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# The HEALTHY MALE

Newsletter of Andrology Australia - Australian Centre of Excellence in Male Reproductive Health

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## Andrology

An-drol'-uh-jee

The study of the functions and diseases peculiar to males, especially of the reproductive organs

## >> FROM THE DIRECTOR

Welcome to the first edition of "The Healthy Male," the newsletter of Andrology Australia (The Australian Centre of Excellence in Male Reproductive Health).

Each quarter Andrology Australia promises to provide updates on its various projects and people. This newsletter will include information on the educational activities, research projects, and upcoming events of the Centre. When appropriate it will comment on topical issues that have been reported in the media.

"The Healthy Male" will seek to educate its readers on different aspects of men's reproductive health.

Each edition will focus on a different priority area of the Centre. Thus we hope it will form a cumulative reference tool.

Male infertility is the subject for this quarter.

Thank you for your interest in Andrology Australia. We hope you enjoy this newsletter.



## Introducing ANDROLOGY AUSTRALIA

In December 1999 the Federal Health Minister, Dr Michael Wooldridge launched the Australian Centre of Excellence in Male Reproductive Health. In a world first this "centre without walls" brought together health and education experts from around Australia with the sole purpose of improving and promoting men's reproductive health.

Early this year the Centre was given the abbreviated title of Andrology Australia.

### What is Andrology?

Andrology is the study of the functions and diseases of the male reproductive organs or the male equivalent of gynaecology. It is an internationally recognised medical specialty with the International Society of Andrology being established in 1981.

Although the term is unfamiliar to many, it is an ideal title for an organisation dedicated to male reproductive health.

Through its work to increase awareness and understanding of male reproductive health, Andrology Australia will help define this term.

Andrology Australia strives to ensure that there are no neglected components of male reproductive health and aims to address in a national program the broader behavioural, social and cultural issues which impact on the reproductive health of Australian men.

## MISSION STATEMENT

**Andrology Australia (The Australian Centre of Excellence in Male Reproductive Health) will undertake those measures that will enhance the reproductive health of males including community and professional education and research.**

### Priority areas of Andrology Australia include:

- > Prostate disease including prostate cancer
- > Testicular cancer
- > Male infertility
- > Use and abuse of androgens
- > Erectile dysfunction

### Andrology Online



**Andrology Australia** has been established as a result of a need to address the lack of education and understanding throughout Australia on male reproductive health issues. A key element in its educational program is a comprehensive and regularly updated web page. It is an evolving educational tool designed to assist both healthcare professionals and the community as a whole.

An online presence has been identified as an important medium to communicate valid and authenticated information on male reproductive health to the Australian community.

The information at [www.andrologyaustralia.org](http://www.andrologyaustralia.org) is intended to be educational in nature, to improve understanding and knowledge of the range, causes and treatment options of male reproductive health disorders.

By allowing both doctors and patients access to a source of up-to-date and accurate information it is hoped to foster a shared approach to prevention and treatment.

#### Features of the site include:

- > High quality information. Material has been written by a team of internationally recognised experts in male reproductive health issues in a style that is easily digestible
- > Reference material on the 'healthy' male reproductive system
- > Information on the causes, diagnosis and treatment options of prostate disease including prostate cancer; testicular cancer; erectile dysfunction or impotence; male infertility and androgen deficiency
- > Brochures in .pdf file format that can be printed and taken to the doctor or passed onto a friend or family member
- > Comprehensive glossary of key medical terms
- > Links to other appropriate health sites which provide users with details of support organisations and professional bodies

[www.andrologyaustralia.org](http://www.andrologyaustralia.org)

## >> RESEARCH ROUNDUP

### Identifying Genetic Causes of Male Infertility

One of the biggest problems confronting the clinician managing male infertility is the absence of a specific cause. In approximately 40% of infertile men there is no known cause of the problem which may include low sperm counts, poor motility and/or a very high percentage of abnormally shaped sperm. Evidence exists to show that a significant number of such men have genetic disorders causing their infertility.

Recognition of the specific causes of infertility is important, as in due course, it may lead to new therapies. It may also circumvent the passing on of these genetic disorders to sons conceived using assisted reproductive techniques.

