

PREGNANCY

Genetically it can be argued that the drive to reproduce is one that is difficult to resist. To reproduce in the healthiest way possible to give the offspring the best start in life is probably the best gift that can be given to anyone.

Introduction

The whole process of pregnancy can be divided into 3 distinct sections; preconception, pregnancy and the lactation stage. However before we can get to conception it is important to take a look at the every increasing problem of infertility.

Infertility

Before we can look at nutrition during pregnancy it is important to be aware that infertility to some degree affects a large number of couples. There are several known causes that contribute to this situation; here we address the main nutritional factors involved. Where there is no obvious infertility due to low male sperm count or with the woman releasing eggs, the following information identifies areas of dietary factors that may improve a couple's fertility.

Overweight

In couples where either partner is overweight or for that matter underweight, and where there is a failure to become pregnant after a year of normal intercourse they should consider improving their diet to obtain the normal weight for their height. This should be achieved through a combination of good wholesome nutritious foodstuffs and sensible exercise. "Crash" weight loss programs or the use of bulking foodstuffs (high protein milk drinks, etc.), should be avoided. Where weight is a factor, the research indicates that infertility is equally divided between males and females. An overweight female can experience problems in releasing eggs from the ovaries (ovulation), which can account for approximately 10% of infertility in women. For the male, other factors contribute to the failure of the sperm to fertilise the egg due to inadequate weight control. There are standard age/weight ratios known, and these should be consulted. For those couples who live a full and busy life, gymnasium exercise and other extreme exertion exercise sports are inappropriate with the possible exception of walking machines. The build-up of muscle in exercise, coupled with the reduction of fatty tissues is best commenced as a gentle process of brisk walking periods of 20 minutes' duration once or twice daily rather than the sudden exertion periods that other forms of exercise cause.

Alcohol

Alcohol should be eliminated during the period of preconception. For the male, alcohol presents the body with a specific reproductive tract toxin which impairs sperm fertility. A period of abstinence will often facilitate partial recovery of male sperm fertility. With the woman, alcohol reduces fertility due to the body's release of

a hormone known as prolactin, which also contributes to menstrual cycle dysfunction. It is true that a glass of good quality wine occasionally can be beneficial as a source of valuable minerals, however, if difficulties are experienced during the preconception period, then abstinence would be advisable.

Caffeine

Whether in the form of coffee, tea, carbonated soft drinks, chocolate or other foodstuffs, caffeine increases the difficulty of becoming pregnant for couples.

Smoking

It has been shown to contribute to pre-conception difficulties to a significant level with couples experiencing infertility problems. Therefore, this habit should be discontinued.

Generic Drugs

Treatment for infertility by the use of drugs is undesirable as a first consideration, as the side effects reduce nutrient uptake from the diet and the drugs are not without side effects. Several disease processes can affect fertility; two of the common ones are those who suffer from the distressing coeliac condition, which is known to contribute to infertility problems. This condition is due to the sufferer's failure to metabolise gluten in the gut. Chlamydia, often dormant for many years, has been also known to contribute to infertility, and it is advisable to have a check-up to see if this infection is present. Other contributing factors such as irritable bowel syndrome, colitis and diseases of the gut have also been found to contribute. Antacids used to reduce stomach acid, together with antihistamines, may cause folic acid deficiency, which is essential for normal healthy pregnancy. Finally, it has been shown that the taking of marijuana is significantly more dangerous than tobacco; it reduces sperm count, and lowers blood testosterone (male hormone).

Supplementation Factors

Folic acid: Many women become infertile due to folic acid (folate) deficiency. Disorders of the lining of the small intestine adversely affect the absorption of folate. Government recommendations are for 400mcg to be taken before and during the early stages of pregnancy.

