Is surgical treatment an option for enhancing the chance of getting pregnant?

Studies have shown that surgery (with removal of endometriotic **lesions**) can enhance the chance of spontaneous pregnancy in women with peritoneal endometriosis.

In women with ovarian endometrioma, surgery is one of the options to enhance the chance of spontaneous pregnancy. However, surgery in women with ovarian **endometrioma** can result in damage to the **ovary**. Your doctor should discuss this risk with you.

There is no strong evidence that surgery improves spontaneous pregnancy rates in women with deep endometriosis.

Recommendations in the guideline:

In infertile women with AFS/ASRM stage I/II endometriosis, clinicians should perform operative laparoscopy (excision or ablation of the endometriotic lesions) including adhesiolysis, rather than performing diagnostic laparoscopy only, to increase ongoing pregnancy rates. ***(based on level A evidence)***

In infertile women with ovarian endometrioma undergoing surgery, clinicians should perform excision of the endometrioma capsule, instead of drainage and electrocoagulation of the endometrioma wall, to increase spontaneous pregnancy rates. ***(based on level A evidence)***

The GDG recommends that clinicians counsel women with endometrioma regarding the risks of reduced ovarian function after surgery and the possible loss of the ovary. The decision to proceed with surgery should be considered carefully if the woman has had previous ovarian surgery. ***(Good practice point)***

In infertile women with AFS/ASRM stage III/IV endometriosis, clinicians can consider operative laparoscopy, instead of expectant management, to increase spontaneous pregnancy rates. ***(based on level B evidence)***

Medical treatment before or after surgery

There is no evidence that taking hormonal treatment before or after surgery helps in increasing the chance of pregnancy in women with endometriosis associated **infertility**.

Recommendations in the guideline:

In infertile women with endometriosis, the GDG recommends clinicians not to prescribe adjunctive hormonal treatment before surgery to improve spontaneous pregnancy rates, as suitable evidence is lacking. ***(Good practice point)***

In infertile women with endometriosis, clinicians should not prescribe adjunctive hormonal treatment after surgery to improve spontaneous pregnancy rates. ***(based on level A evidence)***

Is medically assisted reproduction an option for enhancing the chance of get pregnant?

Although women with endometriosis can get pregnant, some women suffer from **infertility**.

For women with **fertility problems**, **medically assisted reproduction** can be an option. **Medically assisted reproduction** includes a number of procedures with the aim of getting pregnant, including intrauterine insemination and **assisted reproductive technologies**

Intrauterine insemination

In intrauterine insemination, the sperm of the partner is injected into the uterus of the woman at the time when an egg is released and ready for fertilisation. The appropriate time is determined by performing ultrasound, by measuring hormonal levels or regulated by injection of synthetic **hormones** (**controlled ovarian stimulation**).

If you have minimal or mild endometriosis and decide to get pregnant, your doctor may advise intrauterine insemination with **controlled ovarian stimulation** to increase your chance of pregnancy. Some studies have shown that performing intrauterine insemination with **controlled ovarian stimulation** within 6 months after surgery could increase the chance of pregnancy.

Intrauterine insemination is also an option in women with ovarian **endometrioma** or moderate or severe endometriosis, but there are no studies that have investigated this.

Intrauterine insemination is not an option in the following cases:

- the woman has a problem with her fallopian tubes, meaning that the egg has problems to reach the uterus (tubal function is compromised)
- the woman's partner has **fertility problems** (for instance low sperm count, reduced sperm quality)
- in case other treatments have failed.

In these cases, assisted reproductive technologies should be used.

Recommendations in the guideline:

In infertile women with AFS/ASRM stage I/II endometriosis, clinicians may perform intrauterine insemination with controlled ovarian stimulation, instead of expectant management, as it increases live birth rates. ***(based on level C evidence)***

In infertile women with AFS/ASRM stage I/II endometriosis, clinicians may consider performing intrauterine insemination with controlled ovarian stimulation within 6 months after surgical treatment, since pregnancy rates are similar to those achieved in unexplained infertility. ***(based on level C evidence)***

The GDG recommends the use of assisted reproductive technologies for infertility associated with endometriosis, especially if tubal function is compromised or if there is male factor infertility, and/or other treatments have failed. ***(Good practice point)***

Assisted reproductive technologies

An important proportion of women with moderate or severe endometriosis will need **assisted reproductive technologies** (ART) when they decide to become pregnant.

