

A different type of coil

The Mirena IUS is like many other types of Intrauterine Contraceptive Devices (IUCD or coils) in that it is fitted by a doctor and remains in the womb for a fixed amount of time, after which it must be changed. It is different, however, in that it is much more effective than usual IUCDS and avoids many of the side effects that put women off this choice of contraception.

Most IUCDS make a woman's periods heavier, but the Mirena makes periods lighter than usual. Because of this, it is frequently used as a treatment for heavy periods, even in women who don't need contraception. It is made of a light, plastic, T-shaped frame with the stem of the 'T' a bit thicker than the rest. This stem contains a tiny storage system of a hormone called Levonorgestrel. This hormone is also used in contraceptive pills such as Eugynon, Logynon, Microgynon, Ovran 30, Ovranette and Trinordial. In the Mirena however, a much lower dose is released than when you take the Pill (about 1/7th strength, unlike the combined contraceptive pills it does not contain any estrogen) and it goes directly to the lining of the womb, rather than through the blood stream where it may lead to the common progesterone-type side effects (see below).

How effective is the contraception?

If 1000 women used the Mirena IUS for a year, only one would fall pregnant. This compares with about 10 for the normal IUCD, 20 for the Pill and 10-15 for the injection (Depot Provera). This is comparable to the effectiveness of sterilisation.

Mirena acts as a contraceptive in two ways. It makes the mucus at the neck of the womb (the cervix) much thicker, preventing sperm from getting through and it also makes the lining of the womb extremely thin, stopping implantation. In some women it prevents egg release (ovulation). As with all IUCDS, if it does fail, there is a higher risk of ectopic pregnancy. This is a pregnancy located outside the womb, usually in the tube. If you felt pregnant or had a positive pregnancy test it is important to see your doctor to rule this out.

Overall, compared to women not using any contraception, the risk of ectopic pregnancy is greatly reduced (around 2 per 10,000 women each year) because the IUS is such a good contraceptive. If a pregnancy does occur with an IUCD, it is advisable to remove the contraceptive if possible. This reduces the risk of bleeding, infection and miscarriage. Because failure is so rare there is little information available on the effects on an ongoing pregnancy with the Mirena still in place.

Fitting the Mirena IUS

Before it is inserted, the doctor will do an examination to make sure the womb is a normal size and there is nothing else unusual to find. If there is some discharge, swabs will be taken to rule out infection before it is placed. The IUS is inserted within a week of beginning a period. This helps to reduce the chance of expulsion and irregular bleeding as the womb lining is already quite thin at this time. It may be inserted immediately after surgical termination of pregnancy, but should be deferred until six weeks after delivery of a baby.

A speculum is placed in the vagina, like when you have a normal smear test, and the Mirena is placed into the womb through the cervix. This can lead to some cramp like pain so it is a good idea to take some painkillers a couple of hours before the fitting as this will help reduce any discomfort. A good choice is Ibuprofen 400 mg, which can be bought over-the-counter at a chemist, however please check that this is safe for you.

Most women do not find the insertion procedure very uncomfortable - usually much less than expected. The doctor may use some local anaesthetic to fit the coil. Once the IUS is in place, you won't be able to 'feel' it in your womb. Your doctor will show you how to check for the strings, and it is very unusual for your partner to be aware of it during intercourse. After fitting, a further appointment should be made for six weeks later to check the strings can still be seen. Threads do go missing and if this happens your doctor will arrange an ultrasound to confirm the position and leave until due for change /removal.

Removing or changing the Mirena

Removal involves a speculum examination again and the IUS is removed by pulling on the strings. This is only uncomfortable for a second or two as it comes out. The hormone effect on the lining of the womb is reversed within a month and normal periods and fertility returns. The IUS will last five years and, if required a new one can be inserted at the same time the old one is removed.

Mirena for heavy periods

Although the IUS was originally developed as a contraceptive, the discovery that it leads to much lighter periods was a great bonus. Many gynaecologists now suggest the Mirena as a treatment for heavy periods if tablet treatment doesn't work.

After the months use, the average blood loss is 85% less, and by 12 months the flow is reduced by 97% every cycle. About one third of women using the IUS will not have any periods at all. Although women initially find it a bit unusual not having periods, it doesn't cause any problems. There is no 'build up' of blood, because the hormone in the IUS prevents the lining of the womb from building up at all. Often it is the excessive thickening of this lining that is the cause of the problems in the first place. One study looked at 54 women who had heavy periods and were awaiting hysterectomy. They all used the Mirena, and just under 70% were taken off the waiting list because they were happy with the treatment. In another study of 50 similar women, 82% avoided major surgery.

The Mirena is now licensed for treating heavy periods, and although this official licensing is relatively new, it has been used 'off-license' for some time in this way.

