

## Surgical Sperm Retrieval (SSR)

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### Why do I need surgical sperm retrieval?

Surgical sperm retrieval (SSR) is a treatment option for men who have no sperm (Azoospermia) in their ejaculate. Reasons for undertaking (SSR) could include:

Obstructive Azoospermia – An obstruction preventing sperm release from the testicle due to previous injury or infection, or Congenital Absence of the Vas Deferens (tube carrying sperm from testis) in men with Cystic Fibrosis, or Vasectomy.

Non-obstructive Azoospermia – Likely testicular failure where the testicles are producing low numbers of sperm which are not found in the ejaculate. This could also be associated with genetic conditions.

Other possible clinical indications may be for men with erectile dysfunction and retrograde ejaculation.

### What are the different techniques of SSR?

There are different methods of SSR. The cause of your Azoospermia will determine the best way to retrieve sperm in your individual case.

### TESE (Testicular Sperm Extraction)

This is often done under general anaesthetic. A 0.5cm incision is made into the testis itself. A small sample of the testicular tissue is taken which is then examined for sperm. This is usually carried out if the male hormone levels and testicular size are normal.

### Micro-TESE (Microscopic Testicular Sperm Extraction)

This requires a general anaesthetic and involves performing a 2-3 cm incision on the scrotal skin. The testis is opened and several biopsies are taken from each testicle in different areas and by using an operating microscope, some of the fine individual sperm producing tubes are removed for detailed assessment. The sample is transported to the Andrology department by a responsible adult of patient's choice to the Hewitt Fertility Centre for detailed examination, and storage of sperm if found.

### How long will I be in hospital?

SSR is a day case procedure. When done under general anaesthetic, it usually takes 3-4 hours to recover and then you are discharged home. The material collected will be examined on the same day. To increase the likelihood of finding sperm, the sample is cultured in medium by the embryology team. Any material with sperm will be frozen and placed in storage to be used in assisted reproduction treatment cycle(s) at a later stage. These specimens are

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then thawed and used to inject mature eggs obtained during *in-vitro* fertilisation (IVF) treatment using the technique of Intra-cytoplasmic Sperm Injection (ICSI).

## What will happen after the procedure?

Potential side effects post procedure may be some testicular discomfort and mild bruising. The sedation or anaesthetic will wear off following the procedure, however a responsible adult will need to drive you home. You should try to have a relative stay with you for the first 24 hours after surgery.

You will need to rest until the effects of the anaesthetic/sedation have passed. Your scrotum will feel sore as the anaesthetic wears off and you may need painkillers. You will be wearing supportive underwear from the day of procedure and scrotal support (jock strap) daily for a further 5-6 days to minimise discomfort and protect your scrotum and testes. If you need pain relief, you can take over-the-counter painkillers such as Paracetamol or Ibuprofen. Showering is advised; try to avoid hot baths to prevent infection. Dissolvable sutures take about 2 weeks to come away.

Further advice includes:

- Avoid alcohol for 48 hours post-surgery. Refrain from strenuous exercise/lifting for four weeks.
- There are no stitches that need to be removed.
- Sexual activity is not advised for a week after the procedure.
- During the procedure you will be given antibiotics.

## Are there any complications?

**SSR is a relatively low risk procedure. Most men do not experience side effects.**

Possible complications include:

- bruising
- haematoma (collection of blood in scrotum)
- minimal scarring
- infection
- damage to blood vessels - this can cause permanent damage to one or both testicles (testicular atrophy - rare).
- long-term testicular pain (5-10%) - this is caused by damaged nerves or scarring and may require long term pain medication.
- anaesthetic side effects - postoperative nausea and vomiting (usually lasts for 1-2 hours and can be controlled with anti-emetic medications). Very rarely anaphylaxis, a severe reaction, (risk is 1 in 10,000).

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## How effective is SSR?

Obstructive cases are usually more successful than non-obstructive. The sperm which is successfully retrieved is frozen and this does not affect its ability to subsequently fertilise an egg. However the sperm retrieved is usually low in numbers and may not be mature therefore cannot successfully fertilise an egg using standard IVF. Because of this, the embryologist will pick out a single sperm to inject into each mature egg (this procedure is called Intracytoplasmic Sperm Injection or ICSI).

## References

British Association of Urological Surgeons (2017). BAUS: Surgical sperm retrieval patient information leaflet. Leaflet No: 16/045. Available online: [https://www.baus.org.uk/\\_userfiles/pages/files/Patients/Leaflets/Sperm%20retrieval.pdf](https://www.baus.org.uk/_userfiles/pages/files/Patients/Leaflets/Sperm%20retrieval.pdf)

NHS England (2016). Clinical Commissioning Policy: Surgical sperm retrieval for male infertility. Available online: <https://www.england.nhs.uk/wp-content/uploads/2018/07/Surgical-sperm-retrieval-for-male-infertility.pdf>

Shah, R. and Gupta, C. (2018). Advances in sperm retrieval techniques in azoospermic men: a systematic review. Arab Journal of Urology. 16(1): P125-131.

This leaflet can be made available in different formats on request. If you would like to make any suggestions or comments about the content of this leaflet, then please contact the Patient Experience Team on 0151 702 4353 or by email at [pals@lwh.nhs.uk](mailto:pals@lwh.nhs.uk)

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