

Miscarriage

What is miscarriage?

Heartbreaking as they can be, sadly miscarriages are not uncommon. While it's of little comfort to women and couples who experience a miscarriage, they are not alone. Approximately 15 to 20 per cent of all pregnancies end in miscarriage - often in the first trimester. The Australian Longitudinal Study on Women's Health found for every three women who have given birth in their early 30s, one has had a miscarriage. These figures increase with age, in the late 30s the risk of miscarriage is close to 25 per cent and for women in their 40s, there is just a 50 per cent chance of carrying a baby to term. Miscarriage is a sad but normal part of human reproduction.

Miscarriage is the spontaneous loss of a pregnancy before 20 weeks and most miscarriages can't be prevented. Most of these babies will have already died in the uterus before the miscarriage occurs - unfair as it seems sometimes it's nature's way of ending a pregnancy that isn't developing as it should.

The loss of a pregnancy at any stage can be an extremely difficult and emotional time for many couples particularly if it happens repeatedly or following infertility. But most miscarriages are a single pregnancy loss - an isolated instance of miscarriage that conversely enough actually shows the body's reproductive system is working. Most women who miscarry can conceive again and go on to deliver a healthy baby.

However, some women devastatingly experience more than one miscarriage. This is called recurrent pregnancy loss or recurrent miscarriage and while still not unusual - one in 20 couples experience two miscarriages in a row - it is obviously a sign that something isn't working. If the patient has experienced two or three miscarriages in a row, they should be referred to a Fertility Specialist with miscarriage management expertise. Genea runs a Miscarriage Management Program for people who have experienced a number of miscarriages and would like to understand what is happening and how to overcome the problem.

Miscarriages in early pregnancy are NOT caused by:



What causes a miscarriage?

While women and couples who suffer miscarriages often desperately want to know what caused it unfortunately there are a number of reasons why a pregnancy might end unexpectedly and it's not always straightforward for your doctor to figure out why. While it's worthwhile investigating for underlying causes, in 50 per cent of cases a medical explanation will not be found. And for these couples, the likelihood of a pregnancy after a miscarriage leading to the birth of a healthy baby is not that different to the overall chance of success based on the woman's age.

Some of the more common causes of miscarriage include:

- chromosomal abnormalities
- abnormalities of the uterus
- blood clotting disorders (thrombophilias)
- immunological problems
- hormonal disorders
- infections

- genetic abnormalities
- problems with the placenta
- age
- lifestyle factors such as smoking, excessive alcohol and recreational drugs

Chromosomal abnormalities

Chromosomes are tiny structures inside the centre of all cells that come in pairs, one from each parent. Each chromosome carries many genes and it is these genes that define all of a person's physical characteristics (such as sex, blood type, hair & eye colour). Having too much or too little of a chromosome causes an imbalance in gene activity.

This imbalance or random genetic abnormality is the most common cause of miscarriage, about 9 out of 10 genetically abnormal pregnancies will not survive past the first trimester. In normal human cells there are 46 chromosomes, which contain DNA and genes. When cells have the wrong number of chromosomes, the error is known as aneuploidy. Down syndrome is the best-known example of aneuploidy and is the result of having three copies of chromosome 21.

Around 7 out of 10 first trimester losses are caused by chromosomal problems.

These miscarriages happen by chance. In most cases, there is nothing wrong with the mother or father's health and miscarriage is not likely to occur again in a later pregnancy.

There is however an important exception - something called balanced translocations.

Balanced translocations

If one partner in a couple has a balanced translocation, it means that they have the correct amount of each chromosome, and so no outward signs of genetic abnormality, but their chromosomes are arranged incorrectly, which will cause problems when the chromosomes divide - as in the creation of sperm and eggs.

If a translocation is suspected as the cause for recurrent pregnancy loss, both parents can be tested. Once it has been confirmed that a translocation is causing the problem, there are several options for the patients.

If you continue trying to get pregnant naturally, these odds determine your chance (other factors aside) of carrying a child to term and that child being healthy.

The recommended alternative to overcome miscarriages caused by translocation is Preimplantation Genetic Diagnosis (PGD). It's a treatment which involves undergoing a course of IVF and then having the resulting embryos tested as they develop in the laboratory. Through PGD, we can avoid using embryos with unbalanced chromosomes and therefore significantly increase your chances of taking home a healthy baby.