Painful periods

Although the IUS isn't primarily used for painful periods, two studies have found that it does help in many cases (as often as 80% of the time). If painful periods persist, it is usual to rule out any other problems with a laparoscopy.

Fibroids

Large fibroids are a common cause of heavy periods. If they are so large, or in such a position that they make the inside of the womb an abnormal shape, it is unlikely that the Mirena will remain in place, and would not be helpful as a treatment. With small to moderate size fibroids, it is quite reasonable to use the IUS and one study has found that fibroids are less common in women who use the Mirena. A further paper has found that in the five women studied, a Mirena actually reduced the size of their fibroids. This is only one report, of course, and the IUS cannot be recommended as a treatment for fibroids based on this alone, though it is very interesting.

Premenstrual syndrome (PMS)

PMS is a syndrome that is thought to be caused by the varying hormones of the menstrual cycle. There have been suggestions that the IUS may be useful as it will allow a continuous dose of hormones to be given (oestrogen) without the worry of excessive stimulation of the lining of the womb. Usually oestrogens are combined with a course of a progestagen to prevent this, but many women experience PMS-like symptoms with progestagens. At present there is little published in the medical literature about the use of the Mirena in this way, but for severe cases, where hysterectomy is being considered as the only remaining alternative, it would certainly be reasonable to consider this.

Hormone replacement therapy (HRT)

There is a growing experience with the use of the IUS for women who require hormone replacement therapy, but who have either bad PMSlike symptoms or erratic bleeding on normal HRT preparations. The IUS with continuous implants, tablets or patches of oestrogen provide good symptom relief with minimal side effects. As its use in this way is not generally established in the UK, this would normally be prescribed under the care of a gynaecologist. In other countries (eg. Finland) the IUS is licensed for use in this way and can be routinely used for up to five years.

Ectopic pregnancy

Women who have experienced an ectopic pregnancy are at a greater risk of this happening again in future pregnancies. For this reason, they are advised to choose a type of contraception that does not increase this risk any further. In particular they are encouraged to avoid IUCDS, as these are known to increase this risk. The risk of ectopic pregnancy is very much lower with the IUS than in women not using any contraception (60 times lower, in fact). Although perhaps not a first choice, the IUS may be considered when other contraceptives are really not suitable. As with most decisions in medicine, it is about the balance of risk.

Side effects

Expulsion: in the early months of use, there is a very small chance that the IUS may dislodge and come out, either in part or altogether. This risk may be greater than with other IUCDS, presumably because it is that bit larger. There may be symptoms such as bleeding or persistent pain not relieved by simple pain killers, or it might be passed without any discomfort at all. As the system reduces blood flow, sudden return of heavy periods might suggest this has happened.

Hormonal problems: although the IUS delivers its hormone directly to the lining of the womb, it does lead to a slight increase in progesterone levels in the blood stream. The levels are much lower than that found with the progestagen-only pill (POP) and usually don't lead to side effects. If they do occur, most often they are mild and only last up to four to six weeks. Side effects have included headache, water retention, breast tenderness or acne.

Ovarian cysts: progestagen hormones increase the chance of benign, simple ovarian cysts. This is more common with the higher hormone levels associated with the progestagen-only pill. Overall the risk is about three times higher (1.2% in IUS users versus 0.4% normally). These cysts most often do not require any treatment and resolve on their own over two to three months. It is usual to arrange follow-up ultrasound scans over this time if they do occur. The most common symptoms of a cyst is abdominal pain that doesn't settle with simple painkillers.

Bleeding problems: these are without a doubt the most common problem associated with the Mirena. It takes about 3 months for the lining of the womb to thin down and during this time bleeding can be erratic or even heavy at times, but almost always settles after three to six months. During the first month, 20% of users experience prolonged bleeding of more than eight days duration, but by the third month only 3% have prolonged bleeding.

Pelvic infection: in general IUCDS increase the risk of infection of the womb, tubes and other pelvic organs. Studies looking at Mirena suggest that this may not be the case, with the IUS being protective against infection, particularly in the age group most at risk (25s). Although this would fit with the thickening of the cervical mucus preventing infection getting through the cervix, this finding is not universal in all studies

The actual long-term risk of infection is very low, at less than 1% with five years' use. A World Health Organisation study of over 22,000 users found that the infection risk was only increased in the first 20 days after insertion. This demonstrates the need to rule out infection in high-risk women before inserting the IUS, and in this group a Chlamydia screen is advised.

Conclusion

The IUS is an effective contraceptive and treatment for heavy periods. It reduces menstrual pain, may be used with small to moderate fibroids and has the potential as a treatment for severe PMS. It is associated with a low risk of ectopic pregnancy and infection. It may be more difficult to insert than standard IUCDS. In some women it can lead to mild hormonal effects, and commonly causes irregular bleeding in the initial months, though this usually settles by three to six months. It is a particularly good treatment choice for women with heavy periods who wish to avoid major surgery.