Fertility Clinic

Gynaecology
Women and Children's Services
Directorate of Operations

Key fertility information from National Institute for Health and Care Excellence.

Initial advice to people concerned about delays in conception

1. Chance of conception

Over 80% of couples in the general population will conceive within 1 year if:

- The woman is aged under 40 years

  and

- They do not use contraception and have regular sexual intercourse

Of those who do not conceive in the first year, about half will do so in the second year (cumulative pregnancy rate over 90%).

If you are using artificial insemination to conceive and are concerned about their fertility you should know that:

- Over 50% of women aged under 40 years will conceive within 6 cycles of intrauterine insemination (IUI)
- Of those who do not conceive within 6 cycles of intrauterine insemination, about half will do so with a further 6 cycles (cumulative pregnancy rate over 75%)

Female fertility and (to a lesser extent) male fertility declines with age.

2. Frequency and timing of sexual intercourse or artificial insemination

If you are having sexual intercourse, your chances of conception are shown in Table 1. If you are using artificial insemination, your chances of conception are shown in Table 2.

Vaginal sexual intercourse every 2 to 3 days optimises the chance of pregnancy.

If you are using artificial insemination to conceive, you should have your insemination timed around ovulation.

3. Psychological effects of fertility problems

Did you know that stress in the male and / or female partner can affect the couple's relationship and is likely to reduce libido and frequency of intercourse which can contribute to the fertility problems.

You may find it helpful to contact a fertility support group.

Counselling is available because fertility problems themselves, and the investigation and treatment of fertility problems, can cause psychological stress. You may raise the issue with your GP in the first instance.

4. Alcohol

If you are a woman who is trying to become pregnant, did you know that drinking no more than 1 or 2 units of alcohol, once or twice per week, and avoiding episodes of intoxication reduces the risk of harming a developing foetus?

Men who keep their alcohol consumption within the Department of Health's recommendations of 3 to 4 units per day for men are unlikely to affect their semen quality, but excessive alcohol intake is detrimental to semen quality.

5. Smoking

Did you know that women who smoke are likely to reduce their fertility, but can be referred to a smoking cessation programme to support their efforts in stopping smoking? You should also be aware that passive smoking is likely to affect the chance of conceiving.

Men who smoke should be aware that there is an association between smoking and reduced semen quality (although the impact of this on male fertility is uncertain), and that stopping smoking will improve their general health.

6. Caffeinated beverages

Did you know that there is no consistent evidence of an association between consumption of caffeinated beverages (tea, coffee and colas) and fertility problems?

7. Obesity

Women who have a body mass index (BMI) of more than 30 are likely to take longer to conceive. If women who have a BMI of 30 or over are not ovulating (producing eggs), losing weight is likely to increase their chances of conception. Participating in a group programme involving exercise and dietary advice leads to more pregnancies than weight loss advice alone.

Men who have a BMI of 30 or over are likely to have reduced fertility.

8. Low body weight

If you are a woman with a BMI of less than 19 and have irregular menstruation or are not menstruating, increasing your body weight is likely to improve your chance of conception.

9. Tight underwear

There is an association between elevated scrotal temperature and reduced semen quality, but it is uncertain whether wearing loose-fitting underwear improves fertility.

10. Occupation

Some occupations involve exposure to hazards that can reduce male or female fertility and therefore enquiries about occupation are made to people who are concerned about their fertility and appropriate advice offered when needed.

11. Prescribed, over-the-counter and recreational drug use

Did you know that over-the-counter and recreational drugs interfere with male and female fertility? Enquiries about these are made in clinic to people who are concerned about their fertility and appropriate advice offered.

12. Complementary therapy

Did you know that the effectiveness of complementary therapies for fertility problems has not been properly evaluated and further research is needed before such interventions can be recommended?

13. Folic acid supplementation

Did you know that supplementation with folic acid before conception and up to 12 weeks' gestation reduces the risk of having a baby with neural tube defects? The recommended dose is 0.4 mg per day. For women who have previously had an infant with a neural tube defect (spina bifida) or who are receiving anti-epileptic medication or who have diabetes (see Diabetes in pregnancy, NICE clinical guideline 63), a higher dose of 5 mg per day is recommended.

14. Regularity of menstrual cycles

Women who are undergoing investigations for infertility will be offered a blood test to measure serum progesterone in the mid-luteal phase of their cycle (day 21 of a 28-day cycle) to confirm ovulation even if they have regular menstrual cycles.