Vitamin B6: Supplementation has been demonstrated to be beneficial in cases of female infertility (particularly amenorrhoea - infrequent menstrual periods). One of the activities of Vitamin B6 is to raise levels of progesterone (female hormone), which is known to be necessary to maintain the uterine lining where the growth of the fertilised egg takes place. However, high doses of Vitamin B6 have been demonstrated to be unhelpful. More than 50mg daily without professional advice from a suitably qualified practitioner is ill-advised.

Vitamin B12: Deficiency of Vitamin B12 has been demonstrated to reduce fertility and even cause infertility in both males and females. Supplementation has been

demonstrated to restore fertility.

Vitamin E: Inadequate intake of Vitamin E has been linked with reproductive and sexual dysfunction. Sperm production and infertility are identified with males deficient in Vitamin E.

Minerals:

Zinc: supplementation increases sperm count, blood testosterone levels and levels of other male hormones. Zinc status, is most important for both male and female, as Zinc deficiencies in female have also been linked to underweight babies. It is of interest to note that the placenta contains a very high proportion of zinc indeed, which has a beneficial involvement with many metabolic processes.

Magnesium: is needed throughout the body in many enzyme processes. Pregnancy will aggravate any deficiency already present and such a deficiency will contribute towards painful uterine contractions at the end of pregnancy. A low magnesium level in the body may also be associated with miscarriage or premature birth.

Oxidants and Anti-Oxidants

Oxidants are very damaging to health. Oxidants are oxygen-free radicals, which are highly reactive substances found in air pollution, rancid foodstuffs and foods. They are also produced in the body as by-products of nutritional imbalance where they can damage cell membranes which results in tissue destruction. The process whereby these unstable and highly reactive molecules arises is due to the loss of an electron that keeps them stable. The free radical then searches for a replacement electron; however, they are indiscriminate attacking and destroying other healthy cells which then sets up a chain reaction. Several commercial foodstuffs, among them margarines and low fat spreads are implicated in this process and therefore should be avoided; they damage sperm and can lead to infertility. Anti-Oxidants are substances found in food and are defensive in both tissue and fluid where they combat oxidant activity provided the dietary intake is sufficient. Key anti-oxidants are vitamin C, vitamin E, beta carotene, bioflavonoids, selenium and zinc. Green leafy vegetables, together with cauliflower, carrots and garlic all offer sources as powerful as anti-oxidants. It should be noted that they should be lightly cooked or preferably eaten raw to attain the highest levels of the nutrients. The darker green leaves offer the higher anti-oxidant values, and the deeper orange in colour the carrots, the better. Organic food sources offer far better anti-oxidant activity than the commercially grown sources.

Preconception

This is arguably the most important part of the process as it is the time during which the mother and father to be, prepare both their bodies and minds to the forthcoming pregnancy, so that they can be as healthy and ready as possible for the new life.

To give you the best chance of producing a healthy baby you will need to prepare your bodies as far in advance as possible. Ideally start to prepare 6 months before you plan to conceive, but at least 3 months, as it is during this period that the sperm and ova commence their maturation process. During these processes both are extremely vulnerable to nutritional deficiencies and toxins. Therefore as well as improving the nutritional intake of the diet it is also important to reduce any toxic load in the body, which is best done in the first 3 months of preconception planning. The second three months are a time for maintaining good health and building up the nutritional reserves in the body to be able to support the new life.

It is vital that both the man and woman take care to improve their diet and overall health particularly in this stage to ensure that their sperm and ova are as healthy as possible before conception occurs.

Basic Recommendations:

- 1) Stop smoking, and drinking alcohol, reduce or preferably eliminate caffeine intake.
- 2) Increase the amount of pure, clean water, as water taken in, to approximately 4 pints per day.
- 3) Eat less processed and more whole preferably organic foods in the diet. Particularly concentrate on fruit and vegetables to build up micronutrient levels. To increase essential fatty acid content try to increase the fatty fish portion of the diet.
- 4) Take more exercise. Good health does not come from merely inserting the right ingredients you need to get your body to use those ingredients as well. Exercise is an excellent way to prepare your body for the exertion of pregnancy.

