



Why you should have an HSG test

What an HSG test is, what it does and why this can be a test for everyone. We're dispelling the myths and explaining the benefits for natural fertility.



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A hysterosalpingogram (HSG), is an X-ray to look for abnormalities in the womb, or blockages in the fallopian tubes, which may explain why a woman is unable to get pregnant or is suffering miscarriages. Sometimes we undertake the investigation in women who have had surgery to their womb or tubes to check all is well before they try to conceive.

“For couples, the infertility journey can be a stressful time. We should recognise that and treat them with dignity, respect and empathy.”

Who should have an HSG test?

A woman will be referred for an HSG by her fertility team. The HSG, together with ultrasound (which looks at the ovaries, the lining and wall of the womb), blood tests (which check how the ovaries are working) and her partner's sperm test, give the fertility team a picture of what is causing subfertility and informs them how best to treat the couple.

How is an HSG performed?

The examination is undertaken in the first half of the woman's menstrual cycle, after she has stopped bleeding. She is asked not to have intercourse from the first day of the period and until after the test to ensure she is not pregnant at the time of the examination.

It is important to remember that, for these couples, the infertility journey can be a stressful time. We should recognise that and treat them with dignity, respect and empathy.

Our emphasis is to be kind, gentle and not to rush

On arrival, the woman will be asked to change into a gown and brought to the X-ray room. After taking a brief history, the procedure is fully explained, and the woman is given time for questions and is asked to give her consent to proceed. She then lies on the X-ray table in a similar position to having a smear.

A speculum is very gently inserted into the vagina. A very soft tube or catheter is then passed into the canal that leads

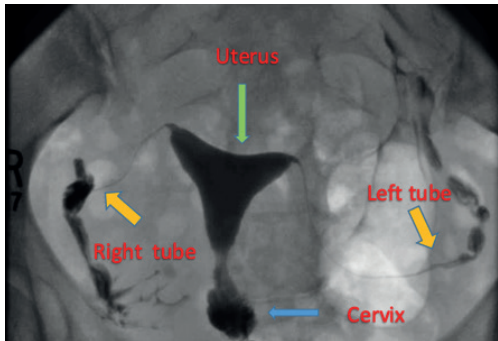


FIG. 1: A normal HSG

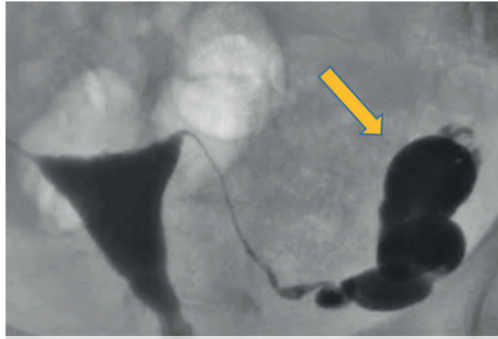


FIG. 2: An HSG showing a hydrosalpinx (dilated blocked tube) on the left

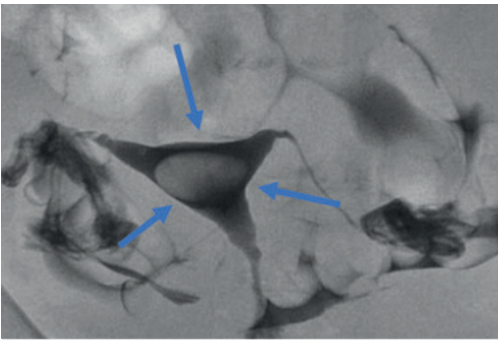


FIG. 3: An HSG showing a polyp in the uterus (blue arrows)

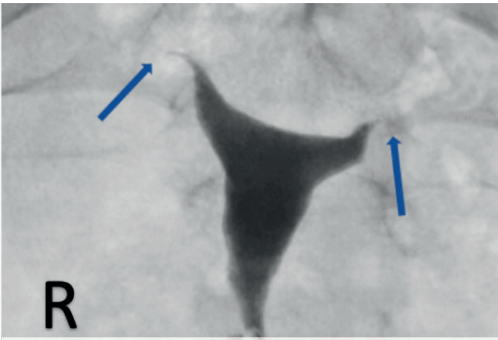


FIG. 4: An HSG showing both fallopian tubes are blocked close to the womb (blue arrows)

“In couples with unexplained infertility the HSG is not only diagnostic but may also offer them an increased chance of natural conception.”

from the cervix to the womb. A clear liquid (called ‘contrast’) is then gently passed into the womb. It contains iodine, which can be seen on X-ray images. Using an X-ray camera the doctor watches on a TV screen as the fluid passes into the womb and the tubes. Four or five pictures are taken to make a record of what is seen.

