



Fact Sheet

Preparing Yourself for Pregnancy

How to maximise your chances of conception

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The reproductive system of a woman is internal. The vagina is the passage that leads from the outside of the body to the cervix, which is the opening to the uterus. The uterus is the muscular organ where a fertilized egg attaches and develops. It is about the size and shape of a pear, and is lined with a rich and nourishing mucous membrane called the endometrium.

From the top of the uterus extend the fallopian tubes, which lead backward and downward to the ovaries. The ovaries are the two small organs that contain the eggs. A woman is born with about 400,000 eggs and this number declines as she ages. Each month during her reproductive years, a number of eggs (ova) begin to mature inside follicles within an ovary. By midcycle, usually only one egg has completed maturation and this egg is released from its follicle during ovulation. The egg is then picked up by the fimbria or "fingers" of the fallopian tube. Fertilization by the man's sperm then takes place in the outer one third of the tube within about 24 hours of ovulation. The resulting embryo is pushed along the fallopian tube and into the uterus about four days later. Implantation of the developing embryo into the endometrium then begins.

This sequence of events is controlled by monthly changes in a woman's hormone levels. To help understand the process a little better, it is important to understand the menstrual cycle and the hormones involved.

The Menstrual Cycle

The menstrual cycle refers to the maturation and release of an egg, and to the preparation of the uterus to receive and nurture an embryo. The typical cycle, which is central to a woman's fertility, takes approximately 26 to 35 days and occurs in three phases: follicular - the stage of egg maturation; ovulatory - the time of the egg release; and luteal - the time of fertilization and implantation.

The cycle is managed by two hormones, Follicle stimulating hormone (FSH) and Luteinising hormone (LH)

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During the first, or follicular, phase of the cycle, FSH stimulates the development of follicles within both ovaries. Usually only one follicle grows to produce a mature egg (the dominant follicle). The developing follicles secrete oestrogen, which has several effects. One is to produce midcycle changes in the cervical mucus, preparing it to receive and nourish the man's sperm. Another is to thicken and prime the endometrium for implantation of a developing embryo.

The ovulatory phase occurs when LH levels dramatically increase or "surge", causing the release of the egg from the dominant follicle. This usually occurs midway through the cycle or about 12 to 16 days after the first day of a woman's period in a typical 28-day cycle.

The luteal phase follows ovulation. The ovarian follicle that nurtured the egg before ovulation now becomes known as the corpus luteum. The corpus luteum begins to produce oestrogen and progesterone, the two hormones necessary for developing and maintaining the uterine lining, or endometrium, so a fertilized egg, now an embryo, may implant and develop.

If fertilization does not occur during the monthly cycle, hormone production by the corpus luteum declines, causing the uterine lining to break down and shed. This in turn leads to menstruation and so the cycle begins again. The unfertilized egg simply breaks down in the fallopian tube or uterus and is absorbed.

The Male Reproductive System

The male reproductive system is also under the influence of hormones and is responsible for producing sperm. The male reproductive system is both internal and external.

The testes are located within the scrotal sac, the pouch of skin located below the man's penis. These are the two organs that produce both sperm and testosterone, the male hormone that helps maintain the male sexual characteristics. As sperm are produced, they pass from the testes through the coiled channels of the epididymis, an organ that stores and nourishes them as they mature.

Once sperm are completely mature, they move into the vas deferens. This tubal structure connects the epididymis with the seminal vesicles, the two pouch like glands that provide storage for the mature sperm.

When a man ejaculates, sperm from the seminal vesicles combine with a thick fluid from the prostate gland. This seminal fluid (or ejaculate) is deposited into the woman's vagina during intercourse.

The Role of Spermatogenesis

The development of normal, mature sperm is key in establishing male fertility and involves interplay of several factors:

- An exchange of hormonal messages between the brain and the testicles
- The secretion of necessary reproductive hormones and normal sperm development
- Normal transport of developing sperm from testicles via the epididymis and vas deferens to the seminal vesicles.

The production of sperm is primarily regulated by three hormones which, unlike in women, are secreted in a fairly constant, rather than cyclic, way:

- FSH
- LH
- Testosterone

In the male, FSH and LH from the pituitary are responsible for maintaining the sperm production process. The pituitary gland, which is located at the base of the brain, secretes the same hormones in regulating the female's reproductive functions.

FSH is responsible for stimulating sperm production in the testicles. LH stimulates the production of testosterone. Under the influence of Sertoli cells and specific hormones, immature sperm cells develop through several stages and eventually become mature sperm cells, called spermatozoa. These spermatozoa then pass through the epididymis where, after 18 to 24 hours, they gain motility (movement). After acquiring the ability to move, mature sperm are stored in the vas deferens and seminal vesicles until ejaculation.

