NICE National Institute for Health and Care Excellence

NICE guideline

Fertility problems: assessment and treatment

NICE guideline
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Your responsibility

The recommendations in this guideline represent the view of NICE, arrived at after careful consideration of the evidence available. When exercising their judgement, professionals and practitioners are expected to take this guideline fully into account, alongside the individual needs, preferences and values of their patients or the people using their service. It is not mandatory to apply the recommendations, and the guideline does not override the responsibility to make decisions appropriate to the circumstances of the individual, in consultation with them and their families and carers or guardian.

All problems (adverse events) related to a medicine or medical device used for treatment or in a procedure should be reported to the Medicines and Healthcare products Regulatory Agency using the Yellow Card Scheme.

Local commissioners and providers of healthcare have a responsibility to enable the guideline to be applied when individual professionals and people using services wish to use it. They should do so in the context of local and national priorities for funding and developing services, and in light of their duties to have due regard to the need to eliminate unlawful discrimination, to advance equality of opportunity and to reduce health inequalities. Nothing in this guideline should be interpreted in a way that would be inconsistent with complying with those duties.

Commissioners and providers have a responsibility to promote an environmentally sustainable health and care system and should assess and reduce the environmental impact of implementing NICE recommendations wherever possible.

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Contents

Overview 8
Who is it for? 8
Principles of care 9
1.1 Providing information 9
1.2 Psychological effects of fertility problems 10
1.3 Generalist and specialist care 11
Initial advice to people concerned about delays in conception 12
1.4 Chance of conception 12
1.5 Frequency and timing of sexual intercourse or artificial insemination 15
Advice about factors that can affect fertility 16
1.6 Alcohol consumption 16
1.7 Smoking 16
1.8 Caffeinated beverages 17
1.9 Obesity 17
1.10 Low body weight 18
1.11 Tight underwear 18
1.12 Occupation 18
1.13 Prescribed, over-the-counter and recreational drug use 18
1.14 Complementary therapy 19
1.15 Folic acid supplementation 19
Defining infertility and initial assessment 20
1.16 How infertility is defined and assessed 20
Investigation of fertility problems and management strategies 22
1.17 Testing for male factor fertility problems 22
1.18 Testing for female factor fertility problems 24
1.19 Viral status and viral transmission 28
1.20 Susceptibility to rubella 30

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1.21 Cervical cancer screening 30
1.22 Screening for Chlamydia trachomatis 30
1.23 Coeliac disease testing 31
Management of male factor fertility problems 32
1.24 Medical management 32
1.25 Azoospermia 33
1.26 Y chromosome microdeletions 34
1.27 Reduced sperm DNA integrity 34
1.28 Varicocele 35
1.29 Ejaculatory failure 35
Management of female factor fertility problems 37
1.30 Hypogonadotropic hypogonadism 37
1.31 Hypothalamic-pituitary-ovarian dysfunction (predominantly PCOS) 37
1.32 Ovulatory disorders due to hyperprolactinaemia 38
1.33 Monitoring ovulation induction during gonadotrophin therapy 38
1.34 Tubal surgery 38
1.35 Uterine surgery 40
1.36 Endometriosis 40
Unstimulated intrauterine insemination (IUI) 42
1.37 Unstimulated intrauterine insemination 42
Unexplained fertility problems in people trying to conceive through unprotected vaginal sexual intercourse 43
1.38 Unexplained fertility problems 43
Access criteria for in vitro fertilisation (IVF) 44
1.39 Access criteria for IVF 44
Procedures used during in vitro fertilisation (IVF) 46
1.40 Pre-treatment 46
1.41 Endometrial receptivity testing 46

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1.42 Immunological treatments 47
1.43 Pituitary suppression and controlled ovarian stimulation 47
1.44 Monitoring during ovarian stimulation 47
1.45 Triggering ovulation and luteal phase support 48
1.46 Preventing ovulation hyperstimulation syndrome (OHSS) 48
1.47 Oocyte retrieval 48
1.48 Embryo selection strategies 48
1.49 Embryo transfer strategies 49
Intracytoplasmic sperm injection (ICSI) 51
1.50 Intracytoplasmic sperm injection 51
Donor insemination 52
1.51 Medical indications for donor insemination 52
Oocyte donation 53
1.52 Medical indications for oocyte donation 53
Fertility preservation for medical indications 54
1.53 Fertility preservation 54
Long-term safety of assisted reproductive technologies 56
1.54 Long-term health outcomes of ovulation induction and ovarian stimulation 56
1.55 Long-term health outcomes and safety of in vitro fertilisation (IVF) 56
Terms used in this guideline 58
Expectant management 58
Full cycle 58
Spontaneous conception 58
Suspected or known clinical cause of infertility 58
Natural cycle IVF 59
Recommendations for research 60
Key recommendations for research 60
Other recommendations for research 62

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Rationale and impact 64
Advice about conception using donor sperm 64
Miscarriage or ectopic pregnancy when trying to conceive 65
Testing for male factor fertility problems 65
Ovarian reserve testing 67
Subclinical hypothyroidism 68
Coeliac disease testing 69
Medical management of male factor fertility problems 69
Azoospermia 71
Y chromosome microdeletions 72
Reduced sperm DNA integrity 72
Varicocele 73
Management of ejaculatory failure 74
Hypogonadotropic hypogonadism 74
Ovulatory disorders due to hyperprolactinaemia 75
Tubal surgery for mild tubal disease 76
Tubal catheterisation 76
Surgery for hydrosalpinges before IVF 77
Unexplained fertility problems in people trying to conceive through unprotected vaginal sexual intercourse 78
Endometriosis 79
Access criteria for IVF 81
Pre-treatment 83
Endometrial receptivity testing 84
Immunological treatments 84
Embryo selection strategies 85
Intracytoplasmic sperm injection 87
Fertility preservation for medical indications 88
Finding more information and committee details 90

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Update information 91

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This guideline replaces CG156.

This guideline is the basis of QS55 and QS73.

Overview

This guideline covers diagnosing and treating health-related fertility problems. It aims to reduce variation in practice and improve how fertility problems are investigated and managed.

Who is it for?

The recommendations apply to people who:

- have health-related fertility problems, or
- may need interventions to preserve fertility because they have a high risk of fertility problems because of clinical conditions, or medical or surgical interventions.

People with health-related fertility problems are those who:

- have a known clinical cause of infertility, or
- do not achieve a pregnancy:
  - after 12 months of regular unprotected sexual intercourse, or
  - after 6 cycles of artificial insemination.

The guideline applies to all people seeking assessment and treatment for health-related fertility problems who meet these criteria, regardless of their sexual orientation, partnership status or gender identity.

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Principles of care

People have the right to be involved in discussions and make informed decisions about their care, as described in NICE's information on making decisions about your care.

Making decisions using NICE guidelines explains how we use words to show the strength (or certainty) of our recommendations, and has information about prescribing medicines (including off-label use), professional guidelines, standards and laws (including on consent and mental capacity), and safeguarding.

Healthcare professionals should follow our general guidelines for people delivering care:

- patient experience in adult NHS services
- shared decision making
- medicines adherence
- medicines optimisation
- multimorbidity.

1.1 Providing information

1.1.1 See couples who experience problems in conceiving together because both partners are affected by decisions surrounding investigation and treatment. **[2004]**

1.1.2 Ensure that people have the opportunity to make informed decisions about their care and treatment via access to evidence-based information. Recognise these choices as an integral part of the decision-making process. Supplement verbal information with written or online information, for example, information from the

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Human Fertilisation and Embryology Authority (HFEA). **[2004, amended 2026]**

1.1.3 Provide information about care and treatment options in a format that is accessible to people who have additional needs, such as people with physical, cognitive or sensory disabilities, and people who do not speak or read English. **[2004]**

1.1.4 Advise people who are thinking about using donor sperm to conceive to have treatment in a licensed fertility clinic to ensure clinical safety and legal parenthood. **[2026]**

For a short explanation of why the committee made the 2026 recommendation and how it might affect practice, see the rationale and impact section on advice about conception using donor sperm.

1.2 Psychological effects of fertility problems

1.2.1 When couples have fertility problems, inform both partners that stress in either or both partners can affect the couple's relationship and is likely to reduce libido and frequency of intercourse, which can contribute to the fertility problems. **[2004, amended 2013]**

1.2.2 Inform people who experience fertility problems that they may find it helpful to contact a relevant organisation for support. **[2004, amended 2026]**

1.2.3 Offer counselling to people who experience fertility problems because fertility problems themselves, and the investigation and treatment of fertility problems, can cause psychological stress. **[2004]**

1.2.4 Offer counselling before, during and after investigation and treatment, irrespective of the outcome of these procedures. **[2004]**

1.2.5 Counselling should be provided by someone who is not directly involved in the management of the individual's or couple's fertility problems. **[2004, amended 2013]**

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1.3 Generalist and specialist care

1.3.1 People who experience fertility problems should be treated by a specialist team because this is likely to improve the effectiveness and efficiency of treatment, and is known to improve people's satisfaction with treatment. **[2004, amended 2013]**

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Initial advice to people concerned about delays in conception

1.4 Chance of conception

1.4.1 Inform people who are concerned about their fertility that over 80% of heterosexual 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 vaginal 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%). See table 1 for the cumulative probability of conceiving a clinical pregnancy by the number of menstrual cycles – sexual intercourse. **[2004, amended 2013]**

1.4.2 Inform people who are using artificial insemination to conceive and who are concerned about their fertility that:

- 47% to 57% (depending on age) 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 IUI, about half will do so with a further 6 cycles (cumulative pregnancy rate of 72% to 81%, depending on age).

See table 2 for the cumulative probability of conceiving a clinical pregnancy by the number of cycles of insemination – intracervical insemination (ICI) and IUI. **[2013, amended 2026]**

1.4.3 Inform people who are concerned about their fertility that female fertility and (to a lesser extent) male fertility declines with age. See figure 1. **[2013, amended 2026]**

Figure 1 The effect of maternal age on pregnancy rate

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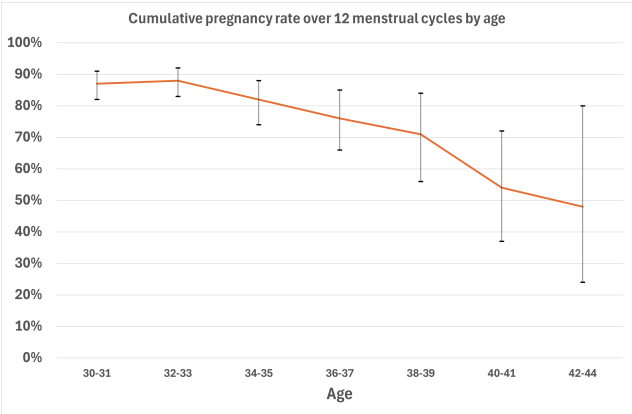

Figure based on data reported in Steiner and Jukic (2016), a prospective cohort study including women aged 30 to 44 years with no known fertility problems showing cumulative pregnancy rate (with 95% confidence interval) over 12 menstrual cycles of attempting to conceive spontaneously.

1.4.4 Discuss the chances of conception with people concerned about their fertility who are:

- having unprotected vaginal sexual intercourse (see table 1), or
- using artificial insemination (see table 2). **[2013, amended 2026]**

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

Maternal age	Pregnant after 1 year or 12 cycles	Pregnant after 2 years or 24 cycles
19 to 26 years	92%	98%
27 to 29 years	87%	95%
30 to 34 years	86%	94%
35 to 39 years	82%	90%

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.

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Table 2 Cumulative probability of conceiving a clinical pregnancy by the number of cycles of insemination – intracervical insemination (ICI) and intrauterine insemination (IUI)

Maternal age	Intracervical insemination (ICI) using thawed semen – 6 cycles (Schwartz 1982)	ICI using thawed semen – 12 cycles (Schwartz 1982)
Under 30 years	50%	70%
30 to 34 years	43%	62%
Over 34 years	33%	54%
Maternal age	**ICI using fresh semen – 6 cycles (Zaadstra 1991)**	**ICI using fresh semen – 12 cycles (Zaadstra 1991)**
Under 31 years	58%	76%
31 to 35 years	50%	71%
Over 35 years	39%	55%
Maternal age	**Intrauterine insemination (IUI) using donor sperm – 6 cycles (theoretical cumulative pregnancy rate using HFEA data from 1991 to 2023)***	**IUI using donor sperm – 12 cycles (theoretical cumulative pregnancy rate using HFEA data from 1991 to 2023)***
18 to 34 years	57%	81%
35 to 37 years	54%	78%
38 to 39 years	47%	72%
40 to 42 years	31%	52%
43 to 44 years	17%	31%
Over 44 years	6%	11%

* Data for IUI is based on donor insemination and was obtained from the Human Fertilisation and Embryology Authority (HFEA) dashboard (HFEA 2023). This includes donor insemination treatments between 1991 and 2023 (data for 2020 to 2023 is preliminary), and includes both unstimulated and stimulated IUI. Pregnancy rates for IUI in health-related fertility problems may be lower than the rates for donor insemination. The percentages describe life table analysis estimates of cumulative clinical pregnancy probability over 6 and 12 cycles of donor insemination, derived from per-cycle probabilities.

