

# MALE INFERTILITY

## DIAGNOSIS AND MANAGEMENT

## CLINICAL SUMMARY GUIDE

### The GP's role

- Do not wait before beginning assessments
- GPs can begin with simple, inexpensive and minimally invasive investigations
- Infertility needs to be assessed and managed as a couple, and may require several different specialists

### Diagnosis

#### Brief assessment and pre-pregnancy advice

Age .....	What age is the couple?
Fertility history .....	How long have they been trying to conceive, and have they ever conceived previously (together/separately)? Do they have any idea why they have not been able to conceive?
Contraception .....	When it was ceased, and the likely speed of its reversibility
Fertile times .....	Whether the couple engage in regular intercourse during fertile times
Female risk factors .....	Aged 35+, irregular menstrual cycles, obesity, painful menses, or concomitant medical conditions
Female health .....	Screening for rubella and chicken pox immunity, papsmear
Lifestyle: female .....	Diet, exercise, alcohol, smoking cessation and folate supplementation
Lifestyle: male .....	Smoking cessation

#### Reproductive history

##### Assess the male for:

- Prior paternity .....
- Psychosexual issues (erectile, ejaculatory) .....
- Pubertal development .....
- A history of undescended testes .....
- Previous genital infection (STI) or trauma .....
- Symptoms of androgen deficiency (AD) .....
- Previous inguinal, genital or pelvic surgery .....
- Medications, drug use .....
- General health (diet, exercise, smoking) .....

##### Why?

- Previous fertility
- Interference with conception
- Poor progression suggests underlying reproductive issue
- Risk factor for infertility and testis cancer
- Risk for testis damage or obstructive azoospermia
- Indicative of hypogonadism
- Testicular vascular impairments, damage to vasa, ejaculatory ducts, ejaculation mechanisms
- Transient or permanent damage to spermatogenesis
- Possible effect on fertility

#### Physical examination

##### GENERAL EXAMINATION

Acute/chronic illness, nutritional status

##### GENITAL EXAMINATION

↓ Refer to Clinical Summary Guide 1

##### DEGREE OF VIRILISATION

Androgen Deficiency / Klinefelter's Syndrome

##### PROSTATE EXAMINATION

If history suggests prostatitis/STI

##### Testes

Small testes suggest spermatogenic failure

##### Presence of vas deferens

May be congenitally absent

##### Epididymides

Thickening or cysts may suggest previous infection and resultant obstructive problems

##### Varicoceles

Detected when standing, coughing or performing Valsalva maneuver

##### Penis

For abnormalities (e.g. Peyronie's) that may interfere with intercourse

## Investigations

**Semen analysis:** is the primary investigation for male infertility.

Key points:

- Men should abstain from sexual activity for 2–5 days before sample collection
- Two semen analyses should be performed at 6 week intervals. In men whose initial test is poor, the second test should ideally be performed in a specialised laboratory
- **Semen analysis provides guidance to fertility; it is not a direct test of fertility.** Fertility remains possible even in those with severe deficits

### Normal ranges for semen analysis (modified WHO, 2010)

Volume	≥1.5mL
pH	≥7.2
Sperm concentration	≥15 million spermatozoa/mL
Motility	≥40% motile within 60min of ejaculation
Vitality	≥58% or more live, i.e. excluding dye
White blood cells	<1 million/mL
Sperm antibodies	<50% motile sperm with binding

### Serum total testosterone:

- Testosterone is often normal 8–27nmol/L\*, even in men with significant spermatogenic defects
- Some men with severe testicular problems display a fall in testosterone levels and rise in serum LH, these men should undergo evaluation for AD
- The finding of low serum testosterone and low LH suggests a hypothalamic-pituitary problem e.g. prolactinoma (serum prolactin levels required)

\* Testosterone reference range may vary between laboratories

### Serum FSH levels:

- Elevated levels are seen when spermatogenesis is poor (primary testicular failure)
- Normal men the upper reference value is approximately 8IU/L
- Azoospermic man:
  - 14IU/L strongly suggests spermatogenic failure
  - 5IU/L suggests obstructive azoospermia but a testis biopsy may be required to confirm that diagnosis

### Specialised tests:

➔ Refer to Clinical Comprehensive Guide: Male Infertility

## Management

### Treatment options

**Protecting and preserving fertility:** mumps vaccination, sperm cryopreservation (prior to chemotherapy, vasectomy or androgen replacement), safe sex practices, and early surgical correction of undescended testes.

**Options for improving natural fertility:** exist for a minority of infertile men, including those with pituitary hormonal deficiency or hyperprolactinemia, genitourinary infection, erectile and psychosexual problems, and through the withdrawal of drugs. Evidence for varicocele removal to improve fertility is lacking.

**Assisted reproductive technologies (ART):** ART options range in cost and invasiveness:

- artificial insemination with men's sperm at midcycle
- conventional IVF
- intracytoplasmic sperm injection (ICSI) for severe male factor problems. Sperm can be readily obtained by testicular needle aspiration in the setting of obstructive azoospermia. Some azoospermic men with spermatogenic failure may have sperm recovered for ICSI from a testicular biopsy.

**Donor insemination:** for men with complete failure of sperm production.

### Specialist referral and long-term management

#### When should I refer a patient to a specialist?

GPs can refer couples immediately or after a few months during which baseline tests are performed

#### Referral to specialists will depend on the associated problem

- Endocrinologist (endocrine associated problems)
- Urologist (undescended testes, surgery)
- Fertility specialist/ART clinic

#### Long-term management

of the infertile man includes assessing for late onset androgen deficiency, testis cancer

**Fertility Clinics:** a list of Australian ART Clinics, accredited by the Reproductive Technology Accreditation Committee are available via the Fertility Society of Australia website [www.fertilitysociety.com.au/patients-information/](http://www.fertilitysociety.com.au/patients-information/)

**Supporting the couple:** Acknowledge both partners' experience of infertility, and encourage couple communication  
Provide empathy and normalise feelings of grief and loss  
Refer on to a psychologist or counsellor if the couple require further support