skin (jaundice). Smoking increases the risk of serious side effects.

It may interact with other sex hormones, rifampicin and the herbs saw palmetto, alfalfa, dong quai, ginseng, liquorice, red clover. Vomiting and abnormal vaginal bleeding are the only likely effects of an overdose.

See also HORMONE REPLACEMENT THERAPY; OESTRADIOL; OVARY; PHYTOESTROGENS; SEX HORMONES; STILBOESTROL

**OESTRONE**

Oestrone is a female sex hormone used only in combination with other forms of oestrogen for hormone replacement therapy in the menopause. It is not designed to be used in pregnancy, breastfeeding or children, but accidental usage in these situations is unlikely to be harmful. Use it with caution in epilepsy, migraine, heart failure, high blood pressure, kidney disease, diabetes, porphyria or uterine disease. Do not take oestrone if suffering from liver disease, breast or genital cancer or a history of blood clots.

Side effects may include abnormal uterine bleeding, vaginal thrush, nausea, fluid retention, weight gain and breast tenderness. Unusual side effects may include a rash, blurred vision, vomiting, bloating, intestinal cramps, pigmentation of skin on face, blood clots, calf or chest pain and yellow skin (jaundice). Smoking increases the risk of serious side effects.

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See also HORMONE REPLACEMENT THERAPY; OESTROGEN; SEX HORMONES

**OOCYTE CRYOPRESERVATION**

The freezing of an individual oocyte, an early stage of ovum (egg) development, in liquid nitrogen and then thawing it for fertilisation at a later date has now been achieved by some clinics. This is another way of a woman taking out insurance against future infertility if she is due to have chemotherapy or radiotherapy, has a family history of early menopause or wishes to significantly delay her child bearing for personal reasons.

This technique is more technically difficult than ovarian cryopreservation, and relatively few babies have been born using this procedure.

**OOPAUSE**

The fertility of a woman does not cease suddenly at menopause but drops steadily from about 35 years, with a sudden decrease in fertility occurring about ten years before menopause, an age that can only be calculated for each woman in retrospect. This sudden drop in fertility is sometimes referred to as the oopause. Unfortunately there are no simple blood tests that will determine the presence of the oopause.

**OSTEOPOROSIS**

Osteoporosis is a common bone condition affecting one quarter of women over the age of 50, in which there is a reduction of bone mass. There is normally a balance between the amount of bone being made and the amount being resorbed. In osteoporosis this balance is lost and less bone is manufactured than required, and bone resorbing cells...
become overactive.

The basic constituent of bone, calcium, drops to a dangerously low level, and the bones soften and may bend, break or collapse. Calcium is found in all dairy food (particularly cheese), sardines, shellfish, beans, nuts and tripe. Adults require up to 800 mg. of calcium, and children and pregnant women up to 1400 mg. a day. The structure of bones is being constantly renewed, and a lack of calcium over many years leads to a gradual deterioration in bone strength. Once women reach the menopause, the drop in hormone levels accelerates the loss of calcium from bones. It may be hereditary and is more common in petite, small-boned women.

Over the age of 50, half of all women will have a fracture due to osteoporosis, and one third of men over 70 will develop the same problem. Many of these fractures, particularly those in the vertebrae of the back, may have no symptoms.

Most patients do not know they have the disease until they fracture a bone (particularly the hip or a vertebra) with minimal injury, or on a routine X-ray their bones are seen to be more transparent than normal. Deformity of the back, severe arthritis, and neuralgia caused by the collapsing bones pinching nerves, can occur in due course.

Procedures similar to an X-ray, dual photon densitometry or dual-energy x-ray absorptiometry, can diagnose osteoporosis at an early stage. Doctors use both a T score (in which the patient's bone density is compared to that of a young adult) and a Z score (in which the patient's bone density is compared to those of a similar age) to determine if a patient has osteoporosis that is significant enough to warrant treatment. A Z score of -1 is significant.

A urine test for deoxypyridinoline may also be useful.

Prevention involves adding calcium to the diet before menopause, taking calcium and vitamin D supplements, and hormone replacement therapy after menopause. Regular exercise is important, as the minor stresses on the bones keep them stronger. In more serious cases, sophisticated, very effective medications (eg. alendronate, calcitriol, disodium etidronate, raloxifene, tibolone) that force calcium into bones to strengthen them, may be prescribed to be taken regularly for several years. Zoledronic acid may be used as a once a year infusion into a vein, and denosumab as a six monthly injection under the skin. As a last resort, injections of teriparatide may be considered.

Other factors that can help are reducing the intake of coffee and alcohol, and stopping smoking.

Control is good once the condition is diagnosed, but reversal of existing damage is difficult.

**OVARY**

The two ovaries are the main female reproductive organs. Shaped like an almond, each ovary is about 3 cm long, 1.5 cm wide and 1 cm thick. They lie in the pelvis, one on either side of the uterus. The ovaries have two functions - the development and release of eggs, and the production of hormones. All the eggs (ova) a woman will ever have - and considerably more than she will ever need - are contained in her ovaries when she is born. At birth, there are about two million immature eggs in each ovary. By puberty these are reduced to about 300,000, and only about 400 will be released during the childbearing years. The number of ova in the ovaries steadily decreases during middle life, and at the time menopause starts only 25,000 are left. The ovum (egg) is the largest single cell in the body, but still needs a powerful microscope to be seen.

Each egg (ovum) is surrounded by a small sac called a follicle. When puberty is reached, a cycle is established in which a few of the egg cells develop each month, with one reaching full maturity. When this happens the follicle bursts and releases the egg in the process called ovulation. A woman is fertile and can become pregnant a day or two either side of ovulation - and not at other times.

When an egg is released, it is swept into the adjacent Fallopian tube, the other end of which connects with the uterus.

The ovaries also produce the hormones oestrogen and progesterone. Oestrogen predominates during the ripening of the egg, which takes about two weeks. It is this hormone that causes the lining of the uterus to thicken and the body to prepare for pregnancy. When the egg is released, the production of the second hormone, progesterone, increases, preparing the lining (endometrium) still further and bringing it to total readiness for a fertilised egg. If there is no conception, the oestrogen and progesterone levels fall suddenly and the uterine lining is shed during menstruation. The
whole process then begins again. The monthly cycle continues throughout a woman's childbearing years from puberty to the menopause.

**FEMALE REPRODUCTIVE SYSTEM**

It is the female hormones that also give a woman her secondary sexual characteristics, for instance her broader hips than the male, her breasts, pubic and armpit hair, and her rounder, more feminine shape.

See also SEX HORMONES; UTERUS

**OVARY LARGE**

An enlarged ovary may be found on an internal examination by a doctor or on an ultrasound scan. The causes may include a simple cyst, follicular cyst, cystadenoma, polycystic ovarian syndrome, adenocarcinoma, teratoma, Fallopian tube abscess or a tumour.

See also OVARY

**OVARY TRANSPLANT**

The transplantation of ovarian tissue from one woman to another is not currently possible, but research into this technique is continuing. Any child produced by such a technique would not be genetically connected to the birth mother.

See also OVARY

**OVULATION**

Ovulation is the release of an ovum (egg) from a woman's ovary. This occurs monthly, about 14 days before the next menstrual period, and continues regularly from puberty to menopause.

Ovulation is stimulated by changes in the levels of follicle stimulating hormone and luteinising hormone, both of which are produced in the pituitary gland.

Ovulation may cease with the use of contraceptive pill or other hormonal contraceptives, and a wide range of medical and lifestyle conditions. These include pregnancy (so obvious, but sometimes forgotten to the embarrassment of both doctor and patient); emotional trauma (eg. loss of job, death in family); physical stress (eg. vigorous athletic training); serious illness (eg. major infection); poor nutrition (eg. lack of food, vomiting and diarrhoea); significant weight loss as a result of deliberate dieting, disease (eg. cancer) or psychiatric disturbance (eg. anorexia nervosa); tumours, cysts or cancer in an ovary that affect the regular cyclical production of oestrogen; pituitary gland disorders; a lack of thyroxine (hypothyroidism); Asherman syndrome; Addison's disease; the Stein-Leventhal syndrome; Turner syndrome
and congenital adrenal hyperplasia (adrenogenital syndrome) which affects the adrenal glands which sit on top of each kidney and stimulates them to produce abnormal steroids in the body which affect sexual development.