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1.5 Frequency and timing of sexual intercourse or artificial insemination

1.5.1 Inform people who are concerned about their fertility that vaginal sexual intercourse every 2 to 3 days optimises the chance of pregnancy. **[2004, amended 2013]**

1.5.2 People who are using artificial insemination to conceive should have their insemination timed around ovulation. **[2013]**

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Advice about factors that can affect fertility

1.6 Alcohol consumption

1.6.1 Inform women, and trans men and non-binary people with female reproductive organs who are trying to become pregnant 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 fetus. Advise them that, according to the Chief Medical Officer's guidelines on alcohol, the safest approach is to avoid alcohol altogether. **[2004, amended 2026]**

1.6.2 Inform men, and trans women and non-binary people with male reproductive organs, that:

- excessive alcohol intake is detrimental to semen quality
- drinking within the limits of the weekly drinking guidance in the UK Chief Medical Officer's advice on low risk drinking (14 units per week), if spread across several days, for example, up to 2 units per day, is unlikely to affect their semen quality. **[2004, amended 2026]**

1.7 Smoking

1.7.1 Inform women, and trans men and non-binary people with female reproductive organs who smoke, that this is likely to reduce their fertility. **[2004]**

1.7.2 Inform women, and trans men and non-binary people with female reproductive organs that passive smoking is likely to affect their chance of conceiving. **[2004]**

1.7.3 Inform men, and trans women and non-binary people with male reproductive organs who smoke that there is an association between smoking and reduced semen quality (although the impact of this on male fertility is uncertain), and that

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stopping smoking will improve their general health. **[2004]**

1.7.4 Encourage and support people to stop smoking as advised in NICE's guideline on tobacco: preventing uptake, promoting quitting and treating dependence. **[2026]**

1.8 Caffeinated beverages

1.8.1 Inform people who are concerned about their fertility that there is no consistent evidence of an association between consumption of caffeinated beverages (tea, coffee, energy drinks and colas) and fertility problems. **[2004, amended 2026]**

1.9 Obesity

1.9.1 Inform women, and trans men and non-binary people with female reproductive organs who have a body mass index (BMI) of 30 kg/m^2 or over:

- that they are likely to take longer to conceive, and
- that if they are not ovulating, losing weight is likely to increase their chance of conception. **[2004, amended 2013]**

1.9.2 Inform women, and trans men and non-binary people with female reproductive organs that participating in a group programme involving exercise and dietary advice leads to more pregnancies than weight loss advice alone. **[2004, amended 2013]**

1.9.3 Inform men, and trans women and non-binary people with male reproductive organs who have a BMI of 30 kg/m^2 or over that they have an increased risk of reduced fertility. **[2004, amended 2013]**

1.9.4 For advice on preventing and managing overweight, obesity and central adiposity, see NICE's guideline on overweight and obesity management. **[2026]**

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1.10 Low body weight

1.10.1 Advise women, and trans men and non-binary people with female reproductive organs who have a BMI of less than 18.5 kg/m^2 and who have irregular menstruation or are not menstruating that increasing body weight is likely to improve their chance of conception. **[2004, amended 2026]**

1.11 Tight underwear

1.11.1 Inform men, and trans women and non-binary people with male reproductive organs that there is an association between elevated scrotal temperature and reduced semen quality, but that it is uncertain whether wearing loose-fitting underwear improves fertility. **[2004]**

1.12 Occupation

1.12.1 Some occupations involve exposure to hazards that can reduce fertility. Ask about the occupation of people who are concerned about their fertility, and, if necessary, direct them to appropriate advice, for example, their workplace occupational health team. **[2004, amended 2026]**

1.13 Prescribed, over-the-counter and recreational drug use

1.13.1 Ask people who are concerned about their fertility whether they are taking any prescription drugs (for example, GLP-1 agonists, testosterone-replacement therapy or finasteride), over-the-counter products (for example, non-steroidal anti-inflammatory drugs or vaginal lubricants), or recreational drugs (for example, anabolic steroids or cannabis), and provide appropriate advice on the potential impact on fertility or pregnancy. **[2004, amended 2026]**

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1.14 Complementary therapy

1.14.1 Inform people who are concerned about their fertility that the effectiveness of complementary therapies for fertility problems has not been properly evaluated, and that further research is needed before such interventions can be recommended. **[2004]**

1.15 Folic acid supplementation

1.15.1 For advice on folic acid supplementation, see the section on vitamin supplementation in NICE's guideline on maternal and child nutrition. **[2004, amended 2026]**

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Defining infertility and initial assessment

1.16 How infertility is defined and assessed

1.16.1 Offer an initial assessment for people who are concerned about delays in conception. Ask about lifestyle and sexual history to identify people who are less likely to conceive. **[2004]**

1.16.2 Offer an initial consultation to discuss the options for attempting conception to people who are unable to, or would find it very difficult to, have vaginal intercourse. **[2013]**

1.16.3 The environment in which investigation of fertility problems takes place should enable people to discuss sensitive issues such as sexual abuse. **[2004]**

1.16.4 Define infertility in practice as the period of time people have been trying to conceive without success after which formal investigation is justified and possible treatment implemented. **[2013]**

1.16.5 If a woman, or a trans man or non-binary person with female reproductive organs of reproductive age has not conceived after 1 year of unprotected vaginal sexual intercourse, in the absence of any suspected or known clinical cause of infertility, offer both partners further clinical assessment and investigation. **[2013, amended 2026]**

1.16.6 If a woman, or trans man or non-binary person with female reproductive organs is using artificial insemination to conceive, offer further clinical assessment and investigation if they have not conceived after 6 cycles of insemination, in the absence of any suspected or known clinical cause of infertility. When this is using partner sperm, the referral for clinical assessment and investigation should include their partner. **[2013, amended 2026]**

1.16.7 If a woman, or a trans man or non-binary person with female reproductive organs experiences a miscarriage or ectopic pregnancy during any of the following timeframes:

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- the 1 year of unprotected vaginal sexual intercourse before people become eligible to have investigations for infertility
- the period of expectant management for people with unexplained infertility
- the 12 cycles of artificial insemination

continue to follow the timeframe and do not restart it after the miscarriage or ectopic pregnancy. **[2026]**

For a short explanation of why the committee made the 2026 recommendation and how it might affect practice, see the rationale and impact section on miscarriage or ectopic pregnancy when trying to conceive.

1.16.8 Offer referral at presentation for a specialist consultation to discuss the options for attempting conception, further assessment and appropriate treatment if:

- the woman, trans man or non-binary person with female reproductive organs trying to become pregnant is aged 36 years or over, or
- either partner has a suspected or known clinical cause of infertility or a history of predisposing factors for infertility. **[2013, amended 2026]**

1.16.9 Offer to expedite fertility specialist referral where treatment is planned that may result in infertility (such as treatment for cancer). See the section on fertility preservation for medical indications. **[2004, amended 2026]**

1.16.10 Ensure that appropriate advice is provided to people who have chronic viral infections such as hepatitis B, hepatitis C or HIV, and have concerns about their fertility. See the section on viral transmission. **[2004, amended 2026]**

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Investigation of fertility problems and management strategies

1.17 Testing for male factor fertility problems

Semen analysis

1.17.1 Compare the results of semen analysis conducted as part of an initial assessment with the following World Health Organization (WHO) reference values (see the WHO laboratory manual for the examination and processing of human semen):

- semen volume: 1.4 ml or more (95% confidence interval [CI] 1.3 to 1.5)
- pH: 7.2 or more
- sperm concentration: 16 million spermatozoa per ml or more (95% CI 15 to 18)
- total sperm number: 39 million spermatozoa per ejaculate or more (95% CI 35 to 40)
- total motility (percentage of progressive motility and non-progressive motility): 42% or more motile (95% CI 40 to 43)
- progressive motility: 30% or more (95% CI 29 to 31)
- vitality: 54% or more live spermatozoa (95% CI 50 to 56)
- sperm morphology (percentage of normal forms): 4% or more (95% CI 3.9 to 4.0). **[2004, amended 2026]**

  Note that the reference ranges are only valid for the semen analysis tests outlined by the World Health Organization.

1.17.2 Do not offer routine testing for antisperm antibodies. **[2004]**

1.17.3 If the result of the first semen analysis is abnormal, offer a repeat confirmatory

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test. **[2004]**

1.17.4 Undertake repeat confirmatory tests ideally 3 months after the initial analysis to allow time for the cycle of spermatozoa formation to be completed. However, if a gross spermatozoa deficiency (azoospermia or severe oligozoospermia) has been detected, undertake the repeat test as soon as possible. **[2004]**

1.17.5 For men, and trans women and non-binary people with male reproductive organs who have 2 or more abnormal semen analyses:

- offer a physical examination of the scrotum and testes, and
- consider measuring serum testosterone and gonadotrophin levels. **[2026]**

Sperm DNA integrity (fragmentation) testing

1.17.6 Do not carry out testing for sperm DNA integrity (fragmentation). **[2026]**

Y chromosome microdeletion testing

1.17.7 Test for Y chromosome microdeletion in men, and trans women and non-binary people with male reproductive organs who have idiopathic:

- azoospermia, or
- a sperm concentration of less than 1 million per ml. **[2026]**

Cystic fibrosis transmembrane conductance regulator

1.17.8 Test for cystic fibrosis transmembrane conductance regulator genetic mutations in men, and trans women and non-binary people with male reproductive organs who have idiopathic suspected obstructive azoospermia or a vasal abnormality, or both, on examination. **[2026]**

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Karyotype

1.17.9 Test for karyotype abnormalities in men, and trans women and non-binary people with male reproductive organs who have idiopathic azoospermia. **[2026]**

1.17.10 Consider testing for karyotype abnormalities in men, and trans women and non-binary people with male reproductive organs who have a persistent sperm concentration of less than 5 million per ml. **[2026]**

Genetic counselling

1.17.11 Offer appropriate genetic counselling for men, and trans women and non-binary people who have a specific genetic defect associated with male factor infertility. **[2026]**

For a short explanation of why the committee made the 2026 recommendations and how they might affect practice, see the rationale and impact section on testing for male factor fertility problems.

Full details of the evidence and the committee's discussion are in:

- evidence review S: sperm DNA fragmentation
- evidence review T: Y chromosome microdeletion.

1.18 Testing for female factor fertility problems

Post-coital testing of cervical mucus

1.18.1 Do not routinely use post-coital testing of cervical mucus in the investigation of fertility problems because it has no predictive value on pregnancy rate. **[2004]**

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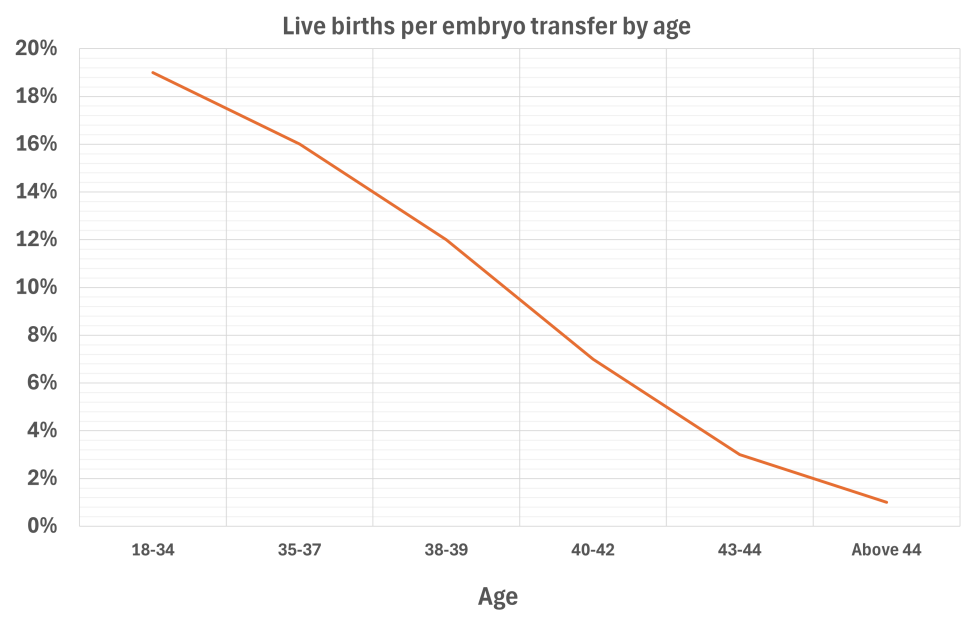
Ovarian reserve testing

1.18.2 Use maternal age as an initial predictor of the overall chance of becoming pregnant through spontaneous conception (see figure 1 on the effect of maternal age on pregnancy rate), or with in vitro fertilisation (IVF; see figure 2 on IVF success in terms of live births per embryo transfer by age). **[2013, amended 2026]**

Figure 2 IVF success in terms of live births per embryo transfer by age



(Human Fertilisation and Embryology Authority [HFEA] data from 1991 to 2023)

The vertical axis shows the percentage of live births per embryo transfer; the horizontal axis shows age at treatment. Data was obtained from the HFEA dashboard (HFEA 2023). This data includes fresh embryo transfer with IVF and ICSI cycles begun in 1991 and 2023 (data for 2019 to 2023 is preliminary). Cycles using previously stored eggs, donor eggs, donor sperms, surrogacy, and PGT-A/M/SR have been excluded. Cycles where pregnancy was achieved but no live birth outcome was documented were excluded. Live birth rate per embryo transferred was calculated as the number of live birth occurrences divided by the total number of embryos transferred in that year (HFEA 2023).

