



**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

## **Introduction**

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

Most NHS commissioning bodies (the groups that pay for local patients to have NHS treatment) insist that patients quit smoking before being treated. This decision is made on the basis of the evidence that is summarised in this information leaflet.

Cigarette smoke contains thousands of chemicals (e.g. nicotine, cadmium, arsenic, carbon monoxide, cyanide, benzene, formaldehyde and ammonia), the majority of which are poisonous, with many causing cancer.

## **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.

### **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**

There is some evidence that smoking may be associated with an increased risk of lesions (damaged areas) forming in the fallopian tubes and an increased risk of ectopic pregnancy (a potentially life threatening condition where an embryo implants in the tubes rather than the womb). Cigarette smoke may affect how the cilia (tiny 'hairs' within the tubes) work and by doing so may affect the transport of the egg and embryo to the womb.

### **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.

### **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. Babies of smokers are more likely to be born prematurely (early) and to have low birth weight. Smoking also increases the risk of stillbirth and miscarriage.

## **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.

### **How does cigarette smoking affect male fertility?**

Smoking reduces the quality of the sperm and damages their DNA.

### **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.

### **Can I have treatment if I smoke?**

No. 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.

### **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.

## 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](http://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](http://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](mailto:sth-tr@shropshireivf.nhs.net)

Website: [www.sath.nhs.uk](http://www.sath.nhs.uk)

[www.shropshireivf.nhs.uk](http://www.shropshireivf.nhs.uk)

Information Produced by: The Shropshire and Mid Wales Fertility Centre

Date of Publication: 26/6/2021

Due for Review on: 26/6/2024

Document Number A177C version 6

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