Fertilisation and Pregnancy

A woman's "fertile time" is around midcycle, when ovulation occurs. When a couple has intercourse during this time, sperm enter into the cervical mucus. This mucus is normally receptive to sperm around the time of ovulation. Gradually, sperm advance into the uterus and up to the fallopian tube, where the egg is positioned near the ovary. Here, it can be fertilized by the man's sperm. The egg is probably able to be fertilized for about 24 hours following ovulation.

Since the sperm have to bio chemically change or "capacitate" prior to fertilization, intercourse before egg release is important. Sperm may live in the cervix and fallopian tube for up to four days. If a woman's menstrual cycle is on average 28 days long, intercourse every other day between days 10 and 17 gives the best chance of success. Intercourse does not have to occur on the actual day of ovulation for conception to occur.

Over the next two to three days, a fertilized egg, which is now an embryo, will develop within the tube and move to the uterus where it attaches to the uterine lining. The lining of the uterus (endometrium) has been prepared to receive the embryo by the female hormone progesterone.

A pregnancy test may be positive as early as one or two days after an expected period. Home pregnancy tests may be a good first step, but your physician will want to confirm pregnancy with either a urine or blood test.

Preparing For Pregnancy

Your overall health can have a significant impact on your fertility. This is why it is important to take extra special care of yourself even before you start trying to conceive. Several things can impact the ability to conceive:

Behavioral Factors

Certain personal habits or lifestyle factors may impact your health and, thus, affect your ability to conceive. Many of these factors can be regulated to increase overall health and improve your chances of conceiving:

Diet and Exercise - Proper diet and exercise are important for optimal reproductive function. Women who are significantly overweight or underweight may have difficulty conceiving.

Smoking - Cigarette smoking appears to reduce fertility. Women who smoke 20 cigarettes per day may be 20 percent less likely to conceive than non-smokers. Also, the risks of miscarriage, premature birth and low-birth-weight babies are elevated. It is safest to give up and, if both partners smoke, easier to do as a couple. Men who give up will see some improvement in sperm quality.

Alcohol - Alcohol intake can also impact sperm counts in men. In women, it may contribute to an increased risk of babies born with birth defects. It is best to avoid alcohol at least for the first three months of pregnancy.

Medications - A number of medications, including some of those used to treat depression, ulcers and high blood pressure, can influence a man's sperm count and libido (sex drive). Couples should advise their physician of any medications they are taking prior to undergoing fertility investigation and/or treatment.

Recreational Drugs - Drugs, such as anabolic steroids, may affect sperm counts in men. Cocaine use in pregnant women may seriously impair a baby's health. Drug addiction is easily passed from the mother to the fetus during pregnancy; controlled and/or addictive substances should not be taken immediately prior to or during pregnancy.

Caffeine - Extensive caffeine use (six to eight cups of coffee per day) may increase the risk of miscarriage. However, there is no clear understanding of what amount affects fertility. It is wise to drink no more than two cups of coffee per day and decaffeinated coffee may be preferable.

Lubricants - A number of products used for lubrication during intercourse, such as petroleum jelly or vaginal creams, have been shown to affect sperm quality and should be avoided if you are trying to conceive. Products containing spermicide (e.g. nonoxynol-9) should definitely be avoided.

Lead - Extensive exposure to lead has been shown to impact fertility in humans. Individuals working with paints/varnishes and auto manufacturing may be at risk.

Medical Treatments and Materials - Repeated exposure to sources of radiation, such as x-rays and cancer treatments (e.g. chemotherapy), have been shown to affect sperm production and contribute to ovarian problems.⁴ Modern diagnostic x-ray equipment is very safe but whenever possible, it makes sense to shield the testes and ovaries.

Ethylene Oxide - Exposure to ethylene oxide, a chemical used in the sterilization of surgical instruments and in the manufacture of certain pesticides, may cause birth defects in early pregnancy. It also has the potential to cause early miscarriage.

Biological Factors

Most couples who do not conceive easily will have one or more identifiable causes. In approximately 40% of cases, the problem is attributable to the male; another 40% is traced to the female. In about 10% of cases, fertility problems are linked to both partners. The remaining 10% of infertility is unexplained, even after exhaustive testing. It is important and helpful for both partners to try to understand the problem(s) and the available treatments. Options should be discussed as a couple with a healthcare provider.

Some of the more common conditions which can contribute to fertility problems include:

Abnormal Ovulation - Abnormal ovulation is indicated by irregular or absent menstrual periods which can be the result of a hormonal imbalance. In many cases, this can be successfully treated. Problems with ovulation may also be associated with extremely low body weight or with being overweight, as well as any significant change in weight (loss or gain). If you are not having regular monthly periods (every 26 to 35 days), you may wish to consult your physician before trying to conceive.

Blocked Fallopian Tubes - Blocked or damaged fallopian tubes may impair fertility by interfering with the egg and sperm transport. Tubal damage is often caused by pelvic infection, most commonly by chlamydia, or gonorrhoea. Often, there are no symptoms of tubal or pelvic infection, and damage may only be discovered during an infertility evaluation. Treatment of tubal problems or pelvic scarring may require specialized surgery or in vitro fertilization.