If the menstrual periods cease it may be due to a failure of ovulation or pregnancy.

See also FOLLICLE STIMULATING HORMONE; LUTEINISING HORMONE; OVARY

**PAGET’S DISEASE OF THE VULVA**

Paget's disease of the vulva is a rare, slow growing cancer in the skin of the vulva (lips of the vagina). It is classed as an adenocarcinoma type of cancer, and may have spread from an adenocarcinoma elsewhere in the body. It may also occur on the skin around the vulva. It may be mistaken for dermatitis when it first develops as it appears as an itchy, sometimes painful red patch and usually affects women after the menopause. It is very successfully treated by surgical excision, but the presence of any other adenocarcinoma in the body must be excluded.

See also VULVA

**PALPITATIONS**

Palpitations are excessively rapid and strong heartbeats that may be irregular in rhythm. They occur in everyone with exercise, anxiety, stress, pain or a fright, but usually settle quite quickly.

Heavy smoking, caffeine in cola drinks tea or coffee, excess alcohol, food sensitivities and some food preservatives and colourings may trigger palpitations.

Pregnant women generally have a faster heart rate, and hormonal surges may trigger brief episodes of palpitations.

Bacterial and viral infections, or any other disease that causes a fever will cause an increased heart rate while the fever is present.

Paroxysmal atrial tachycardia (PAT) is a very common condition, particularly in women. For no apparent reason, but sometimes because of hormonal changes during the menstrual cycle and menopause, the heart will start beating rapidly, usually at double its normal rate. This harmless but distressing condition may last for a few seconds or several hours before settling spontaneously.

Other causes may include a heart attack (myocardial infarct), atrial fibrillation (due to heart damage) and ectopic beats.

Less common causes for palpitations include anaemia, infections (endocarditis, myocarditis) or inflammation of the heart muscle, an overactive thyroid gland (hyperthyroidism), reflux oesophagitis, phaeochromocytoma (black-celled tumour of the adrenal glands) and da Costa syndrome (a psychiatric disturbance).

Medications such as salbutamol (Ventolin - for asthma), glyceryl trinitrate (Anginex - for heart pain), terbutaline (Bricanyl - for asthma), aminophylline (for lung conditions) and imipramine (for depression) may have palpitations as a side effect.

**PAP SMEAR**

Pap is short for Papanicoulou, the name of the Greek/American doctor who developed this cervical smear test in 1932. A Pap smear is used to detect any abnormality of the cervix, including infections and erosions.

Chronic infections of the cervix of which the patient is not aware can cause infertility and other problems, and a Pap smear can enable the doctor to diagnose these and prescribe appropriate treatment. Unquestionably, the main value of the Pap smear has been its ability to detect precancerous conditions of the cervix and cervical cancer at an early stage so that it can be treated. All women of any age who are sexually active should have regular Pap smear tests - generally every two years although once every three years may be enough for women who are past menopause.

The test is quite simple. The doctor introduces a collapsible metal or plastic tube, called a speculum, into the woman's vagina. This is painless although it may feel a bit intrusive. The speculum is shaped like a duck's bill. When the upper and lower blades are separated, the doctor can see the cervix, and a soft plastic brush is gently inserted into the opening of the uterus in the middle of the cervix and rotated. This lifts off a superficial layer of cells. The brush is then wiped across a glass slide to form a smear and is sprayed with a solution to preserve the cells.

The slide is sent to a pathologist who examines the smeared cells under a microscope and sends a report to the doctor. Sophisticated computers, that are more accurate than human technicians, are now being used in most laboratories to scan Pap smears for abnormalities. The collecting of the cells takes only a minute or so, and the report is usually available within a week.

The results that may be reported include:

- Normal smear - repeat in two years.
- Atypical cells - smear should be repeated in 3 to 6 months.
- CIN 1 dysplasia - colposcopy (examination of the cervix through a microscope) advised with repeat smears frequently.
- CIN 2 dysplasia - colposcopy and punch biopsy (small sample of abnormal tissue cut out) followed by appropriate treatment (eg. LLETZ procedure) and follow-up.
- CIN 3 carcinoma in situ - definitive treatment necessary (eg. cutting out abnormal tissue in a cone

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biopsy procedure) and careful follow-up.
- Invasive carcinoma - definitive treatment essential (eg. hysterectomy, irradiation).

Vaginal infections are often also reported on Pap smears.
CIN is an index of cervical intraepithelial neoplasia (the degree of abnormality in the cervix cells sampled).
An abnormal result from a smear test does not mean that the woman necessarily has cancer, but it does mean that she should have a further test - this will usually be a colposcopy. If as a result of the colposcopy an early stage of cancer is detected, the abnormal cells may be burnt away by diathermy or laser, or a cone-shaped area of tissue may be excised. These forms of treatment will not interfere with a woman's normal sexual functioning or her ability to fall pregnant. Only if the cancer has already spread will she need to have the uterus removed in a hysterectomy, or undergo radiation therapy.

Cancer of the cervix is one of the more common forms of cancer in women, and yet if all women had a Pap smear regularly it could be totally prevented.

At the same time as a Pap smear is done, the doctor will usually insert two gloved fingers into the woman's vagina and feel for any abnormalities of the uterus or ovaries. The doctor may examine the rectum as well, and will probably check the breasts and blood pressure at the same visit.

See also VAGINAL SPECULUM

PHYTOESTROGENS

Phytoestrogens are a hormone found in some plants, particularly soy beans, beans, sprouts, cabbage, linseed oil and corn. Even in concentrated form when used as a medication, they have only a minimal effect on human oestrogen levels and conditions such as the menopause and breast cancer that are generally affected by human oestrogen.

See also SEX HORMONES

PINEAL GLAND

The pineal gland or body is about the size of a grain of rice and sits in the centre of the brain between the two hemispheres. Its function was completely unknown until about 1970, and even today is not fully understood.

Sometimes known as the third eye, it is far more developed in primitive animals such as frogs and some lizards. In humans it is able to sense the difference between light and dark by nerve connections to the part of the brain (optic chiasma) where images from the eyes are first processed.

In simple terms the pineal gland is the clock of the body, and by releasing the hormone melatonin it is able to regulate body functions that change with time. This includes the slowing of the body's metabolic (biochemistry) activity at night, the cyclical nature of a woman's menstrual periods, and the time at which puberty should commence, and possibly when menopause should occur.

See also PITUITARY GLAND

PIPERAZINE OESTRONE

Piperazine oestrone sulfate (Ogen) is an oestrogen (female sex hormone) used for hormone replacement therapy (HRT) in menopause and to ease the discomfort of a dry vagina after menopause.

These tablets are not designed to be used in pregnancy, breastfeeding or children, but accidental usage in these situations is unlikely to be harmful. It should also not be used in liver disease, breast or genital cancer, blood clots or history thereof, otosclerosis, breast cancer, genital cancer, undiagnosed vaginal bleeding or sickle cell anaemia. Use with caution in epilepsy, migraine, heart failure, high blood pressure, kidney disease, diabetes, porphyria or uterine disease (eg. fibroids). A pre-treatment gynaecological and general examination is essential, and piperazine oestrone should be used in conjunction with a progestogen if still menstruating.

Side effects may include abnormal uterine bleeding, vaginal thrush, nausea, fluid retention, weight gain and breast tenderness. Unusual side effects may include a rash, blurred vision, vomiting, bloating, intestinal cramps, pigmentation of skin on face and rarely blood clots, calf or chest pain and yellow skin (jaundice).