Assisted reproductive technologies are procedures where the egg and sperm are collected from the body and put together in a test-tube to be fertilised. Later, the fertilised egg or **embryo** is transferred to the uterus. Before the eggs, which have to be mature, can be removed from the woman's body, she receives hormonal stimulation of the follicles to produce mature eggs. This is also known as **in vitro fertilisation** or **IVF**. **Intracytoplasmic sperm injection or ICSI** is a similar technique but in the lab, a single sperm is injected into the egg with a needle instead of putting the egg with many sperm cells in a test tube as in **IVF**. **ICSI** is mostly performed when the sperm is of low quality.

Assisted reproductive technologies can help women with endometriosis to get pregnant.

In women with endometrioma, the use of preventative antibiotics at the time of oocyte retrieval, to avoid infections, seems reasonable.

Recommendations in the guideline:

In infertile women with endometriosis, clinicians may offer treatment with assisted reproductive technologies after surgery, since cumulative endometriosis recurrence rates are not increased after controlled ovarian stimulation for IVF/ICSI ***(based on level C evidence).***

In women with endometrioma, clinicians may use antibiotic prophylaxis at the time of oocyte retrieval, although the risk of ovarian abscess following follicle aspiration is low ***(based on level D evidence).***

Medical treatment prior to Assisted reproductive technologies

There is some evidence that taking a GnRH agonist for a period of 3 to 6 months prior to treatment with **IVF** improves the chance to get of pregnant in infertile women with endometriosis.

Recommendations in the guideline:
Clinicians can prescribe GnRH agonists for a period of 3 to 6 months prior to treatment with assisted reproductive technologies to improve clinical pregnancy rates in infertile women with endometriosis *(based on level B evidence).*

Surgery prior to Assisted reproductive technologies

There is no strong evidence that performing surgery before starting ART is effective to increase the chance of pregnancy. However, there is also no evidence that surgery decreases chances of pregnancy. Hence, your doctor may advise surgery if you have significant pain or if s/he cannot reach the ovaries during ART in case of large ovarian endometrioma.

There is no evidence of increased cumulative endometriosis recurrence rates after ovarian stimulation for **IVF**/**ICSI** in women with endometriosis, meaning that undergoing ART does not necessarily worsen your endometriosis.

Recommendations in the guideline:
In infertile women with AFS/ASRM stage I/II endometriosis undergoing laparoscopy prior to treatment with assisted reproductive technologies, clinicians may consider the complete surgical removal of endometriosis to improve live birth rate, although the benefit is not well established *(based on level C evidence).*

In infertile women with endometrioma larger than 3 cm there is no evidence that cystectomy prior to treatment with assisted reproductive technologies improves pregnancy rates *(based on level A evidence).*

In women with endometrioma larger than 3 cm, the GDG recommends clinicians only to consider cystectomy prior to assisted reproductive technologies to improve endometriosis-associated pain or the accessibility of follicles *(Good practice point).*

The effectiveness of surgical excision of deep nodular lesions before treatment with assisted reproductive technologies in women with endometriosis-associated infertility is not well established with regard to reproductive outcome *(based on level C evidence).*

Part 8: Beyond usual treatment

Medical and surgical treatment of endometriosis have been studied widely and are used in clinical practice. Since these treatments have limitations, some women prefer to explore other options.

You may have heard about complementary and alternative therapies. These therapies are very popular, but are not often given by doctors. Examples are acupuncture, behavioural therapy, nutrition (including dietary supplements, vitamins, and minerals), expert patient programmes, recreational drugs, reflexology, homeopathy, psychological therapy, Traditional Chinese Medicine, herbal medicine, sports and exercise. Several of these complementary and alternative therapies are used by women with endometriosis to reduce pelvic pain, **dysmenorrhea**, improve the chances of pregnancy and improve quality of life.

Before recommending a certain treatment for pain, doctors would like to have some objective data collected in a high quality study showing that a certain therapy is effective and not harmful to the patient. Up to now, there is no good proof that complementary and alternative treatments truly help reducing pain or improving fertility in women with endometriosis. However, the guideline development group acknowledges that some women who use complementary and alternative treatments may feel benefit from this, meaning that they have improved quality of life and/or can cope better with the symptoms of endometriosis.

It is important to tell your doctor if you are using any complementary or alternative treatment, so s/he can give you additional information.

Recommendations in the guideline:

The GDG does not recommend the use of nutritional supplements, complementary or alternative medicine in the treatment of endometriosis-associated pain or infertility, because the potential benefits and/or harms are unclear. However, the GDG acknowledges that some women who seek complementary and alternative medicine may feel benefit from this. ***(Good practice point).***