Contraception

If either the contraceptive pill or the coil have been used as contraceptive methods then their negative effects need to be balanced before conception. Both these methods tend to raise copper levels in the female body and lower zinc levels. In addition the pill also tends to raise vitamin A levels but lower vitamin B and vitamin C levels.

Heavy Metals and Bacteria

As well as trying to make sure you take in all the helpful nutrients and lifestyle changes there are also some things to avoid, particularly during pregnancy and preconception:

Heavy Metals

As well as the essential minerals such as zinc and magnesium, there are also undesirable minerals called heavy metals which our bodies are regularly exposed too. The four primary heavy metals are: Mercury, Lead, Aluminium and Cadmium. All of these are toxic to the body and have been linked to infertility problems, miscarriages, premature births, malformed and underweight babies. Therefore it is important to try and avoid them and get them out of the body as quickly as possible. Although dental treatment is free on the NHS during pregnancy it is not advisable to have any amalgam fillings put in or removed during this time as this will expose both you and your baby's body to an increased level of toxic mercury, which is a major component of amalgam. Aluminium enters the diet via pots and pans, foil, tap water, salts and many antiperspirants. We breathe lead from car polluted air, and absorb it from paints, tinned foods and tap water. Tobacco smoke contains cadmium and is absorbed directly into the bloodstream of both the active and passive smoker.

There are some heavy metals that are essential to the body in tiny amounts, but which are toxic at high concentrations. One of these is copper. Copper is more prolific now than it has been before as our water is delivered to us through copper pipes and we often wear copper or brass accessories. Copper compounds are mixed into swimming pools to keep them clean and hair dyes often also contain it. However the most common reason for copper contamination is from contraception. Both the coil and the pill raise copper levels to the extent that even after you stop using them without the proper restorative action your body can still remain contaminated.

Fluoride has been shown to poison a comprehensive range of enzymes, and may be involved with other health concerns too. Therefore it is best to avoid fluoridated water and fluoride toothpaste particularly during this stage of life.

Removal of toxins

As well as avoiding putting toxins into the body in the preconception phase it is particularly useful to get as many toxins out of the body as possible. The following foods and nutrients are particularly helpful in removing toxins from the body which will improve health.

Supplements

- 1) Vitamin C and Zinc are both helpful in reducing cadmium levels, which is particularly helpful for detoxifying a smoker's body.
- 2) Zinc, Calcium, Iron Vitamin E, Vitamin B1 and Vitamin B2 taken together with the Vitamin B Complex can help protect against lead toxicity.
- 3) Selenium is particularly helpful at reducing mercury levels in the body
- 4) Beta carotene helps in general detoxification by helping to activate necessary enzymes.

- 5) Chromium and Manganese are also protective against heavy metal toxins.
- 6) The essential fatty acids found within flaxseed (linseed) and evening primrose oils are very helpful in helping the body build healthy cells.

Foods

Yoghurt, garlic (particularly raw), onions, bananas, apples and pears help to decrease the absorption of toxins and remove them from the body in part because of the natural pectins that they contain.

Increasing the vitamin and mineral content of the diet:

As well as improving the freshness of the diet and reducing the processed components it is a good idea to add supplemental nutritional support as well if you are not already doing so. If desired to support the diet, both future parents may wish to take:

1 Comprehensive Multivitamin and mineral daily

1 Antioxidant daily

Restore probiotics to help support the friendly bacteria in the gut which are the foundation of health.