Piperazine oestrone may interact with other sex hormones, warfarin, anticonvulsants (treat epilepsy), hypoglycaemics (treat diabetes), pethidine, theophylline, beta-blockers, phenothiazines, thyroxine, tricyclic antidepressants, cyclosporin, bromocriptine and caffeine. Smoking increases the risk of serious side effects.

See also HORMONE REPLACEMENT THERAPY; SEX HORMONES

PITUITARY GLAND

The pituitary gland (or hypophysis) is situated at the base of the brain about eye level in the centre of the skull and is connected directly by the pituitary stalk to a part of the brain known as the hypothalamus. Operations on the pituitary
MENOPAUSE A to Z

gland can be performed through the nose, as the pituitary gland rests on top of the nasal cavity.

The pituitary not only has its own activity but also regulates the activity of other glands, acting as the conductor of the endocrine (gland) orchestra. It is no bigger than the size of a walnut. In total the pituitary gland produces nine different hormones.

The human growth hormone is one of these hormones and possibly the most important. If too little of this hormone is produced during childhood, the child’s growth will be stunted and it will be a dwarf. If too much is produced, the child will grow to an abnormal size.

Other hormones stimulate the thyroid gland and the adrenal glands.

Antidiuretic hormone again acts on the kidneys and regulates the balance of water and salts in body fluids.

The follicle stimulating hormone tells the female ovaries and the male testicles when to produce oestrogen and testosterone, and the hormone prolactin stimulates the manufacture of milk in nursing mothers and controls the menstrual cycle.

At the end of pregnancy when the time comes for the child to be born, the pituitary stimulates the muscles in the uterus to contract and start labour.

Adrenocorticotrophic hormone (ACTH) controls the activity of the outer part of the adrenal glands, which sit on top of each kidney.

Melanocyte stimulating hormone (MSH) is produced in the anterior part of the pituitary gland and stimulates melanocytes (skin pigment cells) to produce the black coloured melanin that gives darker colours to skin and hair.

The direct connection of the pituitary gland, and through it the other endocrine glands, to the brain and thus the nervous system is the reason why our mental and emotional states can influence our hormone levels and vice versa. If the pituitary gland malfunctions, the effects can obviously be wide-ranging because of the gland’s importance in so many parts of the body.

See also HORMONES

POSTMENOPAUSAL VAGINITIS
See ATROPHIC VAGINITIS

PREMATURE MENOPAUSE
See PREMATURE OVARIAN FAILURE

PREMATURE OVARIAN FAILURE

One in every one hundred women suffers from premature ovarian failure, a condition in which the ovary ceases to function normally at a far earlier age than expected. It is really an onset of the menopause at an early age, usually defined as before 40 years of age. One in very thousand women has premature ovarian failure before the age of 30 years.

Because many women are now delaying pregnancy until their career is established, premature ovarian failure is becoming a steadily more significant problem in the community.

Affected women cease their periods and are unable to fall pregnant. They may start to lose some of their feminine characteristics as the breasts sag and pubic hair becomes sparse.

There are usually no warning signs of a premature menopause, and the first a woman knows about it is when her periods cease. The most common time for the problem to occur is actually after a pregnancy, abortion or miscarriage when the menstrual periods fail to restart. There is a family tendency though, so it may be able to judge the risks of premature ovarian failure by the experience of older sisters or the woman’s mother.

To refer to premature ovarian failure as premature menopause is not strictly correct, as more than half of these women still have eggs (ova) in their ovaries at the time the condition is diagnosed, but the mechanism for the maturation and release of these eggs is faulty.

There is no specific cause for the condition in most cases although in some cases there is an obvious cause such as chemotherapy or irradiation for pelvic cancer, and surgery or injury to the pelvis that damages the ovaries. Rare causes of premature ovarian failure include the disease galactosaemia, severe pelvic infections, some autoimmune diseases (eg. Addison disease, myasthenia gravis), severe diabetes, thyroid disease and a number of rare syndromes.
Abnormalities of the X chromosome that are passed from one generation to the next are the most likely cause of the problem in families who experience the condition across the generations. Screening techniques can now detect these abnormalities in an individual if necessary.

There is no evidence that premature ovarian failure is becoming more common, it is merely that it appears so because so many women are starting their families at an older age.

The diagnosis can be confirmed by tests on blood sex hormone levels, ultrasound scans of the ovaries and finally an ovarian biopsy using a laparoscope.

Unfortunately the treatment of premature ovarian failure is unsatisfactory as the medications used to stimulate ovulation may not work. The solution may be to use donor eggs in a GIFT procedure. Women who know that they are due to have pelvic irradiation or chemotherapy may decide to preserve some eggs in liquid nitrogen for use at a later date.

Premature ovarian failure may not be permanent, and years after the diagnosis is made the woman may suddenly start menstruating and ovulating again for no known reason. Up to one in ten women with premature ovarian failure becomes pregnant without further treatment.

See also OVARY

QUEEF

Queef is a term for vaginal flatus, and occurs during sexual intercourse when air is pumped into the vagina by the thrusting motion of the penis, which acts as a piston into the sleeve of the vagina. It sounds just like normal flatus but is not smelly. A queef causes no medical problems and is not dangerous. Some couples find it more common in some sexual positions than others.

See also VAGINA

RALOXIFENE

Raloxifene (Evista) is a medication used for the prevention of osteoporosis after the menopause. It was released in 1999 to assist women who are unable to tolerate normal postmenopausal hormone replacement therapy. It must never be used in pregnancy (causes deformities of foetus), breastfeeding, children, if still menstruating, with a medical history of blood clots or if male. It is for use in postmenopausal women only. Use with caution in liver disease and high triglyceride level. Any abnormal uterine bleeding must be diagnosed before raloxifene is used.

Side effects may include hot flushes, leg cramps, sinus congestion and rarely blood clots. It may interact with oestrogen supplements, cholestyramine, ampicillin and warfarin.

RAYNAUD’S PHENOMENON

Raynaud’s phenomenon is a distressing spasm of small arteries, almost invariably affecting women. Attacks are usually triggered by cold conditions, such as entering an air-conditioned building or a cold climate. Other triggers may be hormonal changes, stress and anxiety, exercise and some foods. Raynaud’s disease is the most common cause, but in most cases no specific cause can be found, although it may be associated with rheumatoid arthritis, CREST syndrome and scleroderma.

The hands go white then blue, swell and become very painful episodically. It usually starts in the teenage years or early twenties, may remain lifelong, and affects one in every five women, but often eases after the menopause.

Patients should keep their hands warm, and alcohol in low doses may be useful. A wide range of tablets (eg. alpha-blockers) and ointments can be used to dilate the tiny arteries in the fingers. As a last resort, operations to cut the nerves that cause the artery spasm can be performed.

SEX HORMONES

Sex hormones are produced by the ovaries in the woman and the testes in the man, to give each sex its characteristic appearance. In men, they are responsible for the enlargement of the penis and scrotum at puberty, the development of facial hair and the ability to produce sperm and ejaculate. In women, the sex hormones that are produced for the first time at puberty cause breast enlargement, hair growth in the armpit and groin, ovulation, the start of menstrual periods, and later act to maintain a pregnancy.

If the sex hormones are reduced or lacking, these characteristics disappear. This happens naturally during the female menopause and the male andropause. During the transition from normal sex hormone production to no production in the menopause, there may be some irregular or inappropriate release of these hormones, causing the symptoms commonly associated with menopause such as irregular periods, irritability and hot flushes. After the menopause, the breasts sag, pubic and armpit hair becomes scanty, and the periods cease due to the lack of sex hormones. Men also go through a form of menopause, the andropause, but more gradually and at a later age, so the effects are far less obvious than in the female.

Sex hormones, and many synthesised drugs that act artificially as sex hormones, are used in medicine in two main areas - to correct natural deficiencies in sex hormone production; and to alter the balance between the two female
hormones (oestrogen and progestogen) that cause ovulation, to prevent ovulation, and therefore act as a contraceptive.