Monash Institute of Reproduction and Development, in association with the Royal Women's Hospital, has established a repository containing DNA from patients with a variety of infertility disorders to provide a resource for

investigators to identify genetic causes of male infertility. This database has proved useful in collaborative studies with colleagues in North America in the identification of patients with Y chromosome deletions. (Najmabadi et al 1996)<sup>1</sup>

As medical research continues it is likely that genetic causes of infertility will explain large numbers of sperm production disorders now classified as unknown.

Andrology Australia has provided support for the ongoing development of the DNA repository.

<sup>1</sup> Najmabadi et al 1996: Substantial prevalence of microdeletions of the Y chromosome in infertile men with idiopathic azoospermia and oligospermia detected using a sequence-tagged site-based mapping strategy. *Journal Clinical Endocrinology Metab.* 81, 1347-1352

For more information regarding the DNA Repository database contact: [Moir.Obryan@med.monash.edu.au](mailto:Moir.Obryan@med.monash.edu.au)

# Focus on MALE INFERTILITY

AUTHOR: PROFESSOR DAVID DE KRETZER, AO

## What is male infertility?

Infertility is defined as the failure to achieve a pregnancy after one year of regular (at least twice weekly) unprotected intercourse with the same partner. Both partners should be evaluated for infertility to identify if the problem lies with the male partner.

## How many men are affected with male infertility?

In Australia, it is estimated that male infertility affects about one man in 20, and is the underlying reason for 40% of infertile couples using assisted reproduction.

## What causes male infertility?

The known causes of male infertility can be subdivided into four areas:

**1. Sperm production problems:** Disruption to the production of sperm occurs in 60% of patients with a diagnosed cause of infertility. It can be due to undescended testes, infections such as mumps, heat, sperm antibodies, torsion, varicocele, drugs or radiation damage.

**2. Blockage of sperm transport:** Sperm from the testis must pass through the epididymis and vas deferens on their journey to the ejaculate. Blockage, or obstruction, of sperm transport from the testis can cause a zero sperm count, even though the testis continues to produce sperm.

**3. Erection and ejaculation problems:** In about 5% of couples, infertility may be caused by problems relating to ejaculation or intercourse. Nerve damage following spinal cord injury, diabetes or surgery to the prostate or pelvis can prevent erection and ejaculation. Some drugs to treat depression or high blood pressure may cause erection and ejaculation problems.

**4. Hormonal problems:** Known as endocrine causes of male infertility these involve the failure of the pituitary gland at the base of the brain to stimulate the testis. These disorders are relatively rare affecting approximately 1 in 100 patients.

There are still gaps in our knowledge and for 40% of men with infertility, the cause of the problem is unknown. This is referred to as 'idiopathic infertility' or 'cause unknown.'

## Can male infertility be prevented?

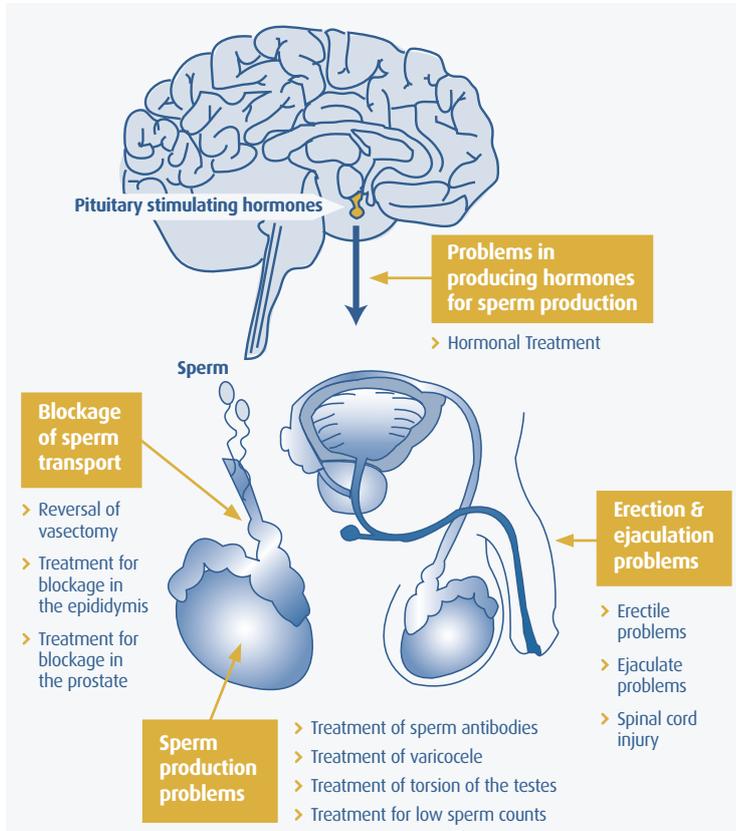
Some reports suggest that cigarette smoking, excessive use of alcohol, sexually transmitted diseases and heat stress from tight fitting underwear may be harmful to sperm production. These issues should be considered when attempting to achieve pregnancy.