Abbreviations: ICSI, intracytoplasmic sperm injection; IVF, in vitro fertilisation; PGT-A/M/SR, pre-implantation genetic testing for aneuploidy, monogenic disorders and chromosomal structural rearrangements.

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1.18.3 Do not use anti-Müllerian hormone (AMH) measurement as a predictor of clinical pregnancy through spontaneous conception. **[2026]**

1.18.4 Use AMH measurement or antral follicle count (AFC) as predictors of ovarian response to inform clinical decision making and patient counselling about the likelihood of live birth following assisted conception. **[2026]**

1.18.5 Do not use follicle-stimulating hormone (FSH) measurement as a predictor of ovarian response or outcome of assisted conception. **[2026]**

For a short explanation of why the committee made the 2026 recommendations and how they might affect practice, see the rationale and impact section on ovarian reserve testing.

Full details of the evidence and the committee's discussion are in evidence review A: ovarian reserve testing.

Regularity of menstrual cycles

1.18.6 Ask women, and trans men and non-binary people with female reproductive organs who are concerned about their fertility about the frequency and regularity of their menstrual cycles, and reassure them that if they have regular monthly menstrual cycles, they are likely to be ovulating. **[2004]**

1.18.7 Offer women, and trans men and non-binary people with female reproductive organs who are undergoing investigations for infertility 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. **[2004, amended 2013]**

1.18.8 Offer women, and trans men and non-binary people with female reproductive organs with prolonged irregular menstrual cycles a blood test to measure serum progesterone. Depending on 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. **[2004]**

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1.18.9 Do not use basal body temperature charts to confirm ovulation because they do not reliably predict ovulation. **[2004]**

1.18.10 Offer women, and trans men and non-binary people with female reproductive organs with irregular menstrual cycles a blood test to measure serum gonadotrophins (FSH and luteinising hormone). **[2004]**

Prolactin measurement

1.18.11 Do not offer women, and trans men and non-binary people with female reproductive organs who are concerned about their fertility a blood test to measure prolactin. Only offer this test to those with an ovulatory disorder, galactorrhoea or a pituitary tumour. **[2004]**

Thyroid function tests

1.18.12 Only offer estimation of thyroid function to women, and trans men and non-binary people with female reproductive organs with possible fertility problems if they have symptoms of thyroid disease. **[2004]**

Subclinical hypothyroidism

The evidence was reviewed, and the committee made a recommendation for research.

For a short explanation of why the committee only made a recommendation for research, see the rationale section on subclinical hypothyroidism.

Full details of the evidence and the committee's discussion are in evidence review B: subclinical hypothyroidism.

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Investigation of suspected tubal and uterine abnormalities

1.18.13 Offer women, and trans men and non-binary people with female reproductive organs who are not known to have comorbidities (such as pelvic inflammatory disease, previous ectopic pregnancy or endometriosis) 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. **[2004]**

1.18.14 Where appropriate expertise is available, consider screening for tubal occlusion using hysterosalpingo-contrast-ultrasonography because it is an effective alternative to HSG for women, and trans men and non-binary people with female reproductive organs who are not known to have comorbidities. **[2004]**

1.18.15 Offer laparoscopy and dye to women, and trans men and non-binary people with female reproductive organs who are thought to have comorbidities so that tubal and other pelvic pathology can be assessed at the same time. **[2004]**

1.18.16 Do not offer hysteroscopy unless a uterine or endometrial abnormality is clinically suspected. **[2004, amended 2026]**

1.19 Viral status and viral transmission

Testing for viral status

1.19.1 Offer people undergoing IVF treatment testing for HIV, hepatitis B and hepatitis C (for donor insemination, see recommendation 1.51.2 in the section on donor insemination). **[2004, amended 2013]**

1.19.2 Offer specialist advice and counselling and appropriate clinical management for people found to test positive for 1 or more of HIV, hepatitis B or hepatitis C. **[2004, amended 2013]**

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Viral transmission

1.19.3 For couples where the partner with male reproductive organs is HIV positive, any decision about fertility management should be the result of discussions between the couple, a fertility specialist and an HIV specialist. **[2013]**

1.19.4 Advise couples where the partner with male reproductive organs is HIV positive that the risk of HIV transmission is negligible through unprotected vaginal sexual intercourse when all of the following criteria are met:

- they are compliant with highly active antiretroviral therapy (HAART)
- they have had a plasma viral load of less than 50 copies/ml for more than 6 months
- there are no other infections present
- unprotected intercourse is limited to the time of ovulation. **[2013]**

1.19.5 For couples where the partner with male reproductive organs is HIV positive and either is not compliant with HAART or the plasma viral load is 50 copies/ml or greater, offer sperm washing. **[2013]**

1.19.6 Inform couples that sperm washing reduces, but does not eliminate, the risk of HIV transmission. **[2013]**

1.19.7 For partners of people with hepatitis B, offer vaccination before starting fertility treatment. **[2013]**

1.19.8 Do not offer sperm washing as part of fertility treatment for men, or trans women or non-binary people with male reproductive organs who have hepatitis B. **[2013]**

1.19.9 For couples where the partner with male reproductive organs has hepatitis C, any decision about fertility management should be the result of discussions between the couple, a fertility specialist and a hepatitis specialist. **[2013]**

1.19.10 Advise couples who want to conceive and where the partner with male reproductive organs has hepatitis C that the risk of transmission through unprotected sexual intercourse is thought to be low. **[2013]**

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1.19.11 Men, and trans women and non-binary people with male reproductive organs who have hepatitis C should discuss treatment options to eradicate the hepatitis C with their appropriate specialist before conception is considered. **[2013]**

1.20 Susceptibility to rubella

1.20.1 Offer women, and trans men and non-binary people with female reproductive organs who are concerned about their fertility and have not been, or are uncertain if they have been, vaccinated for rubella, testing for their rubella status so that those who are susceptible to rubella can be offered vaccination. **[2013, amended 2026]**

1.20.2 Offer rubella vaccination to those who are susceptible and advise them not to become pregnant for at least 1 month following vaccination. **[2013, amended 2026]**

1.21 Cervical cancer screening

1.21.1 To avoid delays in fertility treatment, ask women, and trans men and non-binary people with female reproductive organs who are concerned about their fertility about the timing and result of the most recent cervical smear test. Offer cervical screening in accordance with the national cervical screening programme guidance. **[2004]**

1.22 Screening for Chlamydia trachomatis

1.22.1 Before undergoing uterine instrumentation, offer women, and trans men and non-binary people with female reproductive organs screening for Chlamydia trachomatis using an appropriately sensitive technique. **[2004]**

1.22.2 If the result of a test for Chlamydia trachomatis is positive, refer women, and trans men and non-binary people with female reproductive organs and their

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sexual partners for appropriate management with treatment and contact tracing. **[2004]**

1.22.3 Consider prophylactic antibiotics before uterine instrumentation if screening has not been carried out. **[2004]**

1.23 Coeliac disease testing

1.23.1 Consider serological testing for coeliac disease in people with unexplained subfertility in line with the section on recognition of coeliac disease in NICE's guideline on coeliac disease. **[2026]**

For a short explanation of why the committee made this recommendation and how it might affect practice, see the rationale and impact section on coeliac disease testing.

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Management of male factor fertility problems

1.24 Medical management

1.24.1 Offer gonadotrophin therapy to treat men, and trans women and non-binary people with male reproductive organs who have hypogonadotropic hypogonadism. **[2026]**

1.24.2 Only consider gonadotrophin or anti-oestrogen therapy for men, and trans women and non-binary people with male reproductive organs who have impaired semen parameters and no hypogonadotropic hypogonadism as part of a clinical trial. **[2026]**

1.24.3 Do not offer androgens to treat semen abnormalities. **[2026]**

1.24.4 Explain that the significance of antisperm antibodies is unclear and the effectiveness of systemic corticosteroid treatment for antisperm antibodies is uncertain. **[2004]**

1.24.5 Do not offer antibiotic treatment to treat leukocytes in the semen unless there is an identified infection because there is no evidence that this improves pregnancy rates. **[2004]**

1.24.6 Do not offer supplements, antioxidants or medical treatments to improve sperm DNA integrity (fragmentation). **[2026]**

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For a short explanation of why the committee made the 2026 recommendations and how they might affect practice, see the rationale and impact section on medical management of male factor fertility problems.

Full details of the evidence and the committee's discussion are in:

- evidence review U: hormone treatment for male factor fertility problems
- evidence review S: sperm DNA fragmentation.

1.25 Azoospermia

1.25.1 Offer men, and trans women and non-binary people with male reproductive organs surgical correction or surgical sperm retrieval to treat obstructive azoospermia. When deciding which treatment to offer, take into account the following factors:

- female fertility factors (for example, age, ovarian reserve, tubal patency and ovulatory status)
- the obstructive interval if known
- the risks and benefits of the surgical intervention
- the person's preference. **[2026]**

1.25.2 Offer surgical sperm retrieval to manage non-obstructive azoospermia. **[2026]**

1.25.3 When carrying out surgical sperm retrieval for non-obstructive azoospermia (see recommendation 1.25.2), consider microscopic testicular sperm extraction (micro-TESE). **[2026]**

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For a short explanation of why the committee made these recommendations and how they might affect practice, see the rationale and impact section on azoospermia.

Full details of the evidence and the committee's discussion are in:

- evidence review W: surgical interventions for obstructive azoospermia
- evidence review Y: surgical sperm retrieval techniques.

1.26 Y chromosome microdeletions

1.26.1 Do not offer surgical sperm retrieval in the presence of Y chromosome AZF a or b microdeletion. **[2026]**

For a short explanation of why the committee made this recommendation and how it might affect practice, see the rationale and impact section on Y chromosome microdeletions.

Full details of the evidence and the committee's discussion are in evidence review T: Y chromosome microdeletion.

1.27 Reduced sperm DNA integrity

1.27.1 Do not offer surgical sperm retrieval as a way to improve outcomes for men, and trans women and non-binary people with male reproductive organs who have non-azoospermia and reduced sperm DNA integrity (elevated fragmentation levels). **[2026]**

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For a short explanation of why the committee made this recommendation and how it might affect practice, see the rationale and impact section on reduced sperm DNA integrity.

Full details of the evidence and the committee's discussion are in evidence review S: sperm DNA fragmentation.

1.28 Varicocele

1.28.1 Consider radiological or surgical treatment (taking into account female fertility factors) for men, and trans women and non-binary people with male reproductive organs who have varicocele detected on clinical examination, and who:

- are trying to conceive spontaneously, and
- have reduced semen parameters. **[2026]**

For a short explanation of why the committee made this recommendation and how it might affect practice, see the rationale and impact section on varicocele.

Full details of the evidence and the committee's discussion are in evidence review X: treatments for varicocele.

1.29 Ejaculatory failure

1.29.1 For men, and trans women and non-binary people with male reproductive organs who have ejaculatory failure, identify the cause to determine the most appropriate and least invasive method of managing the issue. **[2026]**

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For a short explanation of why the committee made this recommendation and how it might affect practice, see the rationale and impact section on management of ejaculatory failure.

Full details of the evidence and the committee's discussion are in evidence review V: treatments for ejaculatory failure.

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Management of female factor fertility problems

1.30 Hypogonadotropic hypogonadism

1.30.1 Advise women, and trans men and non-binary people with female reproductive organs who have hypogonadotropic hypogonadism and anovulatory infertility that they may improve their chance of regular ovulation, conception and an uncomplicated pregnancy by:

- increasing their body weight to reach a healthy weight if they have a body mass index (BMI) of less than 18.5 kg/m^2 and/or
- moderating their exercise levels if they undertake high levels of exercise.

Also see NHS advice on healthy ways to gain weight. **[2026]**

1.30.2 Offer gonadotrophins with luteinising hormone activity or gonadotrophin releasing hormone to induce ovulation in women, and trans men and non-binary people with female reproductive organs who have hypogonadotropic hypogonadism. **[2026]**

For a short explanation of why the committee made these recommendations and how they might affect practice, see the rationale and impact section on hypogonadotropic hypogonadism.

Full details of the evidence and the committee's discussion are in evidence review E: ovulation induction strategies for hypogonadotropic hypogonadism.

1.31 Hypothalamic-pituitary-ovarian dysfunction (predominantly PCOS)

The recommendations in this section have been removed because NICE is developing a

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guideline on polycystic ovary syndrome (PCOS). For more information see the NICE website.

1.32 Ovulatory disorders due to hyperprolactinaemia

1.32.1 Offer cabergoline to treat ovulatory disorders due to hyperprolactinaemia. **[2026]**

For a short explanation of why the committee made this recommendation and how it might affect practice, see the rationale and impact section on ovulatory disorders due to hyperprolactinaemia.

Full details of the evidence and the committee's discussion are in evidence review F: cabergoline for hyperprolactinaemia.