It is now well recognised that hormone replacement therapy (HRT) in middle-aged women who have entered the menopause significantly improves their quality of life by not only controlling the symptoms of the menopause itself, but by preventing osteoporosis (bone weakening), reducing the apparent rate of ageing, reducing the risk of dementia, and possibly reducing the risk of cardiovascular disease (ie. heart attacks and strokes) after the menopause. Women who have both their ovaries removed surgically at a time before their natural menopause, will also require sex hormones to be given regularly by mouth, patch or implant.

Female sex hormones can also be used to control some forms of recurrent miscarriage and prolong a pregnancy until a baby is mature enough to deliver, to control a disease called endometriosis, and to treat certain types of cancer.

The female sex hormone oestrogen can be given as a tablet, patch, vaginal or skin cream, implantable capsule that is placed under the skin or as an injection. If the woman has not had a hysterectomy, she will need to take progestogen as a pill or patch in a cyclical manner every month or two. This may result in a bleed similar to that of a natural menstrual period (but usually much lighter), but gives the added benefit of protecting the woman against uterine cancer.

The common sex hormones fall into the categories of oestrogens, progestogens and androgens (male sex hormones).

**OESTROGENS**

Oestrogens include dienoestrol, ethinylestradiol (Estigyn), oestradiol, oestriol (Ovestin), etonogestrel (active ingredient in the implantable contraceptive Implanon), conjugated oestrogen (Premarin), stilboestrol and pipierazine oestrone (Ogen). They are used in contraceptive pills, for hormone replacement therapy during and after the menopause, and are usually combined with a progestogen unless the woman has had a hysterectomy. Side effects may include abnormal menstrual bleeding, vaginal thrush, nausea, fluid retention, breast tenderness, bloating and skin pigmentation. These side effects can usually be overcome by adjusting the dosage. They should not be used in pregnancy, breastfeeding, children, and patients with liver diseases or a bad history of blood clots. Care must be used in patients with breast cancer, epilepsy and hypertension.

**PROGESTOGENS**

Progestogens include dydrogesterone (Duphaston), medroxyprogesterone (Provera), progesterone, gestrinone, norelgestren and norethisterone (Primolut-N, Micronor, Noriday). They are used to control abnormal menstrual bleeds, endometriosis, for preventive contraception, “morning-after” contraception, hormone replacement therapy and premenstrual tension. Medroxyprogesterone is an injectable progestogen that may be used for contraception, to treat certain types of cancer and endometriosis. As a contraceptive it is given every three months. Side effects include the cessation of menstrual periods, breakthrough vaginal bleeding, headaches, and possibly a prolonged contraceptive action (up to 15 months). The other progestogens usually have minimal side effects, but they may include headache, abnormal vaginal bleeding, insomnia, breast tenderness, nausea and sweats. They should not be used in pregnancy, liver disease, and patients with blood clots or breast lumps. Care must be used in patients with hypertension and diabetes.

Danazol (Danocrine) is a special type of sex hormone that acts against oestrogen and is used to treat endometriosis, severe menstrual period pain and severe breast pain. Side effects are common and may include acne, weight gain, excess body hair, retained fluid, dry vagina, sweats and the development of a deep voice. It must never be used in pregnancy, or in patients with pelvic infection, liver disease, blood clots or heart failure.

**ANDROGENS**

The androgen (male sex hormone), testosterone, is available in synthetic form as a tablets, as an injection (Sustanon), and as implants. They are used to treat conditions such as failure of puberty to occur, pituitary gland dysfunction, impotence, decreased libido (in both sexes), and male osteoporosis. Side effects are unusual, but the prostate gland must be checked regularly for enlargement. They are used in women to treat breast cancer and in both sexes for severe anaemia. Natural lack of the male sex hormone testosterone will cause the man to be impotent and sterile. Synthetic testosterones include fluoxymestrone (Halotestin), mesterolone (Proviron), and oxandrolone (Lonavar). Fluoxymestrone is used to treat breast cancer, osteoporosis and aplastic anaemia. Mesterolone and testosterone are used for male infertility and impotence. Oxandrolone aids short stature, male puberty failure and aplastic anaemia. Side effects may include penis enlargement, infertility, fluid retention, increased body hair and nausea in men, and if used in women irregular periods, deep voice and an enlarged clitoris may develop. They must not be used in pregnancy, heart, liver or prostate disease.

Antiandrogens counteract the action of testosterone. The only common hormone in this group is androcur. It is used to treat excess body hair, severe acne and loss of scalp hair in women, and prostate cancer in men. Side effects may include reduced libido, tiredness, nausea, weight increase and irregular menstrual periods. They must not be used in
pregnancy, and patients with blood clots or liver disease.

See also ANDROPAUSE; ANDROSTENEDIONE; HORMONES; HORMONE REPLACEMENT THERAPY; OESTROGEN; OVARY

**SEXUAL INTERCOURSE PAIN**

The pain experienced by a woman during sexual intercourse is called dyspareunia by doctors. It may occur superficially near the outside as the penis initially enters the vagina, during deep penetration of the penis, or may be a mixture of both.

Infections of the vagina caused by a fungus (eg. thrush) or bacteria may inflame both the vagina and the vulval tissue around the outside. These infections are usually accompanied by a discharge. Irritation of the inflamed tissue during sex will cause pain.

Deeper infections in the lower part of the belly involving the bladder (cystitis), urethra (tube that drains urine from the bladder), bowel (eg. diverticulitis), lining of the belly (peritonitis) or an abscess in the pelvis will be aggravated by intercourse.

A lack of the female hormone oestrogen after menopause may lead to a dryness of the vagina, which makes sex difficult and painful. The natural lubrication of the vagina is maintained by glands that are stimulated by oestrogen. Some women may notice that their vagina is drier at some stages of their menstrual cycle than at others due to variations in the level of oestrogen. Underactive thyroid, pituitary or adrenal glands, which affect the functioning of all cells in the body, may also cause vaginal dryness.

A prolapse (dropping) of the uterus, usually as a result of childbirth, age or obesity, may cause a backache that is aggravated by sex.

Causes of superficial pain during sex include vulvodynia, Bartholin’s gland infection (glands near the opening of the vagina that produce its natural lubricating fluid), genital herpes infection (painful ulcers around the vulva), vaginismus (strong spasm of the muscles in the vagina that prevents the penis from entering), an allergy to soaps, perfumes, detergents in underwear or other substances may cause a swelling and inflammation of the delicate tissues of the vulva.

Causes of deep pain during sex include cervicitis, salpingitis and pelvic inflammatory disease (infections of the fallopian tubes and other organs in the pelvis), endometriosis, fibroids (hard balls of fibrous tissue that form in the muscular wall of the uterus), an ectopic pregnancy (a foetus in the Fallopian tubes instead of the uterus) and tumours or cancer of the cervix, uterus or ovaries.

See also QUEEF; VAGINA

**STILBOESTROL**

The synthetic sex hormone stilboestrol (diethylstilboestrol, or in the USA stilbestrol) may be used as a vaginal pessary for female hormone replacement in menopause and vaginal dryness after the menopause. One or two pessaries are inserted high into the vagina at night.

It is not to be used in pregnancy, breastfeeding or children but accidental usage in these situations unlikely to be harmful. Use stilboestrol with caution in epilepsy, migraine, heart failure, high blood pressure, kidney disease, diabetes, porphyria or uterine disease. Do not take it if suffering from liver disease, breast or genital cancer, or blood clots.

Side effects may include abnormal uterine bleeding, vaginal thrush, fluid retention, weight gain and breast tenderness. Uncommonly a rash, bloating and intestinal cramps may occur. Severe but rare side effects include blood clots, calf or chest pain and yellow skin (jaundice). Smoking increases the risk of serious side effects. Interactions occur with other sex hormones.

It is now considered to be a rather old-fashioned form of hormone replacement therapy as other better suited hormones are now available, and its use is steadily declining.

