

Windows of opportunity: a holistic approach to men's health*

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There is increasing evidence of strong associations between male reproductive health disorders and chronic disease, with suggestions that male reproductive health problems coexist with, or represent a marker for, other common conditions.¹ Since one in three Australian men over 40 years of age report a reproductive health disorder,² potential windows of opportunity exist for achieving a comprehensive approach to men's health that includes discussion and health assessments that are not limited to the presenting complaint.

When a man presents with erectile problems, a thorough clinical history, physical examination and routine investigations may detect underlying cardiometabolic disorders that are additional risk factors for coronary heart disease.¹ Conversely, if a man presents with diabetes mellitus, discussion about erectile problems³ may identify where additional treatment (eg, phosphodiesterase-5 inhibitors) and support (eg, referral for counselling⁴) may be appropriate.

If the general health implications of reproductive disorders (or the reproductive implications of medical conditions) are not appreciated by health professionals or the wider community, they are not investigated. In the absence of a complete medical evaluation, treatment will not be directed by diagnosis, nor will proper evaluation of its outcome be possible. As a result, men may miss out on prevention advice and effective treatments that could improve their general health, and, ultimately, their relationships and quality of life.

Male reproductive health and heart disease

Erectile dysfunction (ED) is still under-recognised as a significant early warning sign for cardiovascular disease in apparently healthy men,⁵ as well as those with diabetes.⁶ Men with ED aged 55 years or over have a 50% greater risk of developing cardiovascular disease than men without ED,⁵ and a recent Australian study of men aged 20 years or older reported a more than twofold higher incidence of atherosclerotic cardiovascular events in men with ED compared with men in the general population.⁷ Moreover, the higher risk conferred by ED is much greater in younger men and declines with age, as demonstrated in recent studies from both the United States⁸ and Australia.⁷ This is a powerful message to potentially motivate men, not only to seek help when first experiencing ED so that they might access effective treatments and possibly prevent progression, but, more importantly, to pursue the opportunity for early identification and intervention to prevent cardiovascular events.^{9,10}

Studies suggest that the degree of risk for a cardiovascular event after developing ED is similar to that due to being a current smoker or having a family history of ischaemic heart disease.⁵ In a cohort of men with diabetes and silent coronary artery disease, ED was a more powerful predictor of a cardiac event than smoking or an adverse lipid profile.⁶ It has also been shown that within a year of the first significant episode of ED in men aged 55 years or over, 2% had a major stroke or heart attack, and within 5 years, 11%.⁵ The

ABSTRACT

- Evidence is accruing of associations between male reproductive health disorders and chronic diseases such as coronary heart disease and type 2 diabetes.
- The links between reproductive health and general health are under-recognised by medical practitioners and the general public.
- Windows of opportunity exist for a more holistic approach to men's health when men present with reproductive health symptoms (such as erectile dysfunction) or the reproductive implications of chronic disease are recognised.
- Further men's health research is needed in Australia to guide policy, innovative health promotion, and clinical practice.

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failure of men to seek advice regarding ED¹¹ means that they may be missing a vital warning of impending cardiovascular disease.

Male reproductive health, diabetes and obesity

For men diagnosed with diabetes, prevalence estimates of ED range from 34% to 89%.^{12,13} ED in diabetes is primarily attributable to neurovascular dysfunction, exacerbated in some cases by drug effects and, occasionally, concomitant androgen deficiency. Conversely, ED may be the presenting symptom in men with undiagnosed diabetes,¹⁴ so glucose testing is warranted as an integral part of ED evaluation.

Men with type 2 diabetes frequently have lower total testosterone levels than euglycaemic men of a similar age,^{15,16} and hypoandrogenism (ie, reduced testosterone production, although spermatogenic function may remain intact) has been documented in about one in three men with type 2 diabetes.¹⁵ This relationship is likely to be mediated in part by obesity; however, testosterone levels remain lower after controlling for body mass index¹⁷ and are negatively correlated with insulin resistance.¹⁶

Preliminary studies suggest that testosterone therapy may improve glycaemic control and reduce insulin resistance in men with type 2 diabetes and functional androgen deficiency, but this requires confirmation from better designed studies and long-term follow-up data, particularly with respect to cardiovascular outcomes.¹⁸

In men, a bidirectional relationship appears to exist between obesity and testosterone. Obese men have lower total (and, to a lesser degree, free) testosterone levels than their non-obese peers,¹⁹ and the impact of adiposity appears to be at least as important as that of ageing. Weight loss in severely obese men increases testosterone levels,²⁰ but the effects of moderate weight loss in mild to moderate obesity are not well described. Exogenous testosterone reduces total body fat in hypogonadal and ageing men²¹ and may reduce²² or prevent²³ accumulation of visceral fat. However, lifestyle advice aimed at achieving sustained weight loss remains the mainstay of management of obesity in men without proven androgen deficiency.

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The metabolic syndrome and its components (including abdominal adiposity, dyslipidaemia, elevated blood pressure and insulin resistance), as well as sleep apnoea, have been associated with lower testosterone levels, but the related benefits of testosterone supplementation have not been established.^{24,25}

Male infertility and broader men's health conditions

In about half of couples presenting for assisted reproductive treatment (ART), male infertility is one, or the only, contributing factor.²⁶ The development of new technologies, such as intracytoplasmic sperm injection (ICSI), allows fatherhood for previously sterile men. However, ICSI represents a "bypass procedure", not a treatment to restore fertility. Importantly, the "ICSI revolution" must not lead ART clinicians to consider infertile men simply in terms of whether motile sperm are available. The physician has a duty of care to make a diagnosis and restore natural fertility when possible, to identify coexistent diseases prevalent in infertile men (eg, androgen deficiency, pituitary tumour, testicular cancer, psychosexual dysfunction) and to engage couples in discussion of the safety of ART and the health of offspring.