Specifically the mother to be may want to take:

Extra B vitamins including 400 µg Folic acid per day

Extra Essential Fatty acids through supplements such as: Evening Primrose Oil and Flaxseed or fish oil

Folic Acid

The value of Folic acid supplementation during preconception and pregnancy has been brought to our attention on numerous times in the last few years. There is good reason for this singling out as an essential supplement due to the fact that there has been a wealth of research showing its value in helping to prevent neural tube defects. So much so that the Government's Chief Medical Officer has recommended that women who are trying to become pregnant and those in the first 12 weeks of pregnancy should have an intake of 400 µg Folic Acid per day. This recommendation has come about not only because the research shows this amount to have the greatest benefit but also because it is nearly impossible to be able to find this amount that naturally occurs in the diet.

More than anything else at this time of life supplemental Folic acid is vital; but it is also important to make sure that both future parents have healthy bodies and a good all round nutrient intake.

Bacteria and the Immune System

The principle defence system of the body is the immune system. Throughout life you will find that the stronger the immune system, the healthier you will be. Naturally during pregnancy and preparation for pregnancy you want to keep as healthy as possible so that you can also pass on a healthy immune system to your offspring.

When a child is born it has no bacteria, good or bad in its digestive tract, but within a short space of time this situation changes and the gut is soon teeming with billions of bacteria, both those essential to our well-being and others not so useful. It is therefore important to give your baby's friendly bacteria the best start to life by making sure that the mother's gut has a good balance of helpful bacteria during the pregnancy and while breast feeding.

The best way of ensuring a good bacterial colony in your gut is to supplement your diet with an active probiotics supplement and if desired friendly bacteria food such as inulin or Fructo-oligo saccharides that have been found helpful in supporting the selective growth of the friendly bacteria. Supplemental probiotics (friendly bacteria) are particularly helpful following a course of antibiotics or after any "tummy" upset. A good probiotic will not need to be taken everyday forever as the bacteria once established in the gut if fed a healthy diet will quite happily proliferate on their own, however whenever a need arises boost your probiotics supply and it will make the world of difference to not only the health of your digestive system but also to your immune system and whole body.

Disease causing bacteria

Whether you have had rubella (German measles) or not, go to your practitioner for a test to confirm your immunity. Catching rubella while pregnant would very likely harm your baby. It is always a good idea to discuss any concerns regarding any illnesses, or medication that you are on with your practitioner as well. Some medicines may alter your fertility, and x-rays are known to adversely affect reproductive health too. It is also a good idea for both partners to be tested for genito-urinary diseases to make sure that everything is working well.

Everyday we are under attack from environmental bacteria or toxins, as such you may need to take extra care while preparing to carry a new life. Certain bacteria such as some found in the soil and some found on dirty cat litter can be quite damaging to the developing foetus and so it is important to avoid contact with these sources. Simply wearing rubber gloves will help if you want to continue gardening while pregnant.

Whole food diet

The whole food diet mentioned above needs to be carried through the full term of the pregnancy and to support the mother who can otherwise feel isolated during this period it is helpful if the father accompanies her in the regime (it will benefit his health too anyway).

Pregnancy

Pregnancy increases the body's requirements for a whole range of nutrients as shown below but there are other nutrients that are also helpful to the offspring during pregnancy. Phosphatidyl choline has been shown to cause long-term memory enhancement in the offspring. Flaxseed / linseed oil can make pregnancies less eventful, making deliveries easier and producing healthier offspring. There are also some herbs that are thought to be beneficial during this period such as Basil, which helps circulation. In addition, Raspberry leaves have a number of effects on the female reproductive system, but are advised with caution during early pregnancy. Raspberry leaf tea is an easy way to obtain the benefits of raspberry leaf, and can be drunk during the last 8 weeks of pregnancy to help tone the uterus. This is believed to make contractions more efficient and therefore shorten labour. Finally there is Witch hazel which when applied topically as an ointment can alleviate the breast pain associated with mastalgia and ingested can help to prevent miscarriages.

Supplements for Pregnancy ideally food state where available

A multivitamin and mineral

Essential Fatty acids – Fish oil is an excellent source of the omega 3 family and worth focusing on during pregnancy as it is so important to healthy brain eye and cellular development.