See also HORMONE REPLACEMENT THERAPY; OESTROGEN; SEX HORMONES

**SWEATING EXCESS**

Increased sweating (hyperhidrosis or diaphoresis) is obviously associated with hot conditions, but may also occur with anxiety and fear, eating hot (spicy hot or heat hot) foods, significant pain from any cause, and drinking excess alcohol. There are a number of medical conditions, which may also be responsible.

Any bacterial or viral infection that causes a fever will have excessive sweating associated with it. Some infections, such as malaria, AIDS and tuberculosis, may result in sweating out of proportion to the level of fever.

The menopause occurs in the late forties and early fifties in most women. The symptoms of menopause include irregular menstrual periods, hot flushes, sweats, headaches, irritability, personality changes, breast tenderness, tiredness and pelvic discomfort.

The thyroid gland in the front of the neck produces the hormone thyroxine, which acts as an accelerator for every cell in the body. Excess thyroxine will cause sweating, weight loss, diarrhoea, poor absorption of food, nervousness,
heat intolerance, rapid heart rate, warm skin, tremor and prominent eyes.

A heart attack (myocardial infarct) may cause chest pain and pressure, shortness of breath and the patient often sweats profusely. The seriousness and effects of a heart attack vary depending on which part, and how much of the heart, is affected.

Other causes of excess sweating include many different types of cancer (particularly in advanced stages), a blood clot in one of the major arteries within the lungs (pulmonary thrombosis), poorly controlled diabetes, overactive pituitary gland (eg. from a tumour or infection) and hyperthyroidism (overactive thyroid gland). Some psychoses may cause patients to have abnormal fears that cause the normal responses to fear, such as rapid heart rate, sweating and pins and needles sensation.

Rarer causes of excessive sweating include the Irukandji syndrome (excessive and abnormal response to some jellyfish stings), porphyria, Frey syndrome, phaeochromocytoma (tumour of the adrenal glands) and the Riley-Day syndrome (occurs only in Jewish people).

The chorda tympani syndrome has the unusual symptom of abnormal sweating under the chin after eating.

Aluminium chloride can be used as a solution to treat excessive sweating from the arm pits, hands and feet. Diphenamid methylsulfate (Prantal) is an anticholinergic powder used on the skin to reduce excessive sweating. Propantheline is the most common oral medication used to ease excessive sweating that has no identifiable cause.

See also BODY ODOR; HYPERHIDROSIS; NIGHT SWEATS;

TELOGEN EFFLUVIUM
Telogen effluvium is a form of diffuse hair loss. Both men and women have fewer hairs as they grow older, but excessive generalised hair loss from the scalp, and sometimes other hairy areas of the body (eg. eyebrows, pubic area, chest) may be a symptom of disease such as sex hormone disturbances (eg. pregnancy, menopause), an over or underactive thyroid gland, pituitary gland diseases, many other serious illness, drugs used to treat cancer, radiation therapy, too much vitamin A, and sudden and excessive loss of weight (eg. anorexia nervosa). Extreme mental or physical stress may also be responsible. Blood and other tests may be done to exclude specific causes but are often normal.

If a cause can be found this should be treated. When the cause is medication, the hair usually grows back when it is ceased.

See also BALD; HAIR LOSS

TESTOSTERONE
Testosterone is the male sex hormone (androgen) produced in the testicles. A small amount is also produced in the adrenal glands and in the female ovaries.

Production starts at the onset of puberty and continues throughout a man’s life, but the levels start to slowly decline from the fifties onwards, finally fading to nothing in the eighties as the man passes through the andropause (the male equivalent of the menopause). It is responsible for the development of male characteristics (eg. facial hair, penis enlargement at puberty) in a man, and is produced in response to hormonal signals from the pituitary gland, which lies under the brain.

The total amount of testosterone present in the blood can be measured. The normal levels are:-

<table>
<thead>
<tr>
<th></th>
<th>Male</th>
<th>Female (16 to 40 years)</th>
<th>Female (40+ years)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>12 to 34 nmol/L</td>
<td>0.4 to 3.6 nmol/L</td>
<td>2 to 10 pmol/L</td>
</tr>
<tr>
<td>Before</td>
<td>0.4 to 0.7 nmol/L</td>
<td></td>
<td></td>
</tr>
<tr>
<td>puberty</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Low levels occur with male hypogonadism (under active testes), panhypopituitarism (under active pituitary gland under the brain), male menopause (andropause), delayed puberty, Addison disease and other causes of sterility.

High levels may be found with a virilising adrenal tumour (tumour of adrenal glands on kidneys that produces testosterone) and the Stein-Leventhal syndrome. In women there are higher levels during pregnancy and with oestrogen therapy.

A second blood test that can be performed is to measure the free testosterone. This measures the amount of the hormone in the blood that is not attached to a protein and is circulating freely. This free testosterone test is a less accurate test than testosterone. It is normally used to test for signs of female hirsutism (excess facial hair and other male characteristics) and male sexual dysfunction. The normal results are:-

<table>
<thead>
<tr>
<th></th>
<th>Female 16 to 40 years</th>
<th>Female 40+ years</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>3 to 12 pmol/L</td>
<td>2 to 10 pmol/L</td>
</tr>
</tbody>
</table>
MENOPAUSE A to Z

<table>
<thead>
<tr>
<th>Age Range</th>
<th>Testosterone Levels (pmol/L)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male 16 to 40 years</td>
<td>60 to 130</td>
</tr>
<tr>
<td>Male 41 to 70 years</td>
<td>40 to 100</td>
</tr>
<tr>
<td>Male 70+ years</td>
<td>30 to 90</td>
</tr>
</tbody>
</table>

The interpretation of high and low results is the same as for total testosterone.
See also ANDROPause; SEX HORMONES

TESTOSTERONE DEFICIENCY

About one in every 200 men has a low testosterone levels and without an adequate amount of testosterone the testes will not produce sperm. There will also be other clinical problems from low testosterone levels such as impotence, obesity, tiredness, minimal beard growth, weak muscles, hot flushes and mood changes.

Men reach their peak testosterone production levels in their twenties, after which there is a slow decline, but some men have an excessive rate of decline, resulting in fertility problems in mid-life. Men who have had testicular damage by injury, surgery or irradiation may have a rapid decline in testosterone levels.

If testosterone deficiency is proved by blood tests, the level of testosterone in the body can be boosted in a number of ways including tablets, patches, implants, creams and injections.

One or two tablets or capsules must be taken twice a day after food. Testosterone supplements must be used with caution in heart disease, kidney disease, migraine, diabetes, epilepsy and high blood pressure. They must not be used by men suffering from prostate or breast cancer (yes, this can occur in men). Unwanted penile erections, retention of fluid, nausea and oily faeces are possible side effects. Testosterone tablets interact with cyclosporin and the hypoglycaemics used to treat diabetes.

The injections must be given every two to three weeks, and result in significant fluctuations in testosterone levels that may result in unwanted side effects. The implants can last from three to six months and give relatively stable blood levels of testosterone.

The patches are applied daily and work in much the same way as the tablets, but without having to be processed by the liver as they are absorbed directly into the blood. Depending on the desired dose, one to three patches are applied to soft smooth skin every night and replaced after 24 hours. Some men find that they cause skin irritation and they may fall off in hot sweaty climates.

Testosterone is also used in postmenopausal women in combination with oestrogen and as a libido aid in women with reduced sexual desires. It is not to be used in pregnancy or breastfeeding.

See also TESTOSTERONE

TIBOLONE

Tibolone (Livial) has been described as the hormone replacement therapy (HRT) you can use when you don’t want to use HRT. It was released in 2000 as a completely new method of managing the symptoms of the menopause and seems to suit many women very well, while others cannot tolerate it. It also prevents osteoporosis after the menopause. The normal dosage is one tablet a day.

It is not to be used in pregnancy, breastfeeding, children or if suffering from undiagnosed vaginal bleeding, hormone dependent tumours (eg. breast cancer), significant heart disease, recent stroke, blood clots or severe liver disorders. Use tibolone with caution in patients with high cholesterol or triglycerides, liver disease or risk of blood clots (thromboses). It should not be started until a year after the last menstrual bleed before menopause.