1.33 Monitoring ovulation induction during gonadotrophin therapy

1.33.1 Inform women, and trans men and non-binary people with female reproductive organs who are offered ovulation induction with gonadotrophins about the risk of multiple pregnancy and ovarian hyperstimulation before starting treatment. **[2004]**

1.33.2 Use ovarian ultrasound monitoring to measure follicular size and number as an integral part of gonadotrophin therapy, to reduce the risk of multiple pregnancy and ovarian hyperstimulation. **[2004]**

1.34 Tubal surgery

Tubal surgery for mild tubal disease

1.34.1 Consider tubal surgery as a treatment option for mild tubal disease, in centres

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where appropriate expertise is available. **[2026]**

For a short explanation of why the committee made this recommendation and how it might affect practice, see the rationale and impact section on tubal surgery for mild tubal disease.

Full details of the evidence and the committee's discussion are in evidence review G: tubal surgery.

Tubal catheterisation

1.34.2 Consider fallopian tube catheterisation by hysteroscopic or radiological guidance to treat subfertility due to proximal tube obstruction, after discussing the risks and benefits of other options, including in vitro fertilisation (IVF). **[2026]**

For a short explanation of why the committee made this recommendation and how it might affect practice, see the rationale and impact section on tubal catheterisation.

Full details of the evidence and the committee's discussion are in evidence review I: tubal catheterisation.

Surgery for hydrosalpinges before IVF

1.34.3 Offer laparoscopic salpingectomy or tubal occlusion to treat hydrosalpinges before IVF. **[2026]**

1.34.4 Consider aspiration to treat hydrosalpinges, close to the time of oocyte retrieval, if there is a high risk of complications from laparoscopic surgery. **[2026]**

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For a short explanation of why the committee made these recommendations and how they might affect practice, see the rationale and impact section on surgery for hydrosalpinges before IVF.

Full details of the evidence and the committee's discussion are in evidence review H: surgery for hydrosalpinges before IVF.

1.35 Uterine surgery

1.35.1 Offer hysteroscopic adhesiolysis for women, and trans men and non-binary people with female reproductive organs with amenorrhoea who are found to have intrauterine adhesions, because this is likely to restore menstruation and improve the chance of pregnancy. **[2004]**

1.36 Endometriosis

The recommendations in this section should be read in conjunction with NICE's guideline on endometriosis.

1.36.1 Discuss the following options with women, and trans men, and non-binary people with female reproductive organs who have endometriosis:

- expectant management for up to 2 years (including the time already spent trying to conceive before assessment)
- surgical treatment of endometriosis, in line with the section on management if fertility is a priority in NICE's guideline on endometriosis. **[2026]**

1.36.2 If the woman, trans man or non-binary person with endometriosis has not conceived during 2 years of expectant management or after surgical treatment, or if expectant management or surgical treatment (or both) is not appropriate, discuss the fertility treatment options and:

- consider up to 4 cycles of intrauterine insemination (IUI) with ovarian stimulation using gonadotrophins before offering IVF treatment, if

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appropriate, or

- offer IVF treatment (see the section on access criteria for IVF).

Explain the potential risks and benefits of each option and take into account the person's individual preferences and circumstances during discussions. **[2026]**

1.36.3 When discussing fertility with women, and trans men, and non-binary people with female reproductive organs who have endometriosis, take into account:

- the length of time they have been trying to conceive
- the symptoms and severity of the endometriosis
- their age
- their ovarian reserve
- any male factor fertility issues. **[2026]**

For a short explanation of why the committee made the 2026 recommendations and how they might affect practice, see the rationale and impact section on endometriosis.

Full details of the evidence and the committee's discussion are in evidence review K: assisted reproduction techniques for people with unexplained fertility problems, mild endometriosis, and mild male factor fertility problems.

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Unstimulated intrauterine insemination (IUI)

1.37 Unstimulated intrauterine insemination

1.37.1 Offer 12 cycles of unstimulated IUI (providing there are no contraindications) before considering in vitro fertilisation (IVF) for:

- people who are unable to, or would find it very difficult to, have vaginal intercourse because of a clinically diagnosed physical disability or psychosexual problem
- couples where the partner with male reproductive organs has azoospermia and surgical sperm retrieval is not suitable or has been unsuccessful, and they wish to use donor sperm treatment (see the section on donor insemination). **[2013, amended 2026]**

1.37.2 For women, and trans men and non-binary people with female reproductive organs who are using donor insemination and have not conceived after 6 cycles (see recommendation 1.16.6 in the section on defining infertility and initial assessment), offer 6 cycles of unstimulated donor IUI (providing there are no contraindications and no suspected or known clinical causes of infertility) before considering IVF. **[2013, amended 2026]**

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Unexplained fertility problems in people trying to conceive through unprotected vaginal sexual intercourse

1.38 Unexplained fertility problems

1.38.1 Advise people with unexplained fertility problems who are having regular unprotected vaginal sexual intercourse to try to conceive for a total of 2 years before treatment. **[2013, amended 2026]**

1.38.2 Do not offer ovarian stimulation as a stand-alone treatment for unexplained fertility problems. **[2026]**

1.38.3 For people with unexplained fertility problems who have tried to conceive for 2 years through regular unprotected vaginal sexual intercourse, discuss the treatment options, including the benefits, risks and their individual preferences and:

- before in vitro fertilisation (IVF) treatment, consider up to 4 cycles of intrauterine insemination (IUI) with ovarian stimulation using gonadotrophins, or
- offer IVF treatment (see the section on access criteria for IVF). **[2026]**

For a short explanation of why the committee made the 2026 recommendations and how they might affect practice, see the rationale and impact section on unexplained fertility problems in people trying to conceive through unprotected vaginal sexual intercourse.

Full details of the evidence and the committee's discussion are in evidence review K: assisted reproduction techniques for people with unexplained fertility problems, mild endometriosis, and mild male factor fertility problems.

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Access criteria for in vitro fertilisation (IVF)

1.39 Access criteria for IVF

1.39.1 When considering IVF as a treatment option for fertility problems, discuss the risks and benefits of IVF in accordance with the current Human Fertilisation and Embryology Authority (HFEA) Code of Practice. **[2013]**

1.39.2 Take ovarian reserve into account when discussing the option of IVF treatment (see recommendation 1.18.4 in the section on ovarian reserve testing). **[2026]**

1.39.3 Offer IVF treatment to women, and trans men and non-binary people with female reproductive organs who have not yet reached their 42nd birthday, if:

- there is a diagnosed cause of infertility for which other treatments are not suitable or have not been successful, or
- they have unexplained fertility problems and have not conceived after 2 years of regular unprotected vaginal intercourse, with or without intrauterine insemination (IUI; see recommendation 1.38.3 in the section on unexplained fertility problems in people trying to conceive through unprotected vaginal sexual intercourse), or
- they have not conceived after 12 cycles of artificial insemination (where 6 or more cycles are by IUI). **[2026]**

1.39.4 Inform people that normally, a full cycle of IVF treatment, with or without intracytoplasmic sperm injection (ICSI), should comprise 1 episode of ovarian stimulation and the transfer of any resultant fresh and frozen embryo(s). **[2013]**

1.39.5 Healthcare providers should define a cancelled IVF cycle as one where an egg collection procedure is not undertaken. Take into account cancelled cycles due to low ovarian response when considering if further IVF treatment is suitable. **[2013]**

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1.39.6 If the woman, or trans man or non-binary person with female reproductive organs is under 40 years and meets the criteria in recommendation 1.39.3, offer an initial 3 full cycles of IVF treatment. If they reach their 40th birthday without conceiving, complete any current full cycle of IVF but do not offer any more cycles. **[2026]**

1.39.7 If the woman, or trans man or non-binary person with female reproductive organs is under 40 years and has not conceived after 3 full cycles of IVF treatment:

- discuss the probability of success and the implications of more treatment, and
- consider up to 3 further full cycles of IVF treatment.

  If they reach their 40th birthday without conceiving, complete any current full cycle of IVF but do not offer any more cycles. **[2026]**

1.39.8 If the woman, or trans man or non-binary person with female reproductive organs is under 40 and has previously had self-funded IVF treatment, do not rule out access to NHS-funded IVF treatment, but count any previous full IVF cycle (whether self-funded or NHS-funded) in the total number of full cycles offered by the NHS. **[2013, amended 2026]**

1.39.9 If the woman, or trans man or non-binary person with female reproductive organs is 40 or 41 years, meets the criteria in recommendation 1.39.3 and has not had IVF treatment before, offer 1 full cycle of IVF treatment. **[2026]**

For a short explanation of why the committee made the 2026 recommendations and how they might affect practice, see the rationale and impact section on access criteria for IVF.

Full details of the evidence and the committee's discussion are in:

- evidence review A: ovarian reserve testing
- evidence review J: fertility prediction models and IVF access.

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Procedures used during in vitro fertilisation (IVF)

1.40 Pre-treatment

For recommendations on pre-treatment, see part B on pre-treatment therapies in the European Society of Human Reproduction and Embryology (ESHRE) guideline on ovarian stimulation for IVF/ICSI (update 2025).

1.40.1 Do not offer endometrial scratch as a pre-treatment means of improving the outcome of IVF. **[2026]**

1.40.2 Do not offer hysteroscopy as a pre-treatment means of improving the outcome of IVF. If uterine or endometrial abnormalities are suspected, see recommendation 1.18.16 in the section on investigation of suspected tubal and uterine abnormalities. **[2026]**

For a short explanation of why the committee made the 2026 recommendations and how they might affect practice, see the rationale and impact section on pre-treatment.

Full details of the evidence and the committee's discussion are in:

- evidence review P: endometrial scratch as a treatment add-on
- evidence review C: screening hysteroscopy.

1.41 Endometrial receptivity testing

1.41.1 Do not offer endometrial receptivity testing as a treatment add-on for embryo transfer. This includes both gene expression analysis (for example, endometrial receptivity array) and microbiological analysis (for example, endometrial

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microbiome metagenomic analysis, analysis of infectious chronic endometritis). **[2026]**

For a short explanation of why the committee made this recommendation and how it might affect practice, see the rationale and impact section on endometrial receptivity testing.

Full details of the evidence and the committee's discussion are in evidence review D: endometrial receptivity testing.

1.42 Immunological treatments

1.42.1 Do not use immunological agents, including intralipids, intravenous immunoglobulins or steroids (glucocorticoids), as part of fertility treatment. **[2026]**

For a short explanation of why the committee made this recommendation and how it might affect practice, see the rationale and impact section on immunological treatments.

Full details of the evidence and the committee's discussion are in evidence review Q: immune therapies as a treatment add-on.

1.43 Pituitary suppression and controlled ovarian stimulation

For recommendations on pituitary suppression and controlled ovarian stimulation, see part C on pituitary suppression and ovarian stimulation in the ESHRE guideline on ovarian stimulation for IVF/ICSI (update 2025).

1.44 Monitoring during ovarian stimulation

For recommendations on monitoring during ovulation stimulation, see part E on monitoring in the ESHRE guideline on ovarian stimulation for IVF/ICSI (update 2025).

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1.45 Triggering ovulation and luteal phase support

For recommendations on triggering ovulation and luteal phase support, see part F on triggering ovulation and luteal support in the ESHRE guideline on ovarian stimulation for IVF/ICSI (update 2025).

1.46 Preventing ovulation hyperstimulation syndrome (OHSS)

For recommendations on preventing ovulation hyperstimulation syndrome (OHSS), see part G on prevention of OHSS in the ESHRE guideline on ovarian stimulation for IVF/ICSI (update 2025).

1.46.1 Clinics providing ovarian stimulation with gonadotrophins should have protocols in place for preventing, diagnosing and managing OHSS. **[2004]**

1.47 Oocyte retrieval

1.47.1 Offer conscious sedation for transvaginal retrieval of oocytes because it is a safe and acceptable method of providing analgesia. **[2004]**

1.47.2 Do not offer follicle flushing before oocyte retrieval if there are at least 3 follicles, because this procedure does not increase the number of oocytes retrieved or pregnancy rates, and it increases the duration of oocyte retrieval and associated pain. **[2004]**

For recommendations on surgical sperm retrieval, see the section on management of male factor fertility problems.

1.48 Embryo selection strategies

1.48.1 Do not offer pre-implantation genetic testing for aneuploidy (PGT-A) as part of fertility treatment to improve live birth rates. **[2026]**

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For a short explanation of why the committee made this recommendation and how it might affect practice, see the rationale and impact section on embryo selection strategies.

Full details of the evidence and the committee's discussion are in:

- evidence review N: pre-implantation genetic testing for aneuploidy as a fertility treatment add-on
- evidence review O: embryo selection guided by continuous time-lapse sequence as a treatment add-on.