The X-ray table may be tilted, or the patient asked to roll from side to side to help the tubes to fill. Coughing and laughter are great aids to tubal filling!

What are the side-effects?

Side-effects – these are few and should be discussed in detail with the doctor undertaking the procedure.

Discomfort – patients’ pain thresholds vary. Some women don’t feel a thing, some find it uncomfortable – a bit like period cramps. Only a very few, in our experience, find it very painful.

Infection – this is uncommon and most likely to occur in women who have had an infection before. In our practice, all ladies are given a single dose of antibiotics to minimise this risk.

Reaction to fluid (contrast) – this is very unusual with modern contrast; we check beforehand if women have any significant allergies.

Radiation – radiologists work within very strict regulations regarding about the amount of radiation that can be used and there are national guidelines to minimise any risk from radiation.

The benefits of an HSG

There are two types of fluid (contrast) we can use for an HSG – one is water soluble and the other is oil soluble. There have been many anecdotal reports of enhanced natural pregnancy rates after an HSG.

In 2017, a detailed study undertaken in the Netherlands proved conclusively that, in women under 38 with unexplained subfertility, an HSG with oil-based contrast resulted in higher ongoing pregnancy and live birth rates than an HSG with water soluble contrast. So, in couples with unexplained infertility, the HSG is not only diagnostic but may also offer them an increased chance of natural conception. ■

Source: ‘Oil-Based or Water-Based Contrast for Hysterosalpingography in Infertile Women’ Published in the New England Journal of Medicine N Engl J Med 2017; 376:2043-2052 <https://www.nejm.org/doi/full/10.1056/NEJMoa1612337>

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Women should know about this simple treatment for infertility

Women considering fertility treatment should be aware of a simple procedure that may increase their chances of becoming pregnant without the need for expensive and involved IVF.

Women experiencing infertility problems may feel under pressure to start IVF (in vitro fertilisation) treatment immediately.

But there is a quick, minimally-invasive intervention they could explore first, potentially increasing their chance of becoming pregnant without the need for IVF. The procedure involves using iodised poppy seed oil, which probably flushes fertility-hindering debris from the fallopian tubes and appears to have a positive immuno-biological impact on fertility.

However, many patients are unaware this treatment exists – and that’s wrong, says Professor Neil Johnson, a fertility specialist based in Auckland, New Zealand, and President of the World Endometriosis Society.

“IVF is involved, expensive and carries the possibility of complications,” he notes. “This intervention, however, is low-invasive, cost-effective, carries a very low chance of complications and is very effective.”

What to expect during the procedure

The iodised poppy seed oil can be administered in a hysterosalpingogram (HSG). “The patient lies on an X-ray bed,” Professor Johnson explains. “A speculum is then inserted into the vagina and tubing is sent through the canal of the cervix. The solution is then gently instilled into the uterus, through the fallopian tubes and bathes the pelvic cavity.

“Very occasionally, there may be some discomfort, but it is not usually painful, and the vast majority of patients tolerate it extremely well. Appointments take around half an hour, but the main part of the procedure usually takes just 10 minutes.”

Particular success for woman with endometriosis


An HSG was once a purely diagnostic intervention, where dye is injected into the cervical canal in order to investigate the shape of the womb and fallopian tubes.

However, between 1999 and 2004, Professor Johnson and his team recognised its remarkable therapeutic effects when iodised poppy seed oil doubled fertility within a trial group with unexplained infertility.

The procedure was particularly beneficial for women with a history of endometriosis, an inflammatory disease where tissue that normally lines the inside of the uterus is also found outside of the uterus. “Endometriosis is a benign condition that can cause abdominal pain, pelvic pain and infertility,” he says.

“In New Zealand, we’ve discovered that this procedure has increased the fertility of women with endometriosis, which can have a substantial negative fertility

INTERVIEW WITH:



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impact even when the disease itself is not extensive.

“Indeed, we found that those with a history of endometriosis in our trial group experienced around a four-fold improvement in fertility. We thought it was amazing and have been offering it as a routine treatment for infertility since 2004.”