Side effects may include weight gain, dizziness, headache and belly pain. Less commonly migraine, dermatitis, disturbed vision, skin irritation, nausea, constipation, breast pain and vaginal irritation may occur. Rare effects may include blood clots, liver damage and abnormal vaginal bleeding.

Interactions are possible between tibolone and other hormone replacement therapies used in menopause, anticoagulants (eg. warfarin), barbiturates, carbamazepine and rifampicin. Nausea and abnormal vaginal bleeding are the only likely effects of an overdose.

See also HORMONE REPLACEMENT THERAPY; SEX HORMONES

TRIGONITIS

Trigonitis is an inflammation of the lower part (trigone) of the bladder around the openings of the ureters and urethra (tube leading out of the bladder). It usually occurs in women and is caused by a lack of oestrogen after the menopause or after a total hysterectomy causes the tissue of the vagina and adjacent bladder base to become thin, less supple, easily damaged and the sensory nerves in the bladder base become exposed to urine.

Painful frequent passage of urine and aching pain in the lower belly occur. The involuntary passage of urine with a cough or exercise is also common and bladder and urinary tract bacterial infections can easily occur.

It is diagnosed by cystoscopy (passing a tube into the bladder through which it can be inspected).

Treatment involves long-term oestrogen supplementation by local application of cream in the vagina, tablets, patches, implants or injection. Progestogens may need to be given as additional treatment with the oestrogen. The
prognosis is good while oestrogen hormone replacement therapy is continued.
See also INCONTINENCE OF URINE

URINARY TRACT
The urinary tract consists of the kidneys, ureters, bladder and urethra. The prostate gland is considered to be part of the male reproductive system.

URINATION FREQUENT
Passing more urine than normal (polyuria) or passing urine more often than normal (pollakiuria) may be due to drinking more fluid (particularly coffee, tea, cola or alcohol which stimulate urine production), cold weather, pregnancy (when pressure is put on the bladder by the growing baby), anxiety, fright or fear, but there are many different kidney, bladder and other organ diseases that may also be responsible.

If the bladder becomes infected by bacteria (cystitis) the patient will have a fever, feel pain low down in the front of the belly, will pass urine more frequently, and pain will be felt when passing urine. In severe cases the urine will be cloudy and sometimes blood will be seen in the urine.

Diabetes mellitus results in a higher than normal amount of sugar (glucose) circulating in the blood. The symptoms of untreated diabetes are unusual tiredness, increased thirst and hunger, belly pains, excess passing of urine, weight loss despite a large food intake, itchy rashes, recurrent vaginal thrush infections, pins and needles, dizziness, light headedness and blurred vision.

A prolapse (bulging) of the bladder into the front wall of the vagina in a woman will make passing urine difficult and uncomfortable, and increases the risk of infection. The bladder cannot be completely emptied, so the woman will find that she has to pass small amounts of urine very frequently. Damage to the vagina during childbirth is the most common cause of a prolapse.

Other causes of polyuria include prostatitis (bacterial infection of the prostate gland), kidney failure (from persistent infection or inflammation of the kidney, a poor blood supply to the kidneys, severe high blood pressure, or a number of rarer diseases), systemic lupus erythematosus (autoimmune condition), and a number of psychiatric conditions, particularly those associated with anxiety and depression, may increase bladder irritability.

Diuretics are medications designed to increase urine production in conditions such as high blood pressure, heart failure and kidney failure. Other medications may have increased urination as a side effect.

Rare causes of frequently passing urine include diabetes insipidus (failure of the pituitary gland in the centre of the head), Hand-Schueller-Christian syndrome, Cushing syndrome (over production of steroids in the body, or taking large doses of cortisone), Addison disease (adrenal gland failure), hyperparathyroidism (over activity of the parathyroid glands in the neck), acromegaly and Bartter syndrome.

See also URINATION NIGHTLY

URINATION NIGHTLY
Getting up during the night in order to pass urine (nocturia) is a real nuisance, but one that is endured by a very large percentage of the adult population. Women are five times as likely to need to do this than men, and the problem steadily worsens with age.

Women who have had children are more affected, as the structures in the pelvis that control the bladder are stretched during childbirth, and never quite return to their former strength. Women also often find that the problem is worse at different times of the month, usually just before a menstrual period, and worse again after menopause as the lack of hormones also reduces tissue strength in the pelvis.

The kidney does not produce urine at a constant rate, but reduces its urine output at night, while increasing it during the day. This cycle becomes less pronounced with age as the controlling hormone from the pituitary gland under the brain fails to be produced in sufficient quantities.

There are a number of medical conditions (eg. cystitis, pyelonephritis, diabetes), which can increase urine production, or irritate the bladder to cause nocturia.

See also URINATION FREQUENT

URINATION PAIN
Distressing pain experienced when passing urine (dysuria) is due to inflammation of the bladder, surrounding tissues, or the urethra (tube from the bladder to the outside).

If the bladder becomes infected by bacteria (cystitis) the patient will have a fever, feel pain low down in the front of the belly, will pass urine more frequently, and pain will be felt when passing urine. In severe cases the urine will be cloudy and sometimes blood will be seen in the urine.

Pyelonephritis is an infection of a kidney that causes aching pain in a loin, fever, general feeling of being unwell, and sometimes frequent uncomfortable passing of urine.

Prostatitis is a bacterial infection of the prostate gland at the base of the penis. Symptoms include difficulty in
passing urine, dysuria, pelvic and penis discomfort and pain, and sometimes a fever.

Pelvic inflammatory disease is a widespread infection of the organs and tissues within a woman's pelvis, often caused by sexually transmitted diseases. Pain occurs with passing urine as the infected tissue moves as the bladder size suddenly shrinks.

Urethritis is an infection of the urethra by a bacteria or virus. It is usually a sexually transmitted disease, and there is often a discharge from the urethra, that is more easily seen in men.

Reiter syndrome causes conjunctivitis, inflammation of the urethra, arthritis and painful ulceration of the gums. Its cause is unknown, but settles slowly without treatment, although recurrences are possible.

A prolapse (bulging) of the bladder into the front wall of the vagina in a woman will make passing urine difficult and uncomfortable, and increases the risk of infection.

**UTERUS**

The uterus or womb is the hollow muscular organ in women in which a baby grows. It is located in the pelvis and is loosely tethered to the pelvic walls by two ligaments on each side, the round and broad ligaments, giving it a high degree of mobility. It leans forwards when the rectum is full and backwards when the bladder is full. During pregnancy it expands upwards as far as the ribs. In a non-pregnant woman the uterus looks something like an upside-down pear. It is about 7.5 cm. long and 5 cm. wide. The cavity of a non-pregnant uterus is small and narrow, virtually a slit.

The upper part of the uterus is called the body, and is attached to the two egg-conducting Fallopian tubes. It narrows at the lower end to form the cervix, or neck, which protrudes into the vagina and provides a passage for sperm to enter and menstrual blood to flow out.

The wall of the uterus is made up of three separate layers. The outer layer is a tough protective covering called the perimetrium. In the middle is a thick layer of muscle called the myometrium, while the inner lining consists of a blood enriched mucous membrane called the endometrium.

Each month the endometrium thickens to prepare for the implantation of a fertilised egg. If this does not eventuate, all but the deepest part of the endometrium is discarded, leading to the monthly menstrual period. This takes place about 14 days after an egg has been released. The menstrual flow consists of the liquefied dead endometrium together with some blood lost in the process. If fertilisation, or pregnancy, does occur, the embryo is implanted in the endometrium and nourished by the mother's blood supply. The mother's and the embryo's blood circulations interact through the placenta.
The muscles in the myometrium are among the strongest in the human body. They expand to accommodate the growing foetus, and when the time comes for the baby to be born they engage in a series of contractions, helping the hitherto tightly closed cervix to open and propelling the baby into the vagina during labour. About six weeks after pregnancy, the muscles have shrunk again and the uterus has returned to its normal size.