1.49 Embryo transfer strategies

1.49.1 Do not offer assisted hatching, because it has not been shown to improve pregnancy rates. **[2004]**

1.49.2 Offer ultrasound-guided embryo transfer during IVF because this improves pregnancy rates. **[2004]**

1.49.3 Replacement of embryos into a uterine cavity with an endometrium of less than 5 mm thickness is unlikely to result in a pregnancy and is therefore not recommended. **[2004]**

1.49.4 Provide information that bed rest of more than 20 minutes' duration following embryo transfer does not improve the outcome of IVF treatment. **[2004]**

1.49.5 Evaluate embryo quality, at both cleavage and blastocyst stages, according to the Association of Reproductive and Clinical Scientists (ARCS) and UK National External Quality Assessment Service (UK NEQAS) Embryo Grading Scheme. **[2013, amended 2026]**

1.49.6 When considering the number of fresh or frozen embryos to transfer in IVF treatment:

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- maternal age under 37 years:
  - in the first full IVF cycle, use single embryo transfer
  - in the second full IVF cycle, use single embryo transfer if 1 or more top-quality embryos are available; consider using 2 embryos if no top-quality embryos are available
  - in the third full IVF cycle, transfer no more than 2 embryos
- maternal age 37 to 39 years:
  - in the first and second full IVF cycles, use single embryo transfer if there are 1 or more top-quality embryos; consider double embryo transfer if there are no top-quality embryos
  - in the third full IVF cycle, transfer no more than 2 embryos
- maternal age 40 to 41 years, consider double embryo transfer. **[2013, amended 2026]**

1.49.7 If IVF treatment is with donor eggs, use an embryo transfer strategy that is based on the age of the donor. **[2013]**

1.49.8 Do not transfer more than 2 embryos during any 1 cycle of IVF treatment. **[2013]**

1.49.9 Where a top-quality blastocyst is available, use single embryo transfer. **[2013]**

1.49.10 When considering double embryo transfer, discuss the risks of multiple pregnancy associated with this strategy. **[2013]**

1.49.11 Offer cryopreservation to store any remaining good-quality embryos after embryo transfer. **[2013]**

1.49.12 Advise women, and trans men and non-binary people with female reproductive organs who have regular ovulatory cycles that the likelihood of a live birth after replacement of frozen–thawed embryos is similar for embryos replaced during natural cycles and hormone-supplemented cycles. **[2013]**

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Intracytoplasmic sperm injection (ICSI)

1.50 Intracytoplasmic sperm injection

1.50.1 Offer ICSI using surgically retrieved sperm or frozen–thawed oocytes. **[2026]**

1.50.2 Consider ICSI:

- if the partner with male reproductive organs has abnormal semen parameters, taking into account the severity
- if a previous in vitro fertilisation (IVF) treatment cycle has resulted in failed fertilisation or a very low fertilisation rate. **[2026]**

1.50.3 Do not use ICSI for non-male factor fertility problems if the semen parameters are normal. **[2026]**

1.50.4 Do not use intracytoplasmic morphologically selected sperm injection (IMSI) as an adjunct to ICSI. **[2026]**

1.50.5 Do not use physiological intracytoplasmic sperm injection (PICSI) in preference to standard ICSI. **[2026]**

For a short explanation of why the committee made these recommendations and how they might affect practice, see the rationale and impact section on intracytoplasmic sperm injection.

Full details of the evidence and the committee's discussion are in:

- evidence review L: intracytoplasmic sperm injection for non-male factor fertility problems
- evidence review M: advanced sperm selection techniques as a fertility treatment add-on.

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Donor insemination

1.51 Medical indications for donor insemination

1.51.1 The use of donor insemination is considered effective in managing fertility problems associated with the following conditions:

- obstructive azoospermia
- non-obstructive azoospermia
- severe deficits in semen quality in couples who do not wish to undergo intracytoplasmic sperm injection (ICSI). **[2004, amended 2013]**

1.51.2 Consider donor insemination in conditions such as:

- where there is a high risk of transmitting a genetic disorder to the child
- where there is a high risk of transmitting infectious disease via the semen to the child or partner with female reproductive organs
- severe rhesus isoimmunisation. **[2004, amended 2013]**

1.51.3 Before starting treatment by donor insemination, confirm ovulation. Offer tubal assessment before treatment if there is a history is suggestive of tubal damage. **[2004, amended 2026]**

1.51.4 Offer donor sperm intrauterine insemination (IUI) in preference to intracervical insemination because it improves pregnancy rates. **[2004]**

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Oocyte donation

1.52 Medical indications for oocyte donation

1.52.1 The use of donor oocytes is considered effective in managing fertility problems associated with the following conditions:

- premature ovarian insufficiency, including following treatment
- gonadal dysgenesis, including Turner syndrome
- certain cases of in vitro fertilisation (IVF) treatment failure.

  Also consider oocyte donation in certain cases where there is a high risk of transmitting a genetic disorder to the child. **[2004, amended 2026]**

1.52.2 Offer oocyte donors information regarding the potential risks of ovarian stimulation and oocyte collection. **[2004]**

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Fertility preservation for medical indications

1.53 Fertility preservation

1.53.1 Discuss fertility preservation as an option with people who are preparing for medical treatment, or who have a medical condition, that is likely to impair their fertility. For people who need urgent treatment, this discussion should take place at the earliest possible opportunity. **[2026]**

1.53.2 When deciding whether to offer fertility preservation, take into account the following factors:

- the person's diagnosis
- the planned treatment
- the likely outcome of subsequent fertility treatment
- the person's prognosis following the treatment of the condition
- the likely viability of stored or post-thawed material. **[2013, amended 2026]**

1.53.3 For NHS-funded fertility preservation, do not apply the eligibility criteria used for conventional fertility treatment, including the lower age limit. **[2013, amended 2026]**

1.53.4 Inform people who are considering fertility preservation that eligibility criteria for assisted conception in an NHS setting will apply when it comes to using stored material. **[2013, amended 2026]**

1.53.5 Offer sperm cryopreservation to men (and boys), and trans women and non-binary people with male reproductive organs who are of reproductive age, and who are preparing for medical treatment, or who have a medical condition, that is likely to make them infertile. **[2026]**

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1.53.6 Offer oocyte or embryo cryopreservation (as appropriate) to women (and girls), and trans men and non-binary people with female reproductive organs who are of reproductive age, and who are preparing for medical treatment, or who have a medical condition, that is likely to make them infertile. Also see part D on fertility preservation and oocyte donation in the European Society of Human Reproduction and Embryology (ESHRE) guideline on ovarian stimulation for IVF/ICSI (update 2025). **[2026]**

1.53.7 Consider ovarian tissue cryopreservation when oocyte or embryo cryopreservation is not feasible, for example, in girls before puberty. See the NICE HealthTech guidance on removal, preservation and reimplantation of ovarian tissue for restoring fertility after gonadotoxic treatment. **[2026]**

1.53.8 Organise follow-ups at least every 5 years with people who have had their material preserved to determine whether or not there is a need to continue NHS-funded storage. Offer continued NHS-funded storage for people who remain at continued significant risk of infertility, in line with legislation on consent. **[2026]**

For a short explanation of why the committee made the 2026 recommendations and how they might affect practice, see the rationale and impact section on fertility preservation for medical indications.

Full details of the evidence and the committee's discussion are in evidence review R: fertility preservation.

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Long-term safety of assisted reproductive technologies

1.54 Long-term health outcomes of ovulation induction and ovarian stimulation

1.54.1 Give people who are considering ovulation induction or ovarian stimulation up-to-date information about the long-term health outcomes of these treatments. **[2013]**

1.54.2 Inform people who are offered ovulation induction or ovarian stimulation that:

- no direct association has been found between these treatments and invasive cancer **and**
- no association has been found in the short to medium term between these treatments and adverse outcomes (including cancer) in children born from ovulation induction **and**
- information about long-term health outcomes is still awaited. **[2013]**

1.54.3 Limit the use of ovulation induction or ovarian stimulation agents to the lowest effective dose and duration of use. **[2013]**

1.55 Long-term health outcomes and safety of in vitro fertilisation (IVF)

1.55.1 Give people who are considering IVF treatment, with or without intracytoplasmic sperm injection (ICSI), up to-date information about the long-term health outcomes (including the consequences of multiple pregnancy) of these treatments. **[2013]**

1.55.2 Inform people that, while the absolute risks of long-term adverse outcomes of IVF

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treatment, with or without ICSI, are low, a small increased risk of borderline ovarian tumours cannot be excluded. **[2013]**

1.55.3 Inform people who are considering IVF treatment that the absolute risks of long-term adverse outcomes in children born as result of IVF are low. **[2013]**

1.55.4 Limit drugs used for controlled ovarian stimulation in IVF treatment to the lowest effective dose and duration of use. **[2013]**

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Terms used in this guideline

This section defines terms that have been used in a particular way for this guideline. For other definitions, see the NICE glossary and the Think Local, Act Personal Care and Support Jargon Buster.

Expectant management

A formal approach that encourages conception through unprotected vaginal intercourse. It involves supportively offering an individual or couple information and advice about the regularity and timing of intercourse and any lifestyle changes that might improve their chances of conceiving. It does not involve active clinical or therapeutic interventions.

Full cycle

This term is used to define a full in vitro fertilisation (IVF) treatment, which should include 1 episode of ovarian stimulation and the transfer of any resultant fresh and frozen embryo(s).

Spontaneous conception

This term is used to describe when a pregnancy occurs without the aid of assisted reproductive technologies. Elsewhere, other terms may be used, such as natural conception, unassisted conception, or conception without treatment.

Suspected or known clinical cause of infertility

This includes history, symptoms and signs, for example:

- irregular or absent periods
- significant pelvic pain
- gynaecological condition such as endometriosis or chronic pelvic inflammatory disease

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- history of ectopic pregnancy
- history of recurrent ovarian cystectomies
- history of multiple abdominopelvic surgeries
- history of undescended testes
- history of testicular cancer
- history of inguinal or scrotal surgery with atrophic testicle
- clinically significant varicocele
- history of orchitis including mumps orchitis (if occurred post-pubertally)
- any condition with loss of ejaculation
- history of chemotherapy or pelvic radiotherapy.

Natural cycle IVF

An IVF procedure in which 1 or more oocytes are collected from the ovaries during a spontaneous menstrual cycle without the use of drugs.

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Recommendations for research

The guideline committee has made the following recommendations for research.

Key recommendations for research

1 Treatments based on endometrial receptivity testing

Do treatments for identified endometrial abnormalities related to the microbiome or microbiological analysis (such as antibiotics to treat endometritis or microbiota transplantation) improve reproductive outcomes for people undergoing assisted reproduction? **[2026]**

For a short explanation of why the committee made this recommendation for research, see the rationale section on endometrial receptivity testing.

Full details of the evidence and the committee's discussion are in evidence review D: endometrial receptivity testing.

2 Subclinical hypothyroidism

What are the benefits and harms of levothyroxine for the treatment of subclinical hypothyroidism in women, and trans men and non-binary people with female reproductive organs who are receiving fertility treatment? **[2026]**

For a short explanation of why the committee made this recommendation for research, see the rationale section on subclinical hypothyroidism.

Full details of the evidence and the committee's discussion are in evidence review B: subclinical hypothyroidism.

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3 Testicular tissue cryopreservation

What is the safety and clinical and cost effectiveness of testicular tissue cryopreservation for fertility preservation for prepubertal and peripubertal boys who are undergoing medical treatment, or who have a medical condition, that is likely to impair their fertility? **[2026]**

For a short explanation of why the committee made this recommendation for research, see the rationale section on fertility preservation for medical indications.

Full details of the evidence and the committee's discussion are in evidence review R: fertility preservation.

4 Hormone treatments for male factor fertility problems

What is the effectiveness of anti-oestrogens or gonadotrophins in men, trans women and non-binary people with azoospermia or impaired or reduced semen parameters (non-azoospermia) with normal or high follicle-stimulating hormone (FSH) and low testosterone?

For a short explanation of why the committee made this recommendation for research, see the rationale section on medical management of male factor fertility problems.

Full details of the evidence and the committee's discussion are in evidence review U: hormone treatment for male factor fertility problems.

5 Treatment for varicocele

What is the clinical and cost effectiveness of radiological, surgical and microsurgical treatments for fertility problems associated with varicocele?

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For a short explanation of why the committee made this recommendation for research, see the rationale section on varicocele.

Full details of the evidence and the committee's discussion are in evidence review X: treatments for varicocele.

Other recommendations for research

Expectant management before IVF

What is the optimum period of expectant management for women, and trans men and non-binary people with female reproductive organs of different age groups before invasive treatment such as in vitro fertilisation (IVF) is considered? **[2013]**

Why this is important

Where there is no known cause for infertility, expectant management increases the cumulative chances of successful conception. However, the chances of a live birth both by spontaneous conception and by using assisted reproductive technology decline with advancing age because of decreasing ovarian reserve. If there were better evidence, it might be possible to customise the period of expectant management based on age, including longer periods of expectant management for younger people.

Long-term safety of ovarian stimulation and ovulation induction in women, and trans men and non-binary people

Is there an association between ovulation induction or ovarian stimulation and adverse long-term (over 20 years) effects in women? **[2013]**

Why this is important

People need to be reassured that it is safe to undergo ovulation induction and ovarian stimulation, and that these interventions will not lead to significant long-term health issues, especially ovarian malignancy. Both treatments are common in managing infertility. The use of ovarian stimulation in IVF is particularly important, as IVF is the final treatment

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option for most causes of infertility. During the review for the 2013 guideline update, the guideline development group commented on the paucity of long-term research on the subject, despite the fact that the treatments have been established practice for over 30 years. The longest length of follow-up in the studies reviewed was 20 years, and the larger studies had shorter follow-up periods.