## How is it diagnosed?

Diagnosis can involve a physical examination, analysis of semen, urine and the hormone levels in blood. Genetic investigations and testicular biopsies are sometimes required. A thorough diagnosis is important to identify if the cause of the problem is treatable.

## What treatments are available?

A range of treatments are available to treat specific causes of male infertility. Blockages of sperm transport are often treated with surgery. Men with low hormone levels causing infertility can be treated with medication. Assisted reproduction, particularly sperm injection into eggs (intracytoplasmic sperm injection) is an alternative approach for men with very low sperm counts that can't be treated in any other way.



**For 40% of men with infertility, the cause of the problem is unknown**



**Professor David M de Kretser**  
AO, MBBS, MD, FRACP, FAA

Professor David M de Kretser is an Endocrinologist and Director of the Monash Institute of Reproduction and Development at Monash University, located in Melbourne, Victoria. He has experience in the fields of reproductive endocrinology and male infertility. In addition to his University and research roles, he continues to practise and is recognised in the medical community as a world expert in men's reproductive health and has received numerous accolades from many international scientific groups.

In December 1999, the Federal Minister for Health and Aged Care, The Honourable Dr Michael Wooldridge also recognised Professor de Kretser's leading role in men's health when he appointed him to head the new federally funded \$4 million initiative, Andrology Australia, The Australian Centre of Excellence in Male Reproductive Health.

Professor de Kretser is a Fellow of the Royal Australasian College of Physicians and in 1996 was elected a Fellow of the Australian Academy of Science. In 1998 he was acknowledged by the Committee for Melbourne with an Achiever Award for Advancing Melbourne's Global Connections. In 2000, he was awarded an Order of Australia in the Australia Day Honours in recognition of his significant contribution to medical science as a researcher, educator and university administrator. In 2001 he was honoured with the title of Victorian Father of the Year.

## Good News for ICSI Offspring

Intracytoplasmic sperm injection (ICSI) is a technique where a single sperm is injected into the egg by piercing the shell of the egg. This technique can achieve pregnancies even when only a few sperm can be found in the ejaculate. The sperm are collected from the ejaculate of the man or alternatively in lower numbers from the testis from a biopsy. It is commonly used to overcome problems of male infertility.

Until recently there was concern that these sperm may carry genetic defects which would "normally" have prevented fertilization. Thus defective genes may be passed to the offspring. Furthermore there were fears that the injection process may damage the genetic structure of the egg or sperm.

A recent study published in The Lancet (Sutcliffe et al 2001)<sup>1</sup> in June of this year indicates that there is no evidence of serious neurodevelopmental problems stemming from ICSI.

A research team at the Royal Free Hospital in London checked the mental development of 208 babies, approximately 17 months old, of whom half were ICSI babies. The babies born as a result of ICSI scored equally with the naturally conceived children. Unfortunately there were only small numbers in this study for the analysis of congenital anomalies by sperm abnormality. However indications are that there were significantly higher rates of congenital anomalies in children conceived to men with low sperm counts than in children conceived to fathers who had other indications for ICSI.

It is acknowledged that the results are far from conclusive. A much larger group of children must be examined over a longer period of time before it can be concluded that ICSI babies are developmentally normal.

Further studies of ICSI children are underway and will be completed by late 2002.



<sup>1</sup> Sutcliffe et al 2001. Outcome in the second year of life after in-vitro fertilization by intracytoplasmic sperm injection: a UK case-control study. The Lancet 357, 2080-2084.



### Newsletter of Andrology Australia

Australian Centre of Excellence in Male Reproductive Health

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