Key points

- A miscarriage is the early loss of a pregnancy.
- Recurrent miscarriage is when this happens three or more times.
- Around one woman in every 100 has recurrent miscarriages.
- Most couples who have had recurrent miscarriages still have a good chance of a successful birth in future.
- If you have had recurrent miscarriages, you may be offered blood tests or a pelvic ultrasound scan to try to identify the reason for them.
- In spite of careful investigations, it is often not possible to find the reason for recurrent miscarriages.
- Your doctors will not be able to tell you for sure what will happen if you become pregnant again.

About this information
This information is for women and couples who have had three or more miscarriages.
It tells you:

- What we know about the reasons for recurrent miscarriages
- About recommendations the guideline makes on the most effective ways of investigating and treating women who have recurrent miscarriages.
- It aims to help you and your healthcare team makes the best decisions about your care.
- It is not meant to replace advice from a doctor about your own situation.
- It does not look at reasons or treatment for single miscarriages
- Some of the recommendations here may not apply to you; this could be because of some other illness you have, your general health, your wishes, or some or all of these things. If you think the treatment or care you get does not match
- What we describe here, talk about it with your doctor or with someone else in your healthcare team.

What is recurrent miscarriage?

- A miscarriage is when you lose a pregnancy at some point in the first 23 weeks. When this happens three or more times doctors call this recurrent miscarriage. For women and their partners it is a very distressing problem.
- Around one woman in every 100 has recurrent miscarriages. This is about three times more than you would expect to happen just by chance, so it seems that for some women there must be a specific reason for their losses. For others, though, no underlying problem can be identified; their repeated miscarriages may be due to chance alone.

Why does it happen?

- Often, in spite of careful investigations, the reasons for recurrent miscarriages cannot be found. However, if you and your partner feel able to keep trying, you still have a good chance of a successful birth in future.
- There are a number of things which may play a part in recurrent miscarriage. It is a complicated problem and more research is still needed.

Your age and past pregnancies

- The older you are, the greater your risk of having a miscarriage. The more miscarriages you have had already, the more likely you will to have another one.
Genetic factors
- For around three to five in every 100 women who have recurrent miscarriages, they or their partner have an abnormality on one of their chromosomes (the genetic structures within our cells that contain our DNA and the features we inherit from our parents). Although such abnormalities may cause no problem for you or your partner, they may sometimes cause problems if passed on to your baby.

Abnormalities in the embryo
- An embryo is a fertilised egg. An abnormality in the embryo is the most common reason for single miscarriages. However, the more miscarriages you have, the less likely this is to be the cause of them.

Autoimmune factors
- Antibodies are substances produced in our blood in order to fight off infections. Around 15 in every 100 women who have had recurrent miscarriages have particular antibodies, called antiphospholipid (aPL) antibodies, in their blood; fewer than two in every 100 women with normal pregnancies have aPL antibodies. Some people produce antibodies that react against the body’s own tissues; this is known as an autoimmune response and it is what happens to women who have aPL antibodies. If you have aPL antibodies and a history of recurrent miscarriage, your chances of a successful pregnancy may be only one in ten.

Womb structure
- It is not clear how far major irregularities in the structure of your womb can affect the risk of recurrent miscarriages. Estimates of the number of women with recurrent miscarriage who also have these irregularities range from two out of 100 to as many as 37 out of 100. Women who have serious anatomical abnormalities and do not have treatment for them seem to be more likely to miscarry or give birth early. Minor variations in the structure of your womb do not cause miscarriages.

Weak cervix
- In some women, the entrance of the womb (the cervix) opens too early in the pregnancy and causes a miscarriage in the third to sixth month. This is known as having a weak (or ‘incompetent’) cervix. It is overestimated as a cause of miscarriage because there is no really reliable test for it outside of pregnancy.

Polycystic ovaries
- If you have polycystic ovaries your ovaries are slightly larger than normal ovaries and produce more small follicles than normal. This may be linked to an imbalance of hormones. Just under half of women with recurrent early miscarriages have polycystic ovaries; this is about twice the number of women in the general population.
- Having polycystic ovaries is not a direct cause of recurrent miscarriage and it does not mean that you are at any greater risk of further miscarriages. We are not sure what the link is.
- Many women with polycystic ovaries and recurrent miscarriage have high levels of a hormone called luteinising hormone (LH) in their blood. Reducing the level of LH before pregnancy, however, does not improve your chances of a successful birth.

Hyperprolactinaemia
- Prolactin is a hormone which prepares a pregnant woman’s breasts to produce milk. When a woman produces too much prolactin, this is known as hyperprolactinaemia. It is not yet clear whether this condition plays a role in recurrent miscarriage because the evidence is conflicting.

Infections
- If a serious infection gets into your bloodstream it may lead to a miscarriage.
- If you get a vaginal infection called bacterial vaginosis early in your pregnancy, it may increase the risk of having a miscarriage around the fourth to sixth month or of giving
birth early. It is not clear, though, whether infections cause recurrent miscarriage; for this to happen, the bacteria or virus would need to be able to survive in your system without causing enough symptoms to be noticed. This rules out illnesses like measles, herpes, listeria, toxoplasmosis and cytomegalovirus (so you do not need to be tested for them if you have recurrent miscarriages).