Long-term effects of IVF with or without ICSI in children

What are the long-term (over 20 years) effects of IVF with or without intracytoplasmic sperm injection (ICSI) in children in the UK? **[2013]**

Why this is important

This topic is important in informing patients, service providers and society at large about the potential long-term safety of assisted reproduction. Both IVF and ICSI involve manipulation of egg and sperm in the laboratory, with impacts on the development of the subsequent embryo. However, while the first successful live birth following IVF was over 30 years ago, there is relatively little long-term research on the subject. In the review undertaken in this guideline update, the longest length of follow-up in the studies reviewed was 20 years, and the larger studies had shorter follow-up periods.

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Rationale and impact

These sections briefly explain why the committee made the recommendations and how they might affect services.

Advice about conception using donor sperm

Recommendation 1.1.4

Why the committee made the recommendation

The committee noted that some people seek donor insemination through unregulated routes such as websites, social media, or friends or family members, instead of through a regulated, licensed fertility clinic. This may be because of limited access to NHS-funded donor insemination or the cost of self-funded care, or factors such as shorter waiting times, better availability of sperm, or previous healthcare experiences. However, the committee agreed that using donor sperm through unregulated routes carries health and other risks. Licensed fertility clinics provide essential safeguards by following strict standards for donor screening, infectious disease testing and genetic evaluation, which reduces the health risks associated with unregulated donations. Licensed fertility clinics also ensure legal parenthood by formalising consent and guaranteeing that donors relinquish parental rights – protections not guaranteed in informal arrangements, which can lead to legal disputes.

The committee agreed that these measures uphold safety, legality and accountability, making treatment in a licensed fertility clinic their recommended approach, and that this should be discussed with couples who are planning conception using donor sperm.

How the recommendation might affect practice

Advising people about the potential risks and harms of using unregulated donor insemination could lead to more people seeking safer donor insemination in licensed fertility clinics. However, the committee were aware that current restrictions on access to NHS-funded donor insemination and the cost of treatment in licensed fertility clinics may pose challenges for some people.

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Return to recommendation

Miscarriage or ectopic pregnancy when trying to conceive

Recommendation 1.16.7

Why the committee made the recommendation

The committee were aware that some people have a miscarriage or an ectopic pregnancy during the year of unprotected vaginal sexual intercourse before they are eligible to have investigations for infertility. Similarly, this can occur during the second year of expectant management for unexplained infertility, or during the 12 cycles of artificial insemination. The committee were aware that in practice, this sometimes means that people are made to restart the eligibility period from the date of the miscarriage or ectopic pregnancy. The committee agreed that such decisions are unjustified. To address this, the committee agreed a new recommendation to clarify this issue and ensure that people do not have to restart the eligibility timeframe after having a miscarriage or an ectopic pregnancy. The same principle also applies to people who are using artificial insemination to conceive.

How the recommendation might affect practice

The recommendation will standardise good practice and reduce variation in service provision. It will reduce unnecessary delays in access to clinical assessment, investigations and treatment for fertility problems in some areas for people who may be subfertile and experience a miscarriage or an ectopic pregnancy.

Return to recommendation

Testing for male factor fertility problems

Recommendations 1.17.5 to 1.17.11

Why the committee made the recommendations

The committee highlighted the variation in clinical practice in terms of investigations for

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male factor fertility problems. They also discussed how explorations of couples' fertility problems often focus on the partner with female reproductive organs, and emphasised the importance of assessing male factors as well. Investigations for male factor infertility may have wider implications for the health of the partner with male reproductive organs.

Physical examination and measuring serum testosterone and gonadotrophin levels

Based on their knowledge and experience, the committee agreed that carrying out a physical examination of the scrotum and testes is an essential part of assessing male infertility after 2 or more abnormal semen analyses. It can help detect the underlying causes of semen abnormalities, such as varicocele and testicular cancer, and inform treatment, and is a simple and low-cost procedure. In addition, testing serum testosterone and gonadotrophin levels may reveal an underlying hormonal issue that could be treated.

Sperm DNA integrity (fragmentation) testing

The evidence on treating sperm DNA fragmentation did not show a convincing benefit. Without effective treatments, and given that sperm DNA assays are expensive tests that can take weeks to obtain results, the committee recommended against testing for sperm DNA integrity (fragmentation). They agreed that the link between elevated DNA fragmentation and subfertility has not yet been established. It is also not clear which type of test and what threshold should be used for defining elevated DNA fragmentation. Given these uncertainties, the committee agreed that testing for sperm DNA integrity is not appropriate.

Y chromosome microdeletion testing

According to the evidence and the committee's knowledge and experience, it is almost impossible to extract sperm through surgical sperm retrieval for people with Y chromosome AFZa and AFZb microdeletions. To avoid unnecessary surgical sperm retrieval with no chance of success, the committee agreed the importance of testing for Y chromosome microdeletions in those with azoospermia or a sperm concentration of less than 1 million per ml. This cut-off was agreed through committee consensus, based on their knowledge that the vast majority of microdeletions occur in those with sperm concentrations less than or equal to 1 million per ml. Therefore, testing in those with higher sperm concentrations might not be cost effective.

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Testing for cystic fibrosis transmembrane conductance regulator genetic mutations, and karyotype abnormalities and genetic counselling

The committee also reviewed the 2004 recommendations around genetic testing before intracytoplasmic sperm injection (ICSI) for male factor fertility problems, and agreed the need for clearer guidance on tests for cystic fibrosis transmembrane conductance regulator genetic mutations, karyotype abnormalities and genetic counselling. They made recommendations based on consensus to clarify what to test and in whom, and to reflect current best practice.

How the recommendations might affect practice

Physical examination of the scrotum and testes is a low-cost and simple intervention. There may be an increase in offering this, which should lead to improved identification of underlying causes of fertility problems or wider health issues.

Testosterone and gonadotrophin tests are relatively low cost and can support appropriate management of male factor fertility problems by identifying hormonal abnormalities that may be treatable.

Not testing for DNA integrity (fragmentation) reflects current NHS practice.

There may be an increase in testing for Y chromosome microdeletions, but any cost should be offset by reduction in surgical sperm retrieval procedures where it is unlikely to be successful.

The recommendations on genetic testing will use resources more efficiently by clarifying the populations who should be tested for cystic fibrosis transmembrane conductance regulator genetic mutations and karyotype.

Return to recommendations

Ovarian reserve testing

Recommendations 1.18.3 to 1.18.5

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Why the committee made the recommendations

There was a lack of good evidence showing any association between anti-Müllerian hormone (AMH) levels and spontaneous clinical pregnancy. The committee agreed that measuring AMH levels should not be used to predict the chance of spontaneous conception.

There was some evidence of an association between AMH levels and rates of live births and clinical pregnancy after assisted conception, so the committee agreed that AMH could be used as a prognostic indicator for outcomes of assisted conception. Although there was less evidence for antral follicle count (AFC), the committee agreed that AFC has a similar ability to AMH to predict ovarian response in conjunction with assisted conception. Overall, there was sufficient evidence to recommend using either AMH or AFC to form part of the clinical considerations regarding the best possible treatment regimen, and to aid individualised discussions about the chance of live birth following assisted conception.

There was evidence that follicle-stimulating hormone (FSH) levels do not predict clinical pregnancy or ovarian response.

The committee agreed that there may be other indications for using these tests if not for ovarian reserve testing, such as investigating ovulatory disorders.

How the recommendations might affect practice

The use of AMH or AFC in conjunction with assisted conception will likely be increased. Although FSH is now rarely used as an ovarian reserve marker, it is still occasionally offered as a cheaper alternative to an AMH test despite its lack of predictive ability, so the recommendations will change this practice.

Return to recommendations

Subclinical hypothyroidism

Why the committee only made a recommendation for research

The committee looked for evidence on whether treating subclinical hypothyroidism would have an impact on fertility outcomes, but no evidence from randomised controlled trials

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was found. The committee agreed that subclinical hypothyroidism would not normally be picked up because it is often asymptomatic; therefore, if treating it would be beneficial, people with fertility problems should also be screened for it. Taking into account the lack of evidence on treating subclinical hypothyroidism and the potential costs of unnecessary screening, the committee agreed that the 2004 recommendations about not offering routine measurement of thyroid function to those without symptoms of thyroid disease are still valid. However, to address the lack of evidence and uncertainty about potential benefits or harms associated with treatment for subclinical hypothyroidism, the committee agreed to make a recommendation for research on the benefits and harms of levothyroxine for the treatment of subclinical hypothyroidism in women, and trans men and non-binary people with female reproductive organs who are receiving fertility treatment.

Return to recommendations

Coeliac disease testing

Recommendation 1.23.1

Why the committee made the recommendation

The NICE guideline on coeliac disease has a recommendation relevant to people with unexplained subfertility so the committee agreed to cross-refer to it.

How the recommendation might affect practice

The recommendation is already included in the NICE guideline on coeliac disease, but it is not common practice in fertility services. Including it in this guideline may lead to some increase in serological testing for coeliac disease.

Return to recommendation

Medical management of male factor fertility problems

Recommendations 1.24.1 to 1.24.3, and 1.24.6

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Why the committee made the recommendations

The committee agreed, based on their knowledge and experience, that replacement therapy with gonadotrophins is necessary to treat hypogonadotropic hypogonadism.

However, if azoospermia or non-azoospermia is not associated with hypogonadotropic hypogonadism, the effectiveness of treatment is less certain. There was some evidence of benefit for anti-oestrogens and gonadotrophins in improving pregnancy rates and live births, but the evidence had serious limitations, including very small study sizes, a lack of information on the ages of the women involved, as well as confounding factors such as varicocele surgery. Because of the uncertainty of the evidence, and based on their knowledge and experience, the committee agreed that these treatments should only be used as part of a clinical trial in people with impaired semen parameters and no hypogonadotropic hypogonadism. As the evidence was unclear, the committee also made a recommendation for research about the effectiveness of anti-oestrogens or gonadotrophins.

There was no evidence of improved pregnancy rates with the use of androgens, and the committee discussed that, based on their knowledge and experience, taking androgens may even harm fertility.

There was no standardised treatment for sperm DNA fragmentation with different types, doses and combinations of antioxidants, supplements and medical treatments used across studies, and no convincing evidence of benefit because antioxidants showed equivocal effects on live birth and sperm DNA fragmentation. There were also no benefits in relation to clinical pregnancy, miscarriage, stillbirth, and embryo quality or grading. The committee agreed that currently there is too much uncertainty about the relationship between sperm DNA fragmentation and subfertility, about the best way to test and define this, and if and how this should be treated. Before these uncertainties are resolved, they agreed that testing and treating sperm DNA integrity is not appropriate.

How the recommendations might affect practice

The recommendations may decrease the use of gonadotrophins and anti-oestrogens to treat semen abnormalities, except to treat hypogonadotropic hypogonadism, and may decrease the use of androgens to treat semen abnormalities.

The recommendation on treatment for DNA fragmentation reflects current best practice.

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Azoospermia

Recommendations 1.25.1 to 1.25.3

Why the committee made the recommendations

There was evidence that vasovasostomy, vasoepididymostomy and epididymovasostomy (all forms of surgical correction) and surgical sperm retrieval all increase chance of live birth and clinical pregnancy. The committee agreed that vasovasostomy is a simpler surgical technique but is not possible in all cases because it depends on the presentation of the obstruction, so the surgeon may need to decide which technique to use during the procedure. Likewise, the committee agreed that the decision whether to use surgical reconstruction or surgical sperm retrieval would depend on other factors including female factors, time since the obstruction and personal preference.

There was no evidence on the techniques for surgical sperm retrieval in obstructive azoospermia, so the committee did not specify a technique.

For non-obstructive azoospermia, there was very limited evidence showing that microscopic testicular sperm extraction (micro-TESE) leads to a greater rate of sperm retrieval (suitable for in vitro fertilisation [IVF] or ICSI) compared to testicular sperm aspiration (TESA). The committee noted that this finding was consistent with their own experience and in clinical practice, micro-TESE would be the preferred method of surgical sperm retrieval. There was evidence that micro-TESE does not increase adverse effects including testicular pain, atrophy, haematoma and infection compared to TESA plus salvage micro-TESE. However, the evidence base was limited and of low quality, and there was no evidence for live birth, clinical pregnancy and miscarriage so the committee agreed that they could only recommend micro-TESE as an option for sperm retrieval.

How the recommendations might affect practice

The recommendation for obstructive azoospermia will standardise practice across the NHS by offering a choice of treatment options.

The recommendations will increase the use of micro-TESE to retrieve sperm for IVF or ICSI

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for non-obstructive azoospermia.

Return to recommendations

Y chromosome microdeletions

Recommendation 1.26.1

Why the committee made the recommendation

The evidence, although of poor quality, showed that the rate of successful surgical sperm retrieval in people with Y chromosome AZFa or AZFb microdeletions was very low. This was even lower compared with people with Y chromosome AZFc microdeletions and those without Y chromosome microdeletions. These findings aligned with the committee's experience. The committee noted that the presence of a Y chromosome AZFc microdeletion does not affect the success of surgical sperm retrieval.

How the recommendation might affect practice

The recommendation reflects current best practice.