Patients who are unsuitable for treatment

Nevertheless, there are women who are unsuitable for the intervention. “For example, if a patient’s fallopian tubes are blocked or damaged, then the treatment is not going to work, and they should proceed to IVF,” says Professor Johnson.

“Other patients who won’t find it beneficial include women who don’t release an egg – they will need ovulation induction instead – and those whose partners have a low sperm count. However, it is *absolutely* appropriate for the majority of women who have relatively mild endometriosis-related infertility that hasn’t damaged their fallopian tubes. In fact, it’s probably their best first-line treatment because it’s so effective.”

There’s now growing interest in the procedure around the world. “That’s very exciting,” says Professor Johnson. “I think every woman visiting a fertility service should have the opportunity to explore this treatment as a first option, instead of moving straight to IVF.” ■


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Tubal flushing during HSG with oil contrast – from diagnostics to fertility enhancement

Hysterosalpingography (HSG) was initially introduced as a diagnostic test to evaluate the patency of the fallopian tubes in the fertility work-up patients presenting with infertility.

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Debates on the therapeutic effects of tubal flushing during HSG started over six decades ago. Summarizing the available evidence, the 2015 Cochrane systematic review showed a non-significant higher amount of ongoing pregnancies in favor of tubal flushing with oil-based contrast in infertile women (Mohiyiddien et al., 2015).

The H2Oil study

In order to clarify the uncertainty around the use of oil- or water-based contrast for HSG, the H2Oil study, a large randomised trial, in which 1,119 infertile women participated, was conducted in the Netherlands. This landmark study, published in the New England Journal of Medicine, showed significantly 10% more ongoing pregnancies as well as live births in the first six months following HSG with oil-based contrast, as compared to HSG with water-based contrast (Dreyer et al, 2017).

Publication of the study generated a worldwide renewed interest in tubal flushing and the use of oil-based contrast for fertility enhancement.

Two recent and updated systematic reviews confirmed these findings (Fang, et al, 2018, Wang, et al, 2019).

Flushing debris and mucus from the fallopian tubes

The principal theory is that tubal flushing with oil-based contrast flushes accumulated debris and mucous plugs from undamaged tubes, which will enhance tubal patency (openness).

Several safety concerns on oil-based contrast have been raised. Firstly, venous intravasation occurs in approximately 2-7% of the cases in HSG, and occurs more frequently when using oil contrast. While intravasation can potentially result in pulmonary embolism, no cases of embolism were reported in the published trials, which is reassuring.

Pelvic infection is another potential safety concern. However, data from the available trials are also reassuring showing that it is a rare event.

The cost-effectiveness of tubal-flushing

An economic analysis based on the data of the H2Oil study and 2017 US prices (using consumer price index data and considering a cost difference between oil-based and water-based contrast in the United States being globally the highest) showed a cost-effectiveness ratio for oil-based

contrast compared to water-based contrast of \$8,198 for an additional ongoing pregnancy (Rijswijk van et al., 2018). This is less than the cost of one IVF treatment (US\$11,500). Moreover, it is less time consuming and burdensome for women. Thus, there is a strong argument to incorporate tubal flushing with oil-based contrast during HSG in clinical practice.

Limitations in older or higher-risk women

However, the data from the H2Oil study are limited to infertile women at a low risk of tubal pathology, who were younger than 39 years and without ovulation disorders. Therefore, a clear knowledge gap exists with respect to women who were not evaluated in the H2Oil study, i.e. women with ovulation disorders, women who are at high risk for tubal pathology, or women who are above 38 years of age, in whom infertility is driven by decreased ovarian reserve. Since the mechanism of infertility in these women is completely different, it is unknown if tubal flushing with oil-based contrast increases fertility chances in these women.

What’s next?

In 2019, two randomised trials started. The first trial will test the hypothesis that HSG with oil-based contrast will increase the pregnancy – and live birth rate as compared to HSG with water-based contrast in the above mentioned groups of infertile patients – and the second one will investigate cost-effectiveness of direct versus delayed (six months after fertility work-up) tubal flushing during HSG with oil contrast in infertile women. The hypothesis is that direct tubal flushing will lead to a shorter time to pregnancy and thus reduce the need for IVF and therefore also reduce the costs. More info on www.H2Oilie.nl. ■

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