Restore Probiotics

B complex – 1 tablet twice daily

Extra antioxidants paying particular attention to a good selenium intake.

Zinc 15mg elemental – 1 tablet daily

Iron (not sulphate) – 10-17mg daily dependent upon measured iron levels

Morning Sickness

Introduction

Around 50% of pregnant women experience vomiting at some time during their pregnancy, usually starting before the 6th week and ending around the 12th week. It is thought to be due to the rise in hormones, which stimulates the vomiting centre in the brain stem.

There is nothing dangerous or abnormal about morning sickness, however women who prepare for their pregnancy several months before conception have been found to suffer less frequently. Such preparations include a carefully planned diet to suit their individual needs in addition to exercise and lifestyle changes to ensure optimum health and fitness before, during and after pregnancy.

If you are already in the throws of morning sickness however, don't despair. There are several possible remedies that can alleviate the nausea and vomiting and make pregnancy a far more enjoyable time.

How can it be prevented?

Prevention in this situation, as with so many others, is by far the best course of action. Good preparation before pregnancy ensures the mother's body is in balance and ready to cope with a growing child. Drinking plenty of water every day (at least 4 pints are recommended) ensures the body is able to meet its full potential. Every process in the body requires water, and pregnancy adds an extra demand, therefore it is essential that all the fluid lost each day in urine, breath and sweat is at least replaced if not exceeded.

A good diet for Mums and Dads to be is one high in fresh foods, avoiding as many processed and 'artificial' products as possible. Eating plenty of fruit and vegetables every day ensures a good supply of antioxidant nutrients to fight off disease, fibre to cleanse the body and essential vitamins and minerals for growth of the foetus and maintenance of the mother. If at all possible some or all of these fruits and vegetables should be organic to lower the toxic load on the body caused by environmental chemicals such as pesticides. By beginning this diet before conception healthy eggs and sperm are ensured, resulting in a healthy foetus and baby.

This may not seem directly to help alleviate morning sickness, but 'Foresight' (the association for pre-conceptual care) has found that Mothers on its programme suffer far less from this complaint. Perhaps the vomiting is designed to rid the body of toxins, which increase when the mother has to deal with not only her metabolic wastes, but also those of another human being. Another theory is that the nausea and sickness occur as a result of lowered blood sugar, as it often occurs first thing in the morning when the stomach is empty and energy levels need replenishing. Therefore the concentration on a good diet, which consequently ensures a more even supply of sugar to the blood, helps to prevent morning sickness occurring.

How can it be alleviated?

All is not lost if the time for this preventative treatment has passed and you are already in the early stages of pregnancy. There are several measures that can be taken to alleviate the symptoms, without resorting to anti-emetic drugs which thalidomide showed us are very undesirable during early pregnancy.

Ginger is the most frequently recommended herb for alleviating stomach upsets and has been seen to be effective in relieving morning sickness. Chewing a small piece of the root or adding ginger cordial to water can help the nauseous feelings to subside.

Peppermint and spearmint teas are all very effective anti-emetics. They can be used to calm the stomach in the morning, and be drunk throughout the day too. This will not only serve to normalise the stomach's activity, but also reduce your caffeine intake if tea and coffee are substituted with them. This can only be a good thing for a body getting used to the strain of pregnancy.

You may feel it worthwhile consulting a qualified homeopath during pregnancy to keep your body in peak condition. Specifically for morning sickness they may dispense tabacum or one of a host of other remedies that may be more suited to your particular personality and disposition.

As mentioned above, morning sickness is thought to be at least partly due to the fall in blood sugar. Therefore it may help to get up and have breakfast early, and / or have supper before going to bed. In either case something fairly plain would be most appropriate, especially at night so that it does not lie too heavily in the stomach.

Conclusions

Morning sickness is a normal part of pregnancy for many women and nothing to worry about. However, it can be a very disturbing and upsetting time.