Return to recommendation

Reduced sperm DNA integrity

Recommendation 1.27.1

Why the committee made the recommendation

There was limited evidence on testicular sperm extraction as a treatment for sperm DNA fragmentation, and no benefits were shown in terms of pregnancy or miscarriage rates when comparing ICSI using extracted sperm and ICSI using ejaculated sperm. The committee also acknowledged the wider uncertainties about the relationship between sperm DNA fragmentation and subfertility, and the best way to test and define this. Based on this evidence, the committee recommended against surgical sperm retrieval as a way of improving outcomes for people with reduced sperm DNA integrity.

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How the recommendation might affect practice

The recommendation reflects current best practice.

Return to recommendation

Varicocele

Recommendation 1.28.1

Why the committee made the recommendation

There was evidence of higher pregnancy rates following surgical or radiological treatment for varicocele for a subgroup with clinically detected varicocele and abnormal semen analysis, compared with no treatment. Very few studies reported on the outcome of live birth and those that did reported mixed results. Based on the evidence, the committee agreed that treatment for varicocele should be considered for those with clinically detected varicocele and abnormal semen analysis. The committee agreed that female factors should be taken into account because, where there is no chance of spontaneous conception because of female factor fertility problems, treating varicocele in the partner with male reproductive organs would not be needed.

The evidence showed no important difference between surgical and radiological treatment, but the committee noted that no evidence was identified for the important adverse outcome of testicular atrophy for this comparison. A small and statistically significant benefit of microscopic subinguinal surgical treatment relative to other surgical treatments was also observed. The committee noted that, although this option would be likely to be the preferred approach in specialist clinics, it is not universally available.

Because of the limited evidence and uncertainty in terms of the relative clinical and cost effectiveness of different radiological and surgical treatments, the committee made a recommendation for research to compare the clinical and cost effectiveness of radiological, surgical and microsurgical treatment for varicocele.

The evidence review only included couples attempting spontaneous conception. Based on their knowledge and experience, the committee discussed the potential benefits of treating varicocele before assisted conception but they were not aware of any evidence from randomised controlled trials on this topic. Therefore, they agreed that it was not

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appropriate to make any recommendations for this population.

How the recommendation might affect practice

The recommendation for varicocele might increase the use of this treatment, but this should lower the need for IVF and ICSI because couples could conceive spontaneously without the need for assisted conception. On the other hand, there could be a decrease in unnecessary treatment of varicocele for people in whom the varicocele is only detectable on ultrasound and not on examination.

Return to recommendation

Management of ejaculatory failure

Recommendation 1.29.1

Why the committee made the recommendation

No evidence from randomised controlled trials was identified so the recommendation was made based on the committee's knowledge and experience. Because there are many different causes of ejaculatory failure, such as retrograde ejaculation, diabetic neuropathy, spinal cord injury and ejaculatory duct obstruction, it is important to identify the cause to determine the most appropriate and least invasive approach to manage the issue. The committee agree that the standard male infertility assessment would usually help identify the cause.

How the recommendation might affect practice

The recommendation reflects current best practice and can lead to more effective use of resources.

Return to recommendation

Hypogonadotropic hypogonadism

Recommendations 1.30.1 and 1.30.2

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Why the committee made the recommendations

The committee discussed that anovulatory infertility may be due to reduced body weight, so increasing weight or reducing excessive exercise, or both, may improve fertility. However, in some cases, the lack of gonadotrophin-releasing hormone from the hypothalamus or gonadotrophins from the pituitary gland leads to failure of ovulation, so replacement therapy with gonadotrophin-releasing hormone or gonadotrophins with luteinising hormone activity is needed to induce ovulation.

The committee noted that there was very limited evidence for increased clinical pregnancy rates with a recombinant follicle-stimulating hormone or luteinising hormone product compared with human menopausal gonadotrophin, but no evidence of a difference in the live birth rate. Because the evidence was so limited, the committee agreed not to recommend a specific type of gonadotrophin.

How the recommendations might affect practice

The recommendations will reinforce current practice to treat hypogonadotropic hypogonadism with gonadotrophins or gonadotrophin-releasing hormones.

Return to recommendations

Ovulatory disorders due to hyperprolactinaemia

Recommendation 1.32.1

Why the committee made the recommendation

There was some evidence that cabergoline resolves amenorrhoea and improves pregnancy rates. The committee noted that the 2013 guideline had recommended bromocriptine but they were aware, based on their knowledge and experience, that cabergoline is associated with fewer side effects than bromocriptine, is less expensive and only needs to be taken once a week. They therefore agreed that cabergoline should be used to treat hyperprolactinaemia instead of bromocriptine.

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How the recommendation might affect practice

The recommendation will increase the use of cabergoline for ovulatory disorders due to hyperprolactinaemia and reduce the use of bromocriptine. This will reduce costs for the NHS.

Return to recommendation

Tubal surgery for mild tubal disease

Recommendation 1.34.1

Why the committee made the recommendation

The committee based the recommendation on their clinical knowledge and experience as no relevant randomised controlled trials were found. The committee agreed that tubal surgery should be considered as a treatment option for those with mild tubal disease who do not wish to have IVF because of, for example, their preferences, or moral or religious beliefs. The committee drew on current clinical practice and their knowledge of older cohort studies that suggest that tubal surgery may not be effective for more damaged fallopian tubes, so agreed not to recommend it for those with moderate or severe tubal disease. The committee wanted to emphasise that tubal surgery should be performed in centres where appropriate expertise is available, to ensure patient safety.

How the recommendation might affect practice

The recommendation reinforces current best practice.

Return to recommendation

Tubal catheterisation

Recommendation 1.34.2

Why the committee made the recommendation

Evidence from non-comparative and very-low-quality studies showed some benefit of

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tubal catheterisation. For example, for women, trans men and non-binary people with bilateral obstruction who would not be able to conceive without the procedure, a live birth rate of 16% and clinical pregnancy rate of 19% could be considered as an appreciable potential benefit. However, the committee noted the considerable heterogeneity and uncertainty in the evidence. The evidence on outcomes of ectopic pregnancy, miscarriage, or tubal perforation following tubal catheterisation was more consistent and showed low rates.

Without comparative trials comparing tubal catheterisation with other treatments, it was difficult to make a strong recommendation. In practice, IVF is often offered to those with proximal tubal obstruction. However, for some people, tubal catheterisation may be the preferred treatment option, particularly where there might be religious or other objections to IVF, or where IVF might not be expected to have a significantly higher success rate relative to spontaneous conception – as in the case of those with diminished ovarian reserve.

Given the uncertainties around the potential benefits, the low rates of harm, and the importance of patient preference and shared decision making, the committee agreed that fallopian tube catheterisation should be considered for those with proximal tubal obstruction. However, this should be in the context of a full treatment discussion that covers the risks and benefits of other treatments, including IVF.

How the recommendation might affect practice

The recommendation reinforces current best practice.

Return to recommendation

Surgery for hydrosalpinges before IVF

Recommendations 1.34.3 and 1.34.4

Why the committee made the recommendations

There was evidence that salpingectomy before IVF compared with no surgery improves clinical pregnancy rates. No evidence was available on its effectiveness on improving live birth rates. There was also evidence that tubal occlusion before IVF improves clinical

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pregnancy rates when compared with no surgery. Evidence comparing salpingectomy and tubal occlusion found no clinically important difference between the 2 treatments. The committee noted that salpingectomy is a more invasive procedure but may help those who have chronic pelvic pain in addition to hydrosalpinges. Based on the evidence, the committee agreed that both treatments are options for treating hydrosalpinges before IVF.

There was some evidence that transvaginal aspiration of hydrosalpinges before IVF is effective in improving clinical pregnancy rates compared with no treatment. The committee noted that aspiration does not provide a permanent solution, and that fluid often re-accumulates. Based on the evidence, the committee agreed that aspiration can be considered for those for whom laparoscopic surgery is not advised.

How the recommendations might affect practice

Recommendation on salpingectomy and tubal occlusion reflect current practice. The recommendation on aspiration to treat hydrosalpinges may lead to an increase in this procedure as it is not currently common practice. If it is done at the time of egg collection, no extra procedure would be needed. There could indeed be an overall resource saving through reduced need for further IVF cycles if people who would otherwise not have treatment for their hydrosalpinges (because laparoscopy would be risky) would increase their chances of pregnancy through aspiration treatment.

Return to recommendations

Unexplained fertility problems in people trying to conceive through unprotected vaginal sexual intercourse

Recommendations 1.38.2 and 1.38.3

Why the committee made the recommendations

A network meta-analysis (NMA) compared the following options for people with unexplained fertility problems:

- expectant management (no treatment)

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- different ovarian stimulation regimens
- intrauterine insemination (IUI) with or without ovarian stimulation
- IVF.

The NMA compared these with their effect on live birth rate, clinical pregnancy rate and multiple gestation. An economic model was developed based on the NMA. Based on the clinical- and cost-effectiveness evidence, the committee concluded that IVF is the most cost-effective first-line treatment, and ovarian stimulation alone is not effective or cost effective. There was sufficient evidence that IUI with ovarian stimulation with a gonadotrophin could be cost effective, so the committee agreed that it could be considered as an alternative first-line treatment option before IVF. The committee acknowledged that some people may prefer the less invasive treatment of IUI to IVF.

Most of the evidence reviewed focused on people with unexplained fertility problems, although some of the studies extended the population to include those with 'mild endometriosis' and 'mild male factor fertility problems'. However, because these were not distinct population groups in the evidence and no standard definitions exist, the committee did not refer to these in the recommendations.

How the recommendations might affect practice

More people might opt for IUI (with a gonadotrophin) as first-line treatment before IVF. This could result in some increase in costs, but the committee agreed that this should be limited as it would likely only affect a small proportion of the relevant population and would avoid the need for IVF for some. Otherwise, the recommendations are not expected to have a significant resource impact as the 2013 guideline also recommended IVF as a first-line treatment.

Return to recommendations

Endometriosis

Recommendations 1.36.1 to 1.36.3

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Why the committee made the recommendations

The committee reviewed the evidence comparing the clinical and cost effectiveness of expectant management (no treatment), different ovarian stimulation regimens, IUI with or without ovarian stimulation, and IVF. Most of the populations in the studies were people with unexplained fertility problems, although some of the studies extended the population to include those with 'mild endometriosis' and 'mild male factor fertility problems'. 'Mild endometriosis' in the studies was typically defined as the revised American Society for Reproductive Medicine (rASRM) stage 1 or 2. However, these were not distinct population groups in the evidence, so the committee did not to refer to these in the recommendations.

Endometriosis can cause infertility, and first-line treatment – such as hormone treatment with the oral contraceptive pill – is not appropriate for women, trans men and non-binary people with female reproductive organs who are trying to conceive. Surgical treatment for endometriosis may be an option, and the committee acknowledged that NICE's endometriosis guideline provides recommendations for situations where fertility is a priority.

The committee agreed that fertility management options for endometriosis include expectant management, surgical treatment or assisted reproductive techniques. The most appropriate option depends on various factors, such as how long the person has been trying to conceive, the symptoms and severity of the endometriosis, their age and ovarian reserve, and the presence of any male factor fertility issues.

In some cases, expectant management would not be an option where, for example, there is considered to be little chance of spontaneous conception because of the extent or severity of the endometriosis, or where the endometriosis symptoms have such an impact that the person could not stop taking symptom-relieving hormone treatment for an extended period. The committee also noted that the severity of endometriosis based on imaging (using, for example, rASRM staging) does not necessarily correspond with the impact of the endometriosis on the person's fertility or quality of life. The committee were aware of the Endometriosis Fertility Index (EFI), which is a validated tool that can help with advising on the chances of pregnancy following surgery, and identify those who would benefit from assisted reproductive techniques.

Based on the clinical- and cost-effectiveness evidence, compared to IUI (with or without stimulation) or ovarian stimulation alone, IVF is the most cost-effective first-line treatment,

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and ovarian stimulation alone is not effective or cost effective. There was sufficient evidence that IUI with ovarian stimulation with a gonadotrophin could be cost effective, so the committee agreed that it could be considered as a treatment option. The committee discussed that in practice, this option could be appropriate for those without deep endometriosis and with patent fallopian tubes. They also acknowledged that some may prefer the less invasive treatment of IUI to IVF.

How the recommendations might affect practice

The recommendations should improve care for couples with fertility problems related to endometriosis. They reinforce the need to assess the couple's overall fertility potential and consider treatment options based on multiple factors including symptom severity, recognising that the physical extent of endometriosis does not always correlate with fertility outcomes. The recommendations may increase the use of stimulated IUI as a treatment option before IVF, and will reinforce the option of surgery as a treatment option.

Return to recommendations

Access criteria for IVF

Recommendations 1.39.2 and 1.39.3, 1.39.6 and 1.39.7, and 1.39.9

Why the committee made the recommendations

Evidence supported using ovarian reserve (using anti-Müllerian hormone or antral follicle count) as a prognostic indicator for outcomes of assisted conception, so the committee agreed that ovarian reserve should be taken into account when discussing IVF as a treatment option.