Uterine abnormalities

Several abnormalities of the uterus are commonly linked to repeated pregnancy loss. Most of them can be treated with surgery. These abnormalities include:

- Congenital abnormalities. These are defects present in the uterus from birth. For instance, the uterus might be divided into two sections by a wall of tissue (septate uterus).
- Uterine fibroids (leiomyomata). Uterine fibroids are benign growths (not cancer) made up of uterine muscle tissue. Fibroids are common but they are only rarely a cause of miscarriage.

Blood clotting disorders (thrombophilias)

Although it has been known for a considerable amount of time that a woman's blood becomes thicker in pregnancy, it's only recently been established that this process can be more pronounced in some women compared with others. Blood clotting disorders (thrombophilias) can be genetic or acquired - that is they can be inherited them from parents or they might develop as the patient ages.

Antiphospholipid antibodies cause blood to clot more easily - the two most important types of antiphospholipid antibodies are the lupus anticoagulant and the anticardiolipin antibodies.

If the patient has a history of recurrent pregnancy loss and has persistently tested positive for either lupus anticoagulant and/ or high levels of anticardiolipin antibodies then your diagnosis is Antiphospholipid Syndrome.

Inherited versions of thrombophilias include Factor V Leiden. If blood clots occur in the blood vessels of the placenta, the blood flow to the baby is decreased and this can lead to either second trimester miscarriage or, if the pregnancy proceeds, to the birth of a baby that is smaller than he or she ought to be. Women with these disorders are also at risk of developing high blood pressure later in pregnancy.

Immune disorders

The immune system is designed to recognise and attack foreign substances within the body. Antibodies are formed to help the body fight off disease and heal itself in case of infection. These disorders are called auto-immune diseases.

Normally in pregnancy, the mother's body protects the "foreign" foetus from attack by her own antibodies but it is believed this protection might be missing from the blood of some women who have had repeated pregnancy loss.

Other immune system problems can be caused by differences between the mother and the foetus and even between the mother and the father. There are tests which can find out if there is an issue in the immune system.

Hormonal disorders

There are a number of hormonal disorders that are commonly associated with recurrent pregnancy loss.

Progesterone

Low levels of progesterone hormone are frequently found in women who are suffering recurrent miscarriage. However, low progesterone levels in early pregnancy reflect the fact that the pregnancy has not implanted successfully in the womb lining, rather than the fact the developing placenta is not producing enough progesterone to maintain the pregnancy. This is an important point - low progesterone is the effect, not the cause of the miscarriage. This explains why giving women progesterone and/or hCG hormone injections in early pregnancy won't help avoid a miscarriage. There is an exception to that rule and that's when we take advantage of the immunosuppressant effects of progesterone in women who are found to have immune problems.

Follicle Stimulating Hormone

Follicle stimulating hormone (FSH) drives the ovary to start growing follicles. Some women with a history of pregnancy loss are also found to have high FSH levels because unfortunately their ovaries have become prematurely menopausal. Although rare, this is obviously a very important problem to identify.

The uterine lining (the endometrium)

Currently, the only way to determine how an endometrium will respond to implantation is to take a sample of it and look at the histological (microscopic) evidence of the state of the tissues. An endometrial biopsy can be performed - fortunately it's no more uncomfortable than undergoing a cervical smear (pap smear) test.

Polycystic ovarian syndrome (PCOS)

Often, a pelvic ultrasound shows women who are suffering recurrent miscarriage have polycystic ovaries (PCO). This is a common condition, found in 25 per cent of all women, which involves multiple small cysts within the ovary or ovaries. These cysts aren't dangerous but they can't be removed as they are within the ovary. Polycystic ovaries can sometimes be associated with a number of hormonal imbalances such as increased production of luteinizing hormone (LH) and testosterone. A number of carefully designed studies have shown that neither PCO nor high LH levels are a cause for recurrent miscarriages.

Infections

The role that vaginal infections may play in recurrent pregnancy loss is the subject of a new field of research. Infection may well play a role in causing late pregnancy losses (14 weeks gestation) in a small number of women but it is unlikely to be important in causing early miscarriages.

Environment and lifestyle factors

The risk of miscarriage may be increased in pregnant women who:

- Smoke
- Use illegal drugs
- Are exposed to high levels of radiation or toxic agents

It's important to remember that there is almost always nothing that could have been done to prevent a pregnancy being lost and nothing that can be done to hang on to a pregnancy that is destined to end in miscarriage.

**For further information, call
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