See also FIBROIDS OF THE UTERUS; HYSTERECTOMY; MENSTRUAL PERIOD; VAGINA.

VAGINAL BLEEDING ABNORMAL

Abnormal vaginal bleeding (metrorrhagia) that occurs away from the normal menstrual period, may be caused by conditions in the vagina, uterus and ovaries, or may be hormonal.

A woman may not realise that she is pregnant, and an abnormal bleed may be caused by a very early miscarriage. Up to 15% of all pregnancies end as a miscarriage, usually because of some abnormality in the developing foetus or placenta.

During the menopause, instead of cycling smoothly and evenly through the monthly changes, sex hormone levels start to change suddenly and inappropriately. This causes irregular menstrual periods, hot flushes, headaches, irritability, personality changes, breast tenderness, tiredness and pelvic discomfort. Postmenopausal bleeding (PMB) is a particular sinister sign and requires immediate investigation.

Taking the oral contraceptive pill will normally regulate the menstrual cycle very effectively, but if a pill is missed, or fails to work because of vomiting, diarrhoea or interaction with other medications (eg. antibiotics), the sudden change in hormone levels may cause an irregular bleed. A similar effect can occur when taking hormone replacement therapy after the menopause.

Endometriosis is a sinister disease which is due to cells that normally line the inside of the uterus becoming displaced, and moving through the Fallopian tubes to settle around the ovary, in the tubes themselves, or on other organs in the belly. In these abnormal positions they proliferate, and when a menstrual period occurs, they bleed as though they were still in the uterus. This results in pain, adhesions, damage to the organs they are attached to, and infertility.

A psychological stress (eg. death in family, losing job) may affect a woman’s pituitary gland under the brain and thus her sex hormone levels so that her menstrual periods stop or become frequent and irregular.

An intrauterine contraceptive device (IUD) may irritate the uterus to cause a vaginal discharge and irregular bleeding.

Other uterine causes of abnormal vaginal bleeding include fibroids (balls of scar tissue in the muscular wall of the uterus), pelvic inflammatory disease, ectopic pregnancy (pregnancy outside the uterus), a prolapsed uterus (uterus slips down into vagina), irritation of the uterus after an abortion, a hydatidiform mole (an overdeveloped cystic placenta) and polyps, and tumours or cancer of the uterus (endometrial carcinoma).

Vaginal causes include an infection of the vagina (vaginitis), ulceration and bleeding from the wall of the vagina, ulcerated or cancerous cervix or vagina, an injury to the vagina from over enthusiastic sex, using mechanical sex aids or a fall astride a bar.

Ovarian causes include mittelschmerz (slight blood loss and pain at the time of ovulation), and tumours, cysts or cancer of the ovary.

Any disease that slows the rate at which blood clots, and drugs used to slow blood clotting (eg. warfarin) may cause abnormal vaginal bleeding if the dose is too high.

See also MENSTRUAL PERIOD; MENSTRUAL PERIODS HEAVY; MENSTRUAL PERIODS, LACK OF; VAGINAL DISCHARGE

VAGINAL CANCER

Cancer that starts in the vagina is rare and usually occurs in women between 50 and 70 years of age, but cancer may spread to the vagina from the vulva, cervix, endometrium (lining of the uterus) or ovaries. Most primary vaginal cancers are a form of squamous cell carcinoma. There is some evidence that those who have a human papillomavirus (HPV) infection are more likely to develop this form of cancer. An HPV vaccine is now available.

The usual first symptom is abnormal bleeding (particularly after sexual intercourse), pain and a foul discharge. The diagnosis can be confirmed by a smear or biopsy taken from the suspicious area, which can usually be easily felt during a vaginal examination and seen using a vaginal speculum.

Available treatments include surgical removal of the vagina and a hysterectomy or irradiation. Chemotherapy is not normally appropriate.

See also VAGINAL BLEEDING ABNORMAL; VULVAL CANCER

VAGINAL DISCHARGE

A vaginal discharge can vary from a minimal clear discharge due to excess production of the normal moisture in the vagina, to copious quantities of pus, and blood.

The most common cause is leucorrhoea, which is not a disease. The vagina is a moist cavity, and like the mouth,
there are glands that produce the mucus that lubricates the vagina. If these glands become over active because of sexual stimulation, or taking oestrogen as a medication (eg. in the contraceptive pill or for symptoms of menopause), too much mucus will be produced, and overflow as a discharge. Some women produce more mucus than others, and may have long-term trouble with this type of loss.

The hormonal stimulation of the uterus and vagina that occurs with pregnancy will often cause a clear discharge, particularly in the last couple of months.

Thrush is a fungal infection of the vagina caused by Candida albicans, and virtually every woman will have several episodes of this infection during her life. The fungus lives normally in the gut, but when there is moisture on the skin around the vagina and anus from sweating or sexual stimulation, the fungus can migrate into the vagina. Sexual intercourse helps the fungus into the vagina where it finds a nice warm, moist environment in which to live and prosper. The result is a white vaginal discharge that irritates the skin of the vulva, and creates an intense itch that is socially unacceptable to scratch in public.

A single-celled animal, Trichomonas vaginalis, may cause infections in a woman's vagina, and the urethra (urine tube) of both men and women. The infection is transmitted by sexual intercourse. In women, the vaginal infection causes a foul-smelling, yellow/green, frothy discharge. There may be mild itching or soreness around the outside of the vagina.

Other possible causes include oozing from a damaged or ulcerated cervix (particularly after childbirth), a forgotten tampon or other foreign body (particularly in little girls), an intrauterine contraceptive device (IUD), bacterial infections of the vagina (vaginitis), tumours or cancers of the cervix, vagina or uterus, pelvic inflammatory disease (widespread infection of the uterus and other organs within the pelvis), intestinal worms that migrate into the vagina, and after an abortion a coloured or smelly discharge is a serious sign that there may be an infection in the uterus.

A vaginal discharge in a young girl must be considered to be due to sexual abuse until proved otherwise. Infections and injury to the vagina are responsible.

See also VAGINA; VAGINAL BLEEDING ABNORMAL

VAGINAL HYSTERECTOMY
A hysterectomy in which the uterus, with or without the ovaries and fallopian tubes, is removed through the vagina is called a vaginal hysterectomy. It usually involves using a laparoscope through the abdomen as well as incisions into the top of the vagina.

See also HYSTERECTOMY

VAGINAL ITCH
See VULVA ITCH

VAGINAL MUCOUS
The mucus present in the vagina changes during the menstrual cycle, and this is something that can be detected by the woman, her partner or doctor in order to determine the time of ovulation.

For most of the month the vaginal mucus is thick and slippery, but at the time of ovulation it becomes clear and stringy. The change is actually quite easy to detect, as there is a marked difference between the two forms of mucus.

The mount of vaginal muous, and therefore lubrication, steadily decreases after the menopause.

VAGINAL PROLAPSE
A vaginal prolapse is the protrusion of an organ into the vagina, caused primarily by gravity. A uterine prolapse occurs when the uterus (womb) moves down the vagina and completely fills it. Occasionally the cervix, which is the lowest part of the uterus, may protrude through the vulva to the outside. Part of the bladder which is in front of the vagina, may push back into the vagina causing a bladder prolapse (cystocoele). The rectum (last part of the large intestine) may push forward into the vagina as a rectal prolapse (rectocoele). Occasionally there is a combination of all three types of prolapse.

During childbirth, the vagina becomes very stretched, and does not always return to its original size. The muscles around the vagina become weakened and the ligaments supporting the uterus may become stretched and sag. All these factors may lead to vaginal prolapse years later.

A cystocoele may cause difficulty in passing urine, urinary infections and incontinence. A rectocoele causes difficulty in passing faeces and other bowel problems. A uterine prolapse causes discomfort and pain, and ulceration of the cervix may result in infections and bleeding.