Women with prolonged irregular menstrual cycles should be offered a blood test to measure serum progesterone (egg production). Depending upon the timing of menstrual periods, this test may need to be conducted later in the cycle (for example day 28 of a 35-day cycle) and repeated weekly thereafter until the next menstrual cycle starts.

The use of basal body temperature charts (a natural method of ovulation detection) to confirm ovulation does not reliably predict ovulation and is not recommended.

15. Investigation of suspected fallopian tubal and uterine abnormalities

Women who are not known to have comorbidities (such as pelvic inflammatory disease, Chlamydia, previous ectopic pregnancy or endometriosis) would be offered Hysterosalpingography (HSG) to screen for tubal occlusion because this is a reliable test for ruling out tubal occlusion, and it is less invasive and makes more efficient use of resources than laparoscopy.

Where appropriate expertise is available, screening for tubal occlusion using hysterosalpingo-contrast-ultrasonography (HYCOSY) should be considered because it is an effective alternative to hysterosalpingography for women who are not known to have comorbidities.

Women who are thought to have comorbidities would be offered laparoscopy and dye so that tubal and other pelvic pathology can be assessed at the same time.

16. Susceptibility to rubella (otherwise known as German measles)

Women who are concerned about their fertility would be offered testing for their rubella status so that those who are susceptible to rubella can be offered vaccination. Women who are susceptible to rubella would be offered vaccination and advised not to become pregnant for at least 1 month following vaccination.

17. Cervical cancer screening

To avoid delay in fertility treatment a specific enquiry about the timing and result of the most recent cervical smear test would be made to women who are concerned about their fertility. Cervical screening should be offered in accordance with the national cervical screening programme guidance.

18. Screening for Chlamydia trachomatis

Prophylactic antibiotics would be considered before uterine instrumentation if screening has not been carried out e.g. at Hysterosalpingogram (HSG).

19. Ovulation disorders

A. World Health Organisation (WHO) Group I ovulation disorders (not producing eggs)

Women with WHO Group I anovulatory infertility (failure to produce eggs) can improve their chance of regular ovulation, conception and an uncomplicated pregnancy by:

- Increasing their body weight if they have a BMI of less than 19

  and / or

- Moderating their exercise levels if they undertake high levels of exercise

B. WHO Group II ovulation disorders (receiving first line treatment of ovulation induction)

In women with WHO Group II ovulation disorders receiving first-line treatment for ovarian stimulation, please be advised that:

Women with WHO Group II anovulatory infertility who have a BMI of 30 or over will be advised **to lose weight**. Please know that this alone may restore ovulation, improve their response to ovulation induction agents, and have a positive impact on pregnancy outcomes.

In women with WHO Group II anovulatory infertility, one of the following treatments, taking into account potential adverse effects, ease and mode of use, the woman's BMI, and monitoring needed will be offered:

- Clomiphene Citrate

  or

- Metformin

  or

- A combination of the above

For women who are taking Clomiphene Citrate, ultrasound monitoring may be offered during at least the first cycle of treatment to ensure that they are taking a dose that minimises the risk of multiple pregnancy or offered selectively in those with symptoms of hyperstimulation.

For women who are taking Clomiphene Citrate, you will not continue treatment for longer than 6 months.

Women prescribed Metformin should be aware of the side effects associated with its use (such as nausea, vomiting and other gastrointestinal disturbances).

For women with WHO Group II ovulation disorders who are known to be resistant to Clomiphene Citrate, consider one of the following second-line treatments (depending on clinical circumstances and the woman's preference):

- laparoscopic ovarian drilling

  or

- combined treatment with Clomiphene Citrate and Metformin if not already offered as first-line treatment

  or

- Gonadotropins

Surgical treatment for hydrosalpinges (blockage of fallopian tube) before in vitro fertilisation treatment (IVF)

Women with hydrosalpinges (tubal blockage) would be offered salpingectomy, preferably by laparoscopy (keyhole), before IVF treatment because this improves the chance of a live birth.

Medical management (ovarian suppression) of endometriosis

Medical treatment of minimal and mild endometriosis diagnosed as the cause of infertility in women does not enhance fertility and should not be offered.

Surgical ablation

Women with minimal or mild endometriosis who undergo laparoscopy would be offered surgical ablation or resection of endometriosis plus laparoscopic adhesiolysis because this improves the chance of pregnancy.

Women with ovarian endometriomas would be offered laparoscopic cystectomy because this improves the chance of pregnancy.

Women with moderate or severe endometriosis would be offered surgical treatment because it improves the chance of pregnancy.

