



**The Shrewsbury and
Telford Hospital**
NHS Trust

Patient Information

The Shropshire and Mid Wales Fertility Centre

Smoking and Conception

Shropshire and Mid Wales Fertility Centre

Address: Severn Fields Health Village, Sundorne Road,
Shrewsbury SY1 4RQ.

Tel:01743 261202

1. Introduction

Cigarette smoking is known to be harmful to your general health and increases the risk of heart disease and cancer. It also has a serious negative effect on the chances of having a baby both naturally and through assisted conception (e.g. In-Vitro Fertilisation).

Cigarette smoke contains over 4,000 chemicals (e.g. nicotine, cadmium, arsenic, carbon monoxide, cyanide, benzene, formaldehyde and ammonia) many of which are dangerous, therefore smoking when trying to conceive and when pregnant harms your unborn baby. Studies have shown that women who smoke are at an increased risk for a delay in becoming pregnant, for both primary and secondary infertility.

Local NHS service commissioners (the groups that pay for patients in their area to have NHS treatment) will not fund treatment if either of the couple smoke or vape. This decision is made on the basis of the evidence that is summarised in this information leaflet. **If we suspect that anyone having NHS treatment is smoking, a member of staff may ask patients to take a test with a smoke analyser. If the test is positive, treatment will be cancelled.**

Smokers who are seeking self-funded treatment are strongly encouraged to quit.

2. How does cigarette smoke affect women's fertility?

The growing follicle

Smoking brings forward the menopause by about 2 years. Women who smoke have a lower 'ovarian reserve' meaning that they have fewer eggs remaining than those that have never smoked. In animals, smoking has been shown to damage the growing follicle (which contains the egg) and reduce its growth.

Hormones

Smoking can cause imbalances in the levels of your hormones. Smokers have higher testosterone levels, higher Follicle Stimulating Hormone (FSH) levels and lower levels of both Oestrogen and Progesterone at key stages in the menstrual cycle. A high FSH level may inhibit the stimulation of the follicles in the ovary to grow and prepare the eggs for ovulation. This can mean that smokers are less likely to ovulate (release an egg) and less likely to conceive

The Embryo up to day 5 (Blastocyst)

In animals, the chemicals in cigarette smoke have been shown to inhibit (slow) the growth of the developing embryo and to increase the number of cells (individual parts of the embryo) that die during development.

The Fallopian tubes

Cigarette smoke may affect how the cilia (tiny 'hairs') within the fallopian tubes work and by doing so may affect the transport of the egg and embryo to the womb.

Ectopic pregnancy, already a slightly higher risk from having IVF treatment, is a serious complication, which occurs when implantation of the fertilised egg takes place outside the uterus, often in the fallopian tubes. The cause of ectopic pregnancy is unknown but involves the motility and patency of fallopian tubes. Exposure to nicotine has been shown to decrease tubal motility, which may increase the chance of the fertilised egg remaining in the fallopian

tubes. Cigarette smoking has also been associated with pelvic inflammatory disease, which is a strong risk factor for tubal pregnancy.

Implantation

Implantation is the process by which the embryo attaches to the lining of the womb. When implantation occurs you become pregnant. In smokers, the implantation rate is reduced by at least 20%, making you less likely to become pregnant if you smoke.

3. Vaping

Recent animal studies have shown that E-cigarettes, even when nicotine free, include many harmful substances that disturb the hormonal balance and reduce the implantation of embryo in women. It also negatively affects the structure and function of the sperms in men.

The NHS commissioning groups will not fund treatment if the patient or the partner are vaping.

4. Smoking whilst pregnant

If you smoke whilst you are pregnant, you expose the growing fetus to all of the toxic chemicals that you are being exposed to. You reduce the amount of oxygen available for the fetus and as a result of this, its heart has to work harder.

Research has shown us that smoking in pregnancy is linked to problems such as:

- Miscarriage
- Premature birth
- Low birth weight
- Still birth
- Cot death

If you stop smoking before getting pregnant;

- You will have less morning sickness and fewer complications of pregnancy
- You are more likely to have a healthier pregnancy and baby
- You will cope better with the birth
- Your baby will cope better with any birth complications

5. Smoking and IVF/ICSI

Fertilisation rates are lower in IVF using sperm from men who smoke. Embryos produced in IVF have a lower chance of implantation (pregnancy) if the male partner smokes.

6. How does cigarette smoking affect male fertility?

Cigarette smoking among men can affect spermatogenesis (sperm cell production) and sperm quality through hormonal and toxic influences. This means that the smokers can have lower numbers of sperm and sperm that is poorer quality than that men who don't smoke.

7. How long should I have given up smoking before I can have treatment?

The longer you give up the better. We recommend that you give up smoking if you are trying to conceive, not just when you discover you need treatment.

8. Can I have treatment if I smoke?

NHS patients cannot have treatment if either of them smoke. The Shropshire & Mid-Wales Fertility Service has a strict policy that it will not allow patients who smoke to be treated. Any couple found to be smoking (or where one individual smokes) will have their treatment abandoned. If you have a treatment abandoned due to smoking, this abandoned cycle will be counted as one of your allocation of NHS treatments.

Patients who are paying for their own treatment are strongly encouraged to quit smoking prior to treatment.

9. Where can I get help to quit smoking?

Further information about where you can get help to quit smoking can be found on the NHS website:

<https://www.nhs.uk/live-well/quit-smoking/nhs-stop-smoking-services-help-you-quit/>

References

Effects of cigarette smoking on reproduction C. Dechanet, T. Anahory, J.C. Mathieu Daude, X. Quantin, L. Reyftmann, S. Hamamah, B. Hedon and H. Dechaud *Hum. Reprod. Update* (2011) 17(1): 76-95.

Fertility assessment and treatment for people with fertility problems- Clinical Guideline. National Institute for Clinical Excellence. February 2004.

[Reproductive Effects - The Health Consequences of Smoking - NCBI Bookshelf \(nih.gov\)](#) (2004)

Contact details for more information

Useful telephone numbers

Fertility nursing team **01743 261202** or call the hospital switchboard on **01743 261000** and ask to be put through to the Fertility unit. Please note the department accepts calls from 9am to 5pm Monday to Friday. **Further information is available from;**

Patient Advice and Liaison Service (PALS)

We act on your behalf when handling patient and family concerns, liaising with staff, managers and where appropriate, relevant organisations to negotiate immediate or prompt solutions. We can also help you get support from other local or national agencies.

Royal Shrewsbury Hospital, Tel: 0800 783 0057 or 01743 261691

Princess Royal Hospital, Tel: 01952 282888

Other Sources of Information

NHS 111

A fast and easy way to get the right help, whatever the time. NHS 111 is available 24 hours a day, 365 days of the year.

Telephone: 111 (free from a landline or mobile)

Website: www.nhs.uk

Patient UK

Provides leaflets on health and disease translated into 11 other languages as well as links to national support/self-help groups and a directory of UK health websites.

Website: www.patient.info

Special Needs Information

If you need any further help, for example with an interpreter or if you need this information in another format please contact the fertility unit to arrange this by calling (01743) 261202 and select option 2 or email sth-tr@shropshireivf@nhs.net

Website: www.sath.nhs.uk

www.shropshireivf.nhs.uk

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