Prevention is the best medicine and a good diet before conception is as important for a healthy mother and baby as the food eaten during pregnancy.

Everyone is different, and there are no definitive answers to morning sickness. You need to listen to your own body and try to define what it is asking for. Peppermint and spearmint teas can be very helpful.

References

1. Bradley, S.G. and Bennett N. 1995. Preparation for pregnancy. Argyll publishing.
2. The British Medical Association Complete Family Health Encyclopaedia. 1990 CLB

Postpartum and Lactation

One of the key minerals involved in pregnancy and a healthy immune system is Zinc. In order to initiate contractions the female body needs to increase its copper levels and subsequently decrease the zinc levels. After birth however the ratio of these two minerals needs to revert back to zinc being in higher concentrations in order to help the mother to adjust to the post partum experience and respond to the needs of her baby. It is thought that post natal depression is linked to an incorrect ratio between zinc and copper as well as some other mineral deficiencies. Therefore it is important to make sure that the mother has enough zinc in her body to be able to respond to her changing demands and that she takes extra zinc after the birth of the baby to make up for the large amount lost in the placenta. Most other animals eat the placenta after birth to make up for this mineral deficiency but this is something not yet considered acceptable amongst humans.

It is obvious that breast milk is the most suitable and nutritious food for a growing baby as it is designed to supply all the requirements of the baby, from brain development through to helping to set up the right friendly bacteria in the baby's gut and strengthening the baby's immune system. For the milk to be as good as it can, the mother must be as healthy as she can, so that sufficient nutrients can pass through the milk into her offspring. As such the dietary advice regarding good, preferably organic wholefood should still be followed but in addition the mother may wish to supplement her diet with:

Supplements – post partum and during lactation (ideally food state)

Multivitamin, mineral and Essential Fatty acid supplements

Extra Calcium, Magnesium, selenium and zinc

Restore probiotics

Formula feed

For one reason or another many babies are fed some formula feed at some point during their first few months. Although formula feeds have improved as more knowledge is gained in what makes an ideal food for baby they are not as good as a healthy mother's breast milk. They can however perform an excellent substitute when needed and although it is well worth observing baby to see whether it reacts to the milk at all. Many babies that have difficulty with regular formula feed thrive well when it is replaced with a goat milk based feed. Don't be afraid to try alternatives if your baby is not doing as well as you might expect or is unsettled. It may be something they are eating. On this subject it is interesting to note that formula fed babies tend to have a different bacterial composition in the gut than breast fed babies so they may also benefit from some supplemental probiotic bacteria designed to meet their needs (typically containing a number of bifidobacteria).

Summary

With the appropriate nutritional supplements supporting a healthy whole food diet the chances of conception resulting in a healthy baby are considerably increased. Both parents need to take an active role in the creation of the new baby so that they can feel happy they have given it the best possible start in life both in the womb and in the first few months after it enters the outside world.

Breastfeeding is now recommended as the sole source of nutrition for the first 6 months of life but for however long you decide to breast feed for you can rest assured that a properly nourished mother will provide the baby with all it needs until weaning starts.

Things to avoid as much as possible

Food

Alcohol, coffee, tea, carbonated soft drinks, chocolate, refined foods particularly: sugar, white flour and white rice and soya bean products. Also intensively reared animal products, cottage cheese other soft cheeses and raw eggs.

Environmental Factors to avoid

Stress, excessive exercise, antacids and drugs including tobacco.

Things to increase the intake of

Food

Organic, fresh vegetables, water and generally a good range of nutrients.

Nutrients that are particularly helpful to increase the intake of:

As well as making sure the whole range of vitamins and minerals are catered for in your diet the nutrients of particular benefit are:

Folic acid, Vitamin B₆, Vitamin B₁₂, Vitamin C, Vitamin E, Zinc and Magnesium and the essential fatty acids.

Environmental Factors to increase

Relaxation and gentle exercise such as walking