The prolapse may be repaired by an operation that uses strong natural material in the pelvis and artificial slings to support the prolapsing organ. In elderly women, a ring inserted into the vagina may be used to hold prolapse in the correct place. Younger women can prevent the problem by pelvic floor exercises under the guidance of a physiotherapist both before and after the delivery of their babies. The results of surgery are reasonable, but recurrences are possible.
VAGINAL RING
A vaginal ring may be used to support a uterus that is prolapsing (falling down the vagina), particularly in elderly women who are not suitable for surgery. The firm rubber or plastic ring is inserted by a doctor high into the vagina, and left there long term to support the uterus.
A vaginal ring impregnated with sex hormones can also be used as a contraceptive.
See also VAGINAL PROLAPSE

VAGINAL SPECULUM
In order to see the inside of the vagina a bivalve vaginal speculum is used. The speculum can be made of metal or plastic and has two blades that are at right angles to its handle. The blades are inserted closed together but once in the vagina they are opened by means of a lever and hinge at their base. The examiner can then look between the blades as they hold open the walls of the vagina to see the cervix and vagina, and perform procedures or tests (eg. Pap smear).
In Australia, Canada and the USA a bivalve (two bladed) vaginal speculum is normally used with the woman lying on her back. In Europe, a single bladed Sims speculum is used to pull back the back wall of the vagina while the woman lies on her side facing away from the doctor.
See also PAP SMEAR; VAGINA

VAGINAL ULTRASOUND
A vaginal (or transvaginal) ultrasound is used to examine the structures in a woman’s pelvis in great detail. The ultrasound probe, which is about the size of a finger, is introduced into the vagina and generates the sound wave that is detected by the receiving equipment.
There is no pain, heat or discomfort other than the sensation of the probe in the vagina. Much more detailed pictures of the uterus and ovaries can be obtained by a vaginal ultrasound than one performed on the abdomen only. Abnormalities of the uterus (eg. fibroids) and ovaries (eg. cysts) can be readily detected.
More importantly, the thickness of the endometrium lining the uterus can be determined to see if it is thick enough to nurture an inseminated egg. A thickness of over 5 mm at the time of ovulation is considered normal. On the other hand, if there is a strong echo from the ultrasound, despite an adequate thickness, the endometrium may be too dense to allow implantation.

It is not unknown for a scan to reveal a forgotten intrauterine device (IUD) - a fairly definite cause of infertility.

See also VAGINA

VAGINAL WIND
See QUEEF

VULVA
The external female genitals are the area of sexual arousal. The vulva (female pudenda) consists of two pairs of fleshy folds or lips, and a small highly sensitive organ, called the clitoris. The outer of the two pairs of lips is called the labia majora (Latin for larger lips) and the inner pair the labia minora (Latin for smaller lips). The labia minora are sometimes hidden by the labia majora and sometimes protrude beyond them. The space surrounded by the lips is called the vestibule and contains the entrance to the vagina and the opening of the urethra - the tube through which urine is passed from the bladder.

The clitoris is located at the front junction of the labia minora and is the main centre of female sexual sensation. It contains erectile tissue and when stimulated enlarges in much the same way as the male penis.

Situated on each side of the vaginal opening are small Bartholin glands, which are stimulated by sexual arousal and release a mucous-like secretion to provide lubrication for intercourse.

The pad of fat covered by pubic hair at the front of the vulva is called the mons veneris (mound of Venus), or sometimes the mons pubis (pubic mound). The area extending from the back of the vulva to the anus is the perineum.

The perineum is sometimes cut by the doctor during childbirth (an episiotomy) to avoid tissues being torn, and then repaired immediately afterwards.

See also VULVAL CANCER; VULVODYNIA

VULVA ITCH
The skin surrounding the external female genitals, the vulva, is very sensitive because it is designed to respond to sexual stimulation. It is also situated in a part of the body that generates moisture and is without much airflow. If the airflow is cut off even more than usual by wearing tight clothes so that the skin gets even less ventilation, it is likely to protest by developing an extreme itch. On the other hand, if the vulva is dried out by over frequent washing, especially with perfumed soaps, the skin will itch in rebellion against the interference to its normal environment.

If an infection, such as thrush, or an allergy takes hold in the genital area, the sensitive skin will almost always develop an itch in addition to a rash or any other symptoms.

Occasionally, the vulva develops cancer, in which case it will not only be red and itchy but hard to the touch.

Vulval itching is common in young girls before they begin their periods and in older women after menopause. It is thought to be related to the production of sex hormones, especially to the lower level of oestrogen present after menopause.

Women with diabetes also sometimes experience irritation in the genital area, because they are more likely to develop thrush and other infections.

Generally doctors prescribe a soothing cream and advise washing with a mild unscented soap once a day, or with no soap at all but using sorbolene or some similar substitute. Cotton underwear allows the skin to breathe. The area will probably be dry and sore as well as itching, and a lubricant during intercourse may be helpful.

VULVAL CANCER
Vulval cancer is a form of skin cancer and usually takes the form of a squamous cell carcinoma, but rarely may be a form of adenocarcinoma (gland cancer) known as Paget’s disease of the vulva. It is treated by surgically removing part or all (vulvectomy) of the vulva.

See also VULVECTOMY
VULVAR DYSTROPHY
Vulvar dystrophy occurs in elderly women who develop dryness, scaling, pustules and sometimes lichen sclerosis of the vulva due to a prolonged lack of lubrication after the menopause.
See also VULVA

VULVAR VESTIBULAR SYNDROME
See VULVODYNIA

VULVAR VESTIBULITIS
See VULVODYNIA

VULVECTOMY
The surgical removal of the vulva in the treatment of vulval cancer of severe lichen sclerosis is called vulvectomy. The skin of the labia minora and majora are usually removed, and sometimes the clitoris and surrounding lymph nodes are also removed (radical vulvectomy).
See also VULVA; VULVAL CANCER

VULVITIS
Vulvitis is inflammation of the vulva due to infection, disease or injury.
See also VULVA; VULVODYNIA

VULVODYNIA
Vulvodynia (burning vulva syndrome, vulvar vestibular syndrome or vulvar vestibulitis) is a painful condition affecting the external genitals (vulva) of sexually active women due to inflammation of the tiny lubricating glands in the skin of the vulva. The cause is unknown, but attacks sometimes follow a vaginal thrush infection.

The vulva appears normal, but there is intermittent tenderness and pain of the vulva and opening into the vagina, which is worse with pressure or friction (eg. during sex, inserting a tampon, bike riding or tight clothing) and persists for an hour or more once triggered. Muscle spasms in the vagina triggered by fear of pain occurring may cause vaginismus and make sexual intercourse impossible.

Patients should apply heat to the area (hot bath, warm water bottle) when pain occurs. Steroid creams may reduce inflammation and amitriptyline tablets my relax the woman and help her cope and patients should avoid using soap in the area. Sex can be assisted by an understanding partner, applying local anaesthetic ointment, adequate foreplay and the use of lubricants. The condition often persists for months or years before settling spontaneously.
See also SEXUAL INTERCOURSE PAIN; VULVA

VULVOVAGINAL
A condition that relates to both the vulva and vagina (eg. infection, thrush) is described as vulvovaginal.
See also VAGINA; VULVA

WASTING
In medicine, wasting is used to describe an organ or tissue that is shrinking in size. This may be due to an inadequate blood supply, poor nutrition, or nerve damage to the affected part of the body. In some cases a lack of hormones may lead to shrinkage of the organ (eg. breast shrinkage after menopause).

A reduced blood supply can starve the tissue of essential nutrients and oxygen. If nerves are damaged, there are no signals from the brain or spinal cord to activate the tissue (eg. muscles) so that they gradually shrink. In paraplegics there is no nerve stimulation to muscles below the level of the spinal damage, and the muscles shrink and waste away.

Generalised wasting may be due to a number of diseases including diabetes mellitus, thyrotoxicosis, Addison's disease, phaeochromocytoma, occult carcinoma, hypopituitarism, anorexia nervosa and even some fad diets.

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