**Blood conditions**
- Certain inherited conditions mean that your blood may be more likely to clot than is usual. These conditions are known as thrombophilia. They do not, though, mean that a serious blood clot will inevitably develop. Although thrombophilia has been thought to play some part in miscarriage, we do not yet know enough about how or why that is.

**Alloimmune reaction**
- Some people have suggested that some women miscarry because their immune system does not respond to the baby in the usual way. This is known as an alloimmune reaction. There is no clear evidence to support this theory.

**Diabetes and thyroid problems**
- Diabetes or thyroid disorders can be factors in single miscarriages. They do not cause recurrent miscarriage, as long as they are treated and kept under control.

**What can be done?**

**Supportive antenatal care**
- Women who have supportive care from the beginning of a pregnancy have a better chance of a successful birth. There is some evidence that attending an early pregnancy clinic (if there is one in your area) can reduce the risk of further miscarriages.

**Screening for abnormalities in the structure of your womb**
- You should be offered a pelvic ultrasound scan to check for and assess any abnormalities in the structure of your womb, so that they can be treated if necessary. Another method of screening using hysterosalpingography (an X-ray of the fallopian tubes using fluid injected through the entrance of the womb) has no advantages over pelvic ultrasound and causes more discomfort, so it is not usually necessary.

**Screening for genetic problems**
- You and your partner should be offered a blood test to check for chromosome abnormalities; the test is known as karyotyping. If either or both of you turn out to have an abnormality you should be offered the chance to see a specialist called a clinical geneticist. They will tell you what your chances are for future pregnancies and will explain what your choices are. This is known as genetic counselling. It can help you decide what you want to do for the future. If it seems likely that other members of your family could be affected by the same problem, they too may be offered genetic counselling.

**Screening for abnormalities in the embryo**
- If you have a history of recurrent miscarriage and you lose your next baby, your doctors may suggest checking for abnormalities in the embryo or the placenta afterwards. They will do this by checking the chromosomes of the embryo through karyotyping, although it is not always possible to get a result. They may also examine the placenta through a microscope. The results of these tests may help them to identify and discuss with you your possible choices and treatment.

**Screening for vaginal infection**
- If you have had miscarriages in the fourth to sixth month of pregnancy or if you have a history of going into labour prematurely, you may be offered tests (and treatment if necessary) for an infection known as bacterial vaginosis (BV). If you have BV, treatment with antibiotics may help to reduce the risks of losing your baby or of premature birth. There is not enough evidence to be sure that it makes any difference to the chances of a baby surviving.
Treatment for aPL antibodies

- There is some evidence that if you have aPL antibodies and a history of recurrent miscarriages, treatment with low-dose aspirin tablets and low-dose heparin injections in the early part of your pregnancy may improve your chances of a live birth up to about seven in ten (compared with around four in ten if you take aspirin alone and just one in ten if you have no treatment).
- Even with treatment, you will have a risk of extra problems during pregnancy (including pre-eclampsia, restriction in the baby's growth and premature birth). You should be carefully monitored so that you can be offered appropriate treatment for any problems that arise.
- Steroids (certain sorts of natural or synthetic hormones) have been used to treat aPL antibodies in recurrent miscarriage, but they do not seem to improve the chances of a successful delivery and they carry significant risks for you and your baby, compared with aspirin and heparin.

Treatment for thrombophilia

- Although you may have a higher risk of miscarriage if you have an inherited tendency to blood clotting (thrombophilia), you may still have a healthy and successful pregnancy. At present there is no test available to identify whether you will miscarry if you have thrombophilia. You may, though, be offered treatment to reduce the risk of a blood clot.

Tests and treatment for a weak cervix

- If you have a weak cervix, a vaginal ultrasound scan during your pregnancy may indicate whether you are likely to miscarry.
- If you have a weak cervix, you may be offered an operation to put a stitch in your cervix, to make sure it stays closed. It is usually done through the vagina, but occasionally it may be done through a ‘bikini line’ cut in your abdomen, just above the line of the pubic hair. Although having a cervical stitch after the third month of pregnancy slightly lowers your risk of giving birth early, it has not been proved to improve the chances of your baby surviving. Because all operations involve some risk, your doctors should only suggest it if you and your baby are likely to benefit. They should discuss the risks and benefits with you.

Hormone treatment

- It has been suggested that taking progesterone or human chorionic gonadotrophin hormones early in pregnancy could help prevent a miscarriage. There is not yet enough evidence to prove whether this works.

Immunotherapy

- Treatment to prevent or change the response of the immune system (known as immunotherapy) is not recommended for women with recurrent miscarriage. It has not been proven to work, does not improve the chances of a live birth and it may carry serious risks (including transfusion reaction, allergic shock and hepatitis).

What could it mean for me in future?

- Your doctors will not be able to tell you for sure what will happen if you become pregnant again. However, even if they have not found a definite reason for your miscarriages, you still have a good chance (three out of four) of a healthy birth.

Is there anything else I should know?

- You have the right to be fully informed about your health care and to share in making decisions about it. Your health care team should respect and take your wishes into account.
- No treatment can be guaranteed to work all the time for everyone.

Sources and acknowledgements
This information is based on the Royal College of Obstetricians and Gynaecologists (RCOG) guideline The Management of Recurrent Miscarriage.