Unexplained infertility (Infertility where all the common investigations are of normal result)

Ovarian stimulation for unexplained infertility

Do not offer oral ovarian stimulation agents (such as clomiphene citrate, anastrozole or letrozole) to women with unexplained infertility.

Inform women with unexplained infertility that clomiphene citrate as a stand-alone treatment does not increase the chances of a pregnancy or a live birth.

Advise women with unexplained infertility who are having regular unprotected sexual intercourse to try to conceive for a total of 2 years (this can include up to 1 year before their fertility investigations) before IVF will be considered.

Offer IVF treatment to women with unexplained infertility who have not conceived after 2 years (this can include up to 1 year before their fertility investigations) of regular unprotected sexual intercourse.

Figures and tables to support chances of conception and embryo quality recommendations.

Table 1 – Cumulative probability of conceiving a clinical pregnancy by the number of menstrual cycles

Cumulative probability of conceiving a clinical pregnancy by the number of menstrual cycles attempting to conceive in different age categories (assuming vaginal intercourse occurs twice per week) (Reproduced with permission: Dunson DB, Baird DD, Colombo B [2004]. Increased infertility with age in men and women. Obstetrics and Gynecology 103: 51–6).

Age category (years)	Pregnant after 1 year (12 cycles) (%)	Pregnant after 2 years (24 cycles) (%)
19–26	92	98
27–29	87	95
30–34	86	94
35–39	82	90

Table 2 – Cumulative probability of conceiving a clinical pregnancy by the number of cycles of insemination.

Cumulative probability of conceiving a clinical pregnancy by the number of cycles of insemination in different age categories and according to the method and sperm status where assisted reproduction technology is used (see the full guideline for full references).

Woman's age (years)	ICI using thawed semen(Schwartz et al. 1982)		Woman's age (years)	ICI using fresh semen (van Noord-Zaadstra, 1991)		Woman's age (years)	IUI using thawed semen (HFEA data and personal communication)	
	6 cycles	12 cycles		6 cycles	12 cycles		6 cycles	12 cycles
<30	50%	70%	<31	58%	76%	-	-	-
30–34	43%	62%	31–35	50%	71%	<35	63 %	86 %
>34	33%	54%	>35	39%	55%	35–39	50 %	75 %
Key: ICI = intracervical insemination; IUI = intrauterine insemination								

Figure 1 The effect of maternal age on the average rate of pregnancy

Calculated on the basis of studies in 10 different populations that did not use contraceptives (Heffner 2004[11], based on 2 reviews by Menken et al. 1986 and Anderson et al. 2000).

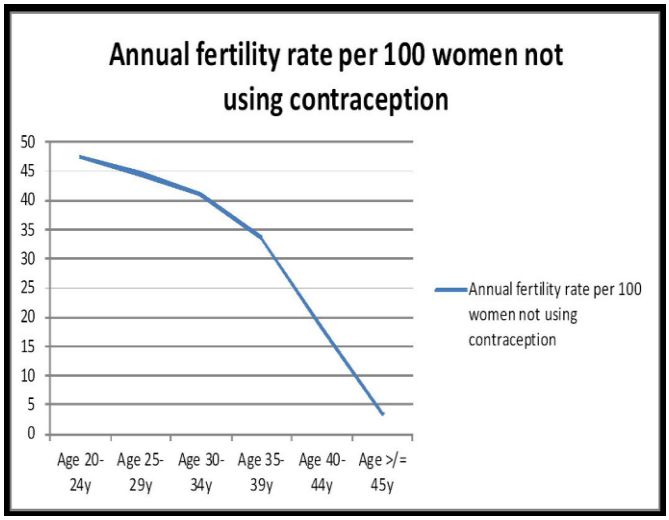
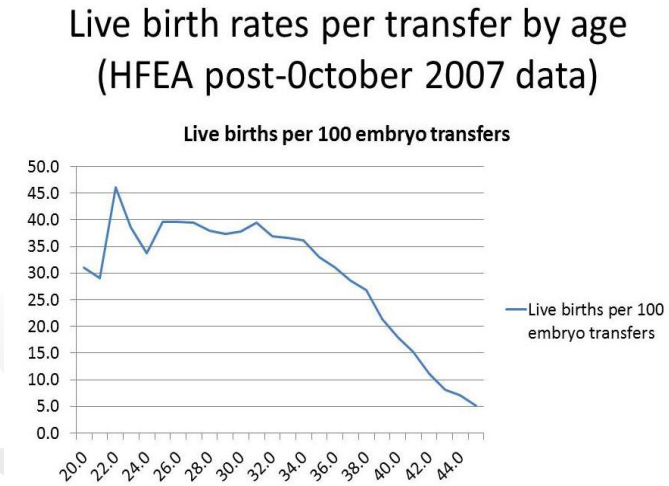


Figure 2 IVF success in terms of live births per 100 embryo transfers

The vertical axis shows embryo transfers; the horizontal axis shows age of woman (based on all 52,996 embryo transfers using the woman's own eggs undertaken in the UK between 1 October 2007 and 30 June 2009) [HFEA, personal communication] (note: small numbers of women aged under 24 years in the HFEA database).