The recommendations on IVF access criteria are based on an economic analysis that used validated prediction models to estimate the effectiveness and cost effectiveness of IVF in different clinical scenarios. The committee agreed that the economic analysis, despite some limitations, provides stronger evidence than the 2013 guideline that 3 full cycles of IVF is a cost-effective treatment for the NHS to provide for those under 40 years. This is manifested by much lower incremental cost-effectiveness ratios (ICERs) than observed in the 2013 guideline, typically falling below a cost-effectiveness threshold of £20,000 per quality-adjusted life year (QALY). The 2013 guideline had used a less stringent cost-

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effectiveness threshold of £30,000 per QALY.

The analysis suggested that up to 6 cycles could be cost effective using a threshold of £20,000 per QALY. However, there were some uncertainties in the evidence, particularly for cycles 4 to 6. These uncertainties relate to concerns about increasing selection bias in the datasets informing the prediction models and the very small numbers of women in these datasets having 4 or more cycles, resulting in considerable sampling uncertainty around the point estimates for predicted live birth rates for these higher order IVF cycles. The committee agreed that the evidence was not sufficiently robust to justify increasing the number of cycles initially being offered because of its potentially significant resource impact, but agreed that further cycles, beyond the initial 3, could be considered.

For those aged 40 or 41 years, the cost-effectiveness evidence for IVF was less clear cut, and in some model scenarios, was not found to be cost effective. However, the committee did note that a limited number of IVF cycles was often cost effective, especially if the inherent uncertainty in the model parameters was taken into account. Therefore, the committee agreed that the evidence did not support removing the provision of IVF altogether for this age group and recommended that 1 cycle of IVF be offered.

However, the committee agreed that the cost-effectiveness analysis did not provide sufficiently strong evidence to support the provision of IVF to 42-year-olds. The committee agreed on the need to produce pragmatic recommendations that reflected the totality of the cost-effectiveness evidence and the limitations of the data. In women aged 42 years, no cycles of IVF were ever cost effective at an ICER of £20,000 per QALY in any of the scenarios in the base-case analyses. And for most clinical scenarios included in the analysis, IVF was not cost effective even when using the less stringent £30,000 per QALY decision threshold. In the limited scenarios where borderline cost effectiveness was suggested, limitations in the data, likely overestimation of IVF effectiveness or other factors, led to the committee to conclude that IVF is not a cost-effective treatment for people aged 42 or over.

How the recommendations might affect practice

In current practice, very few areas in England offer IVF treatment according to NICE recommendations. The cost-effectiveness evidence for IVF for those under 40 is now stronger, which could lead to an increase in the number of IVF cycles provided by the NHS. This would have a resource impact, although, based on their knowledge of localised data where more cycles are offered, the committee agreed that the provision of IVF would likely

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not increase that much. Areas that currently offer IVF to 42-year-olds would be expected to change practice, so there could be some modest cost savings in those areas.

Return to recommendations

Pre-treatment

Recommendations 1.40.1 and 1.40.2

Why the committee made the recommendations

The evidence on endometrial scratch was inconclusive. There were mixed findings across different studies, including potential harm, potential benefit, or no effect. Endometrial scratch is an invasive procedure that has time, resource and financial costs because it is not possible to combine it with another procedure. Because of the uncertainty and inconsistency in the evidence, and the potential for endometrial scratch to have a negative impact on IVF outcomes or no impact at all, the committee agreed that it should not be offered.

There was conflicting evidence from randomised controlled trials (RCTs) on the effectiveness of screening hysteroscopy before assisted conception for those without known or suspected uterine abnormalities on outcomes of live birth and clinical pregnancy. Larger, better quality, multicentre RCTs showed no benefit on these outcomes, whereas several smaller RCTs with a higher risk of bias showed there to be an important benefit. Balancing the uncertainty in the evidence around any benefit against the invasiveness and cost of the procedure, the committee concluded that hysteroscopy should not be offered as a way to improve IVF outcomes. However, the committee recognised the importance of hysteroscopy when uterine or endometrial abnormality is suspected.

How the recommendations might affect practice

There may be a reduction in unnecessary procedures because endometrial scratch, and hysteroscopy are sometimes done in current clinical practice.

Return to recommendations

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Endometrial receptivity testing

Recommendation 1.41.1

Why the committee made the recommendation

The evidence showed no difference in clinical pregnancy and live birth rates between gene expression analysis using endometrial receptivity array (ERA)-timed frozen embryo transfer and standard frozen or fresh embryo transfer. There was also evidence that ERA-timed frozen embryo transfer had a lower risk of multiple gestation compared with standard fresh embryo transfer but led to an increased rate of clinical pregnancy loss.

There was no evidence on treatment of endometrial abnormalities related to the microbiome or microbiological analysis, so the committee made a recommendation for research on treatments based on endometrial receptivity testing.

How the recommendation might affect practice

The recommendation will decrease the use of endometrial receptivity testing.

Return to recommendation

Immunological treatments

Recommendation 1.42.1

Why the committee made the recommendation

Overall, there was no convincing evidence that immunological treatments are effective in improving fertility outcomes, and there are various safety concerns associated with their use. The committee agreed that they should not be used as part of fertility treatment.

The evidence on intralipids was inconclusive and studies had a high risk of bias. One RCT showed an increase in live birth rate in the intralipids arm, the other studies showed no important difference between groups either for live birth or for miscarriage rates. The committee also discussed the risks of intralipid use, including the potential for congenital malformations, common, minor side effects (such as headache and nausea), and rarer,

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more serious side effects (such as bone pain and muscle weakness). The committee agreed that the existing evidence does not justify its use.

The evidence on intravenous immunoglobulins (IVIG) came from small studies and showed no effect on live birth or miscarriage rates. In addition, there are potential safety concerns, including risks associated with any blood products as well as common side effects such as headache and muscle pain, and more serious adverse events such as thrombosis and kidney failure. The committee noted that IVIG is an invasive and expensive treatment, and agreed that the existing effectiveness evidence and potential risks do not justify its use.

In terms of steroids (glucocorticoids), there was poor-quality evidence that showed some mixed findings, but overall did not find steroids to have an effect on fertility outcomes, including live birth, clinical pregnancy and miscarriage. Some of the studies showed a benefit of steroids for live birth and miscarriage rates but others showed no difference between groups who received steroids or no steroids for these outcomes. The committee discussed the significant safety concerns associated with the use of steroids, most importantly that they suppress the immune system, which puts patients at risk of infections, and other side effects. Due to the lack of convincing evidence of effectiveness and serious safety concerns, the committee agreed that steroids should not be used as part of fertility treatment.

How the recommendation might affect practice

The recommendation will reinforce current best practice.

Return to recommendation

Embryo selection strategies

Recommendation 1.48.1

Why the committee made the recommendation

Pre-implantation genetic testing for aneuploidy (PGT-A)

Evidence on the effectiveness of pre-implantation genetic testing for aneuploidy (PGT-A) on improving live birth rates was inconclusive and there are potential risks associated with

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its use. PGT-A has the potential to reduce the number of viable embryos available for transfer, which can mean that embryo transfer cannot take place in that IVF cycle. Emerging evidence shows a potential benefit of PGT-A in terms of reducing miscarriage; however, there are still significant uncertainties around PGT-A's overall effectiveness for improving live birth and pregnancy rates. Based on the evidence, the committee agreed that PGT-A should not be offered as part of fertility treatment to improve live birth rates.

Time-lapse imaging

Evidence on embryo selection using time-lapse imaging compared with conventional embryo selection showed no benefit on ongoing pregnancy, clinical pregnancy or live birth. The evidence for all outcomes was of very low certainty. The committee were also aware of a 2024 randomised controlled trial (RCT) that showed no important difference in live birth rates for time-lapse imaging compared with standard care. Although the committee agreed that current evidence does not show embryo selection using time-lapse imaging to be better than conventional embryo selection, time-lapse systems may have other benefits, including undisturbed incubation, and more research is needed to understand the full potential of these technologies.

The committee did not make a recommendation about the use of time-lapse imaging for embryo selection because there is no evidence of clinical benefit relative to conventional embryo selection. However, the committee did not want to preclude the use of time-lapse imaging because these systems are widely used and may have benefits in terms of incubation, such as providing a more stable environment than conventional systems, even if benefits in terms of embryo selection are less clear. The committee agreed that further research would be needed but that it would be premature to draft a fully specified and implementable research recommendation that would be able to deliver conclusive results about the potential benefits of time-lapse imaging for embryo selection.

How the recommendation might affect practice

The recommendation on PGT-A should reinforce current best practice. Time-lapse systems are used in practice. No recommendation was made on time-lapse imaging for embryo selection and this should not have an impact on current practice.

Return to recommendation

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Intracytoplasmic sperm injection

Recommendations 1.50.1 to 1.50.5

Why the committee made the recommendations

The committee made recommendations based on their knowledge, experience and current best practice because the original 2004 recommendation on indications for ICSI was outdated and no longer helpful.

The committee reviewed evidence on the effectiveness of ICSI for non-male factor fertility problems. The evidence showed that ICSI does not have an impact on live birth rates, clinical pregnancy rates or any other outcomes. The committee agreed that ICSI should not be used for non-male factor fertility problems. However, in line with the original 2004 recommendation on ICSI, the committee agreed that ICSI could be considered if previous standard IVF cycles have resulted in failed or very poor fertilisation.

There was insufficient evidence on the effectiveness of intracytoplasmic morphologically selected sperm injection (IMSI) as an adjunct to ICSI in terms of improving live birth rate compared with standard ICSI, so the committee agreed that it should not be used, because it is unlikely to provide any benefit over standard ICSI.

Evidence on physiological intracytoplasmic sperm injection (PICSI) showed no difference in rate of live births when compared with standard ICSI, therefore the committee agreed that it should not be used.

How the recommendations might affect practice

The recommendations will decrease the use of ICSI for non-male factor fertility problems and could therefore result in cost savings.

The recommendations on IMSI and PICSI should reinforce current best practice.

Return to recommendation

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Fertility preservation for medical indications

Recommendations 1.53.1, and 1.53.5 to 1.53.8

Why the committee made the recommendations

The 2013 guideline recommendations on fertility preservation only covered people with cancer who wish to preserve their fertility. For the 2025 update, the population was expanded to cover anyone with a medical indication likely to impair their reproductive potential, including medical or surgical treatments or medical conditions. Most of the evidence was among people with cancer; however, there was evidence that fertility preservation can be successful for other medical indications. While the need for fertility preservation often arises in the context of planned gonadotoxic cancer treatment, the committee acknowledged that numerous other medical conditions and medical or surgical interventions may lead to a high risk of fertility problems. The committee agreed that fertility preservation should be discussed as an option for anyone with an appropriate medical indication. In some cases, the need for treatments that will impact fertility is urgent, so it is important that discussions around preserving fertility are held at the earliest opportunity.

Cryopreservation of sperm is established practice and supported by evidence, but cryopreservation of testicular tissue is still experimental and very limited evidence was available. This is particularly relevant for boys before and during puberty. Therefore, the committee made a recommendation for research about testicular tissue cryopreservation among prepubertal and peripubertal boys undergoing treatment for cancer or other conditions, or in situations that are likely to impair their fertility.

The committee also reviewed the evidence on oocyte and embryo cryopreservation and ovarian tissue cryopreservation. Given the larger evidence base, higher live birth and clinical pregnancy rates, and more established retrieval procedures, the committee agreed that oocyte or embryo cryopreservation should be offered for medical indications. The evidence on ovarian tissue retrieval and cryopreservation was more limited but showed it is feasible and effective. There is also NICE interventional procedures guidance about this. This option is particularly relevant for girls before puberty, when oocyte and embryo retrieval would not be possible.

Consent to store cryopreserved material must be renewed with the person every 10 years for storage to lawfully continue. In addition to the legal requirement, the committee

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emphasised the importance of more robust follow-up procedures to discuss the need for continued storage. Balancing considerations such as minimising unnecessary storage time, the resources needed to organise follow-ups, and risk of losing touch with people, the committee agreed follow-ups at least every 5 years would be reasonable but leaving flexibility.

How the recommendations might affect practice

There may be some variation in the provision of NHS-funded fertility preservation for the range of medical indications, but the recommendations broadly reflect current practice and therefore are not expected to result in a significant resource impact for the NHS. The recommendation on regular follow-ups could have some resource implications but ultimately could lead to cost savings as unnecessary storage would be avoided.

Return to recommendations

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Finding more information and committee details

To find NICE guidance on related topics, including guidance in development, see the NICE webpage on fertility, pregnancy and childbirth.

For full details of the evidence and the guideline committee's discussions, see the evidence reviews. You can also find information about how the guideline was developed, including details of the committee.

NICE has produced tools and resources to help you put this guideline into practice. For general help and advice on putting NICE guidelines into practice see resources to help you put NICE guidance into practice.

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Update information

March 2026: This guideline partially updates and replaces NICE guideline CG156 (published 2013). We have removed the recommendations on hypothalamic-pituitary-ovarian dysfunction (predominantly PCOS) because NICE is developing a guideline on polycystic ovary syndrome (PCOS). For more information, see the guideline's development page on the NICE website.

Recommendations are marked **[2026]** if the evidence has been reviewed.

We have also made some changes without an evidence review. These are marked **[2004, amended 2026]** or **[2013, amended 2026]**.

Recommendations labelled **[2004]** or **[2013]** last had an evidence review in 2004 or 2013, respectively.

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