Endometriosis - For reasons that are poorly understood, tissue from the uterine lining implants on the ovaries and other pelvic organs, and may contribute to, or cause, infertility. A positive diagnosis of endometriosis can only be made by surgical procedures such as diagnostic laparoscopy that allows the physician to directly view the uterus, fallopian tubes and pelvic cavity (described in the next section). The symptoms of endometriosis may include heavy, painful and long menstrual periods. However, there is often little correlation between the severity of the symptoms and the extent of the disease. Sometimes there are no symptoms at all. Several forms of treatment are available, involving both medications and surgery.

Cervical Problems - Cervical problems may be related to the consistency of the cervical mucus or cervical anatomy, which make it a poor environment for sperm transport and survival. Previous cervical surgery such as cone biopsy may impair mucus production.

Male Factor - Male infertility may be related to inadequate sperm count or abnormalities relating to shape and movement of sperm. While varicocele, or varicose veins within the scrotum are common, it is unclear how important they are in the process of male infertility. Testicular injury that results in damage to sperm-producing structures or undescended testicles are important causes of infertility. Hormonal imbalances, the presence of other diseases such as diabetes mellitus, and pituitary tumors are uncommon problems affecting fertility.

Age - Age is a very important factor in the fertility of a couple. Fertility levels decrease with female age, while male age has little impact. Maximum fertility for women occurs between the ages of 15 and 24. Since many women delay starting a family until they are in their 30s or 40s, infertility has become relatively more common: about one-third of women who defer pregnancy until their mid-30s will have a problem becoming pregnant. Most women over age 40 will have problems conceiving. It may therefore be wise for women over age 35 to seek help after six months of unprotected intercourse rather than waiting a full year.

Make An Active Preconception Plan

Many women think that in order to conceive they need only stop using their contraceptive method. But some forms of contraception reduce the chances of healthy conception, and some couples are for no obvious reason still waiting long after they expected to conceive.

Every couple will benefit from being more active and making positive preparations. The most important aspects of conception is done weeks before the next menses. The egg was created before the mother was born and ripens for about three months before ovulation, two weeks before the next period. The sperm that will fertilize the egg grown about two months beforehand. The first step to successful pregnancy is to prepare a healthy egg and a healthy sperm. Inadequate food, smoking, alcohol, infection or irradiation at about the time the egg and sperm are being made can have disastrous effects, in fact most eggs that ripen against this background are probably not even viable.

Taking active measures means both partners need to take a number of positive and straightforward precautions to improve their general health and create the best possible circumstances for conception. This needs to take place several months before conception is planned.

List if actions you should take to ensure best chances of successful conception.

- Start your planning by setting a pre-conception window – 18 months if you're using depo provera or have a hormonal implant, 12 months if you are on the pill, 6 months if you're fitted with an IUD.
- Extra Zinc (15mg daily), Vitamin C (250mg daily) and Vitamin B6 (100mg daily) will replace deficiencies the pill, depo or implants commonly cause.
- Have your IUD or implant removed as soon as possible at the beginning of your pre-conception window
- Arrange to be fitted with a cap or diaphragm or use condoms instead for the duration of the pre-conception window
- Keep a calendar with details of your cycle, chart BBT temperatures if possible
- Your diet should include cauliflower, seeds and nuts, roe, eggs - since these are richer in the nutrients you need
- Schedule a rubella immunity screen
- Schedule a pap smear, if not current
- Schedule an STD screen
- Start taking 400 mg folic acid daily
- If you smoke stop
- Limit alcohol intake to 2 units per day
- Limit caffeine intake to 3 cups per day
- Ask your partner to have a sperm level test
- Stop your barrier contraceptive precautions at the end of your pre-conception window but keep everything else going.
- Let yourselves relax and leisure in life. Sometimes a holiday sets the right tone.
- Make sure you're having regular penetrative unprotected sex
- Achieving orgasm does increase the possibility of conception, orgasm anytime up to 40 minutes after his ejaculation gives the best chance of conceiving

Preconception Well-being Program

Here at the Women's Natural Health Practice we offer a preconception well-being program that consists of four, bi-weekly acupuncture sessions over 2 months, herbal medicine tonics, haematology, blood group, rubella and varicella zoster antibodies screening and any other screening that may be necessary.

Our Female Healthcare Philosophy

At the Women's Natural Health Practice we specialise in providing comprehensive natural, reproductive, gynaecological, obstetric and general healthcare for females from adolescence to post-menopause. Our approach is to integrate techniques in both oriental and western medical diagnosis in order to formulate a naturally oriented treatment plan combining acupuncture, herbal medicine, nutritional therapy, exercise and lifestyle. Each treatment plan is tailored specifically to each individual woman maximising results.

Please email us at enquiries@naturalgynae.com with questions, we are more than happy to provide any information via email that will assist you in deciding which treatment approach would be best for you

For more information, contact details and appointments click here www.naturalgynae.com