UK NEQAS
Reproductive Science

Embryo Morphology Scheme

Cleavage stage embryo grading system

Blastomere Number		
Blastomere Size	4 =	Regular, even division
	3 =	<20% difference (blastomere diameter)
	2 =	20-50% difference
	1 =	>50% difference *Hardarson et al 2001*
Fragmentation	4 =	10% fragmentation by volume
	3 =	10-20%
	2 =	20-50%
	1 =	>50% *van Royen et al 2003*

Blastocyst grading system

Expansion Status	6 =	Hatched blastocyst; the blastocyst has evacuated the ZP.
	5 =	Hatching blastocyst; trophectoderm has started to herniate through the ZP.
	4 =	Expanded blastocyst: blastocoele volume now larger than that of the early embryo, ZP very thin.
	3 =	Full blastocyst; blastocoele completely fills the embryo.
	2 =	Blastocyst; blastocoele more than half the volume of the embryo, some expansion in overall size, ZP beginning to thin.
	1 =	Early blastocyst; blastocoele less than half the volume of the embryo, little or no expansion in overall size, *zona pellucida* (ZP) still thick.
ICM Grading	5 =	ICM prominent, easily discernible and consisting of many cells, cells compacted and tightly adhered together.
	4 =	Cells less compacted so larger in size, cells loosely adhered together; some individual cells may be visible.
	3 =	Very few cells visible; either compacted or loose, may be difficult to completely distinguish from trophectoderm.
	2 =	Cells of the ICM appear degenerate or necrotic.
	1 =	No ICM cells discernible in any focal plane.
Trophectoderm	3 =	Many small identical cells forming a continuous trophectoderm layer.
	2 =	Fewer larger cells; may not form a completely continuous layer.
	1 =	Sparse cells; may be very large, very flat or appear degenerate.

Concerns and Queries

If you have any concerns / queries about any of the services offered by the Trust, in the first instance, please speak to the person providing your care.

For Diana, Princess of Wales Hospital

Alternatively you can contact the Patient Advice and Liaison Service (PALS) on (01472) 875403 or at the PALS office which is situated near the main entrance.

For Scunthorpe General Hospital

Alternatively you can contact the Patient Advice and Liaison Service (PALS) on (01724) 290132 or at the PALS office which situated on C Floor.

Alternatively you can email: nlg-tr.PALS@nhs.net

Confidentiality

Information on NHS patients is collected in a variety of ways and for a variety of reasons (e.g. providing care and treatment, managing and planning the NHS, training and educating staff, research etc.).

Everyone working for the NHS has a legal duty to keep information about you confidential. Information will only ever be shared with people who have a genuine need for it (e.g. your GP or other professionals from whom you have been receiving care) or if the law requires it, for example, to notify a birth.

Please be assured however that anyone who receives information from us is also under a legal duty to keep it confidential.

Zero Tolerance - Violent, Threatening and Abusive Behaviour

The Trust and its staff are committed to providing high quality care to patients within the department. However, we wish to advise all patients / visitors that the following inappropriate behaviour will not be tolerated:

- Swearing
- Threatening / abusive behaviour
- Verbal / physical abuse

The Trust reserves the right to withdraw from treating patients whom are threatening / abusive / violent and ensuring the removal of those persons from the premises.

All acts of criminal violence and aggression will be notified to the Police immediately.

Risk Management Strategy

The Trust welcomes comments and suggestions from patients and visitors that could help to reduce risk.

Perhaps you have experienced something whilst in hospital, whilst attending as an outpatient or as a visitor and you felt at risk.

Please tell a member of staff on the ward or in the department you are attending / visiting.

Moving & Handling

The Trust operates a Minimal Lifting Policy, which in essence means patients are only ever lifted by nursing staff in an emergency situation.

Patients are always encouraged to help themselves as much as possible when mobilising, and if unable to do so, equipment may be used to assist in their safe transfer.

If you have any questions regarding moving and handling of patients within the Trust, please speak to a member of staff in the ward or department you are visiting.

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