Notably, one in eight infertile men has evidence of androgen deficiency, usually due to primary testicular disease.²⁷ Klinefelter syndrome (found in about 1 in 600 men) is often diagnosed during evaluation of azoospermia when small testes (< 4 mL) are apparent. As such a striking examination finding could not readily be overlooked, it follows that genital examination is not usually being conducted as part of physical examination in routine health practice. Hence, most men with Klinefelter syndrome, unless presenting with infertility, are never diagnosed²⁸ and thus do not receive testosterone therapy or have their other specific biopsychosocial health needs met.

Other disorders affecting health more broadly that present with infertility or androgen deficiency include gonadotrophin deficiency due to unrecognised pituitary tumours, gonadotrophin-releasing hormone deficiency (eg, Kallmann syndrome), haemochromatosis, and opiate or anabolic steroid misuse. Increased risk of osteoporosis in men with untreated long-term androgen deficiency²⁹ also necessitates more thorough investigation of men presenting with infertility. Those with infertility and a history of undescended testis, even after childhood orchidopexy, are at increased risk of testicular cancer,^{30,31} making assessment by physical examination and ultrasound essential. While recognising that changing health behaviour is difficult, the fact that lifestyle factors such as obesity, smoking and drug use may reduce semen quality and sexual activity provides a window of opportunity for engaging men in a health care plan that aims to improve natural fertility and enhance health within the family life to which they aspire.

Male reproductive health and psychological wellbeing

Living with a reproductive health problem such as infertility, prostate disease or ED can affect men psychologically as well as physically. Relationships can suffer, quality of life can be reduced and social interactions can be affected.³²⁻³⁴ Several studies have demonstrated increased risk of depression in men with erectile dysfunction.³⁴⁻³⁶ Emerging evidence also suggests that depression (depressive symptoms and medication use for depression) is consistently associated with a range of male reproductive health disorders.³⁷

It is important that doctors providing treatment also provide information or refer men to services that will assist them to cope with the distress felt when experiencing sexual and reproductive health problems. In some instances, treatment and recovery may be delayed by failing to deal with the psychological element of the condition. Involving the man's partner in these discussions can be helpful,³⁸ while some men find it helpful to attend support groups to talk with others experiencing similar problems.

Creating windows of opportunity for comprehensive men's health assessment

While men express high levels of concern about their reproductive health, many do not seek medical advice for reproductive health conditions due to a range of factors (eg, residing in a rural area) that create barriers to discussion of sensitive and personal health concerns during medical consultations.¹¹ Such barriers may lead some men to explore alternative ways to self-manage their reproductive health problems, such as the purchase of medication over the internet, where the need for a full medical consultation is avoided. Not only is the opportunity for a comprehensive health assessment missed, the consumer is often unable to identify legitimate and authoritative sources and is in danger of purchasing contaminated or ineffective medications.³⁹

Normalising reproductive health and raising awareness of its associations with chronic disease may encourage men to seek help or pay more attention to other problems (eg, management of diabetes). Encouraging men to seek proper medical evaluation is essential to maximising the window of opportunity for comprehensive health assessment and avoiding experiences that only focus on treatment. Innovative health promotion campaigns could test such concepts further.

Education for health professionals can help to ensure that reproductive health is considered a key part of men's overall health and quality of life, opportunities are maximised, and effective strategies for engaging men are incorporated into routine practice.⁴⁰ Windows of opportunity will best arise in the context of holistic medical practice, when the patient's physical and emotional needs are met. If such care is not provided, men may seek assistance from heavily promoted and commercialised services.⁴¹ A narrow focus on treatment options for reproductive disorders, without attending to potentially serious comorbidities, can close down the elusive window.

Improving community and professional awareness of the links between male reproductive health, more serious health problems and quality of life has the potential to create supportive environments in which men may be more likely to seek health advice. The availability of quality, unbiased and evidence-based information is essential to improving men's understanding of health issues and to helping them make decisions; firstly to seek help and then to choose an appropriate form of treatment. Such educational initiatives must tailor activities and resources to men of different ages, sexual orientation, or religious, cultural and socioeconomic backgrounds.

Similarly, it is important that health professional education incorporates strategies to include reproductive health conditions as part of overall men's health assessments, irrespective of age, culture or sexual interests. This assessment should include investigations that allow for early detection and prevention of other more life-threatening conditions.

The renewed commitment by the Australian Government to the development of a National Men's Health Policy is expected, at the very least, to create greater awareness of the need to engage and support men in various aspects of their health, including better use of health services.⁴² Acknowledgement of the importance of male reproductive health needs in the policy background papers⁴³ and continued support of Andrology Australia by the Australian Government Department of Health and Ageing⁴⁴ should create more opportunities for men and health professionals to improve their knowledge of male reproductive health disorders and associated conditions. It is difficult to determine the effectiveness of such health promotion and education initiatives. However, the provision of quality, evidence-based and unbiased information and education programs for the community is an essential first step in improving men's health literacy and supporting men to make informed decisions about their health.⁴⁵ Similarly, such programs can help health professionals to better engage men with respect to more personal and sensitive health concerns.^{40,46}

Finally, despite the growing body of evidence pointing to strong associations between general and reproductive health, a better understanding of the interrelationships between health conditions is still needed. A national longitudinal study of men's health could make a significant contribution to elucidating the intersection of biomedical, psychosocial, social and environmental factors that impact on a man's health and wellbeing across his lifespan.⁴⁷

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Competing interests

None identified.

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