Testosterone, the most important androgen or male sex hormone, is important for reproductive and sexual function, the growth of bones and muscles, and affects mood, sex drive and certain aspects of mental ability. In men, testosterone levels are highest between the ages of 20 to 30 years, but begin to gradually fall from the age of 30. Severe lowering of blood testosterone levels have been associated with an increased likelihood of developing osteoporosis. Whether the gradual lowering of blood testosterone during male ageing is sufficient to warrant testosterone replacement therapy and whether such treatment would be safe, remain controversial. The Dubbo Osteoporosis Epidemiology Study, conducted in NSW, found that the risk of bone fracture is significantly increased in older men with reduced testosterone levels. The study observed 609 men older than 60 years between 1989 and 2005, and found a total of 113 men had sustained at least one low trauma fracture and 25 men had experienced multiple fractures. All of the low trauma fractures (i.e. those probably due to osteoporosis) were associated with a fall from standing height or less and were confirmed by X-ray. Such fractures and immobility during healing may also lower blood testosterone levels.

After taking into account major risk factors such as age, weight, bone mineral density, smoking status and calcium intake, the researchers found the risk of fracture was more than doubled in men with lower testosterone levels compared with men with higher testosterone levels. In addition to directly affecting bone density, testosterone deficiency may reduce muscle mass, thereby decreasing muscle strength and impairing balance, both of which also may increase the likelihood of falls and fractures. However, because the older men in the Dubbo study did not have severely lowered testosterone levels, both the low bone mass and low testosterone levels may be separate consequences of ageing. Such an observational study can’t prove that mild lowering of blood testosterone directly causes bone loss or osteoporotic fractures.

Men with established androgen deficiency due to pituitary or testicular disorders require testosterone replacement therapy to maintain bone and muscle tissue. More research is needed into whether such treatment may prevent bone fracture in older men with borderline normal testosterone levels. Such an observational study can’t prove that mild lowering of blood testosterone directly causes bone loss or osteoporotic fractures.

Low testosterone linked to bone fractures in men

It is important to educate men about osteoporosis and what they can do to reduce their risk of fracture. Having a healthy diet and lifestyle by not smoking and limiting alcohol intake, can reduce the risk of osteoporosis and fracture.

If you are a man who has suffered a fracture or is at risk of osteoporosis, talk to your doctor about having a bone density test.

Professor Rob McLachlan
The first National Aboriginal and Torres Strait Islander Male Researcher gathering was recently held in Alice Springs with support from Andrology Australia, the Office for Aboriginal and Torres Strait Islander Health and the Cooperative Research Centre for Aboriginal Health. The two day meeting aimed to improve the well-being of Indigenous communities throughout Australia by developing a more coordinated approach into Aboriginal and Torres Strait Islander male health research. Currently, many research activities in Indigenous male health are under supported, making it difficult to understand and address health and social well being issues in Indigenous communities.

The gathering was the first forum designed specifically to address current Aboriginal health research programs. It represented a key step in connecting Indigenous men across the country involved in research and service delivery. Over 30 delegates attended the meeting including representatives from Australian research institutions, peak Indigenous bodies, NGO’s, social service providers, government departments and Aboriginal Community Controlled Health Services. Discussion at the meeting identified a need to increase support into Indigenous men’s health research and to develop prevention programs aimed at improving the health of Indigenous men and their communities.

A number of male health research priority areas were established. Furthermore, there was a strong sense that a coordinated research and capacity development approach, defined and led by Indigenous men themselves, offered immense opportunities to enhance the well-being of Indigenous communities more broadly. To progress the identified research priorities, an outcome from the meeting was that a research network for Indigenous males engaged in service delivery and research will be developed. The aim of the network is to ensure that structured and sustainable research activities are conducted.

The success of this meeting highlights the ongoing need for opportunities for Indigenous researchers and service providers to meet on a regular basis, and this network will be established more formally over the coming years.

Andrology Australia Ambassador Merv Hughes recently spent two days in Mudgee to promote awareness of men’s health and Andrology Australia. Merv’s visit, organised by the Mudgee Health Service, also helped raise money to put towards building a local Men’s Shed.

As part of the visit, Merv enjoyed breakfast with the Men’s Shed Committee and spoke to 300 men at the Ulan coal mine about the importance of maintaining a healthy lifestyle.

During the visit, Merv got the opportunity to meet MERV- the Men’s Educational Rural Van- that travels to workplace and community sites around Mudgee providing health information to men.

Merv also visited Stoddart’s joinery for a workplace lunch and spoke to 300 men at the Ulan coal mine about the importance of maintaining a healthy lifestyle.

A dinner held specifically to raise money for the Men’s Shed had sports commentator Ken Sutcliffe as MC, and Merv as guest speaker. The dinner raised $44,000 for the shed, with a $16,000 contribution from Ulan coal mine and $10,000 from Mudgee Trades Day Committee.

The visit also coincided with the annual Men’s Health Challenge Cup, a golf tournament aimed to raise awareness of prostate cancer and depression. Players teed off as part of either the ‘Prostates’ team or the ‘Depressed’ team, and the Cup was won by the Prostates for the second year running. Andrology Australia is happy to support such great men’s health initiatives through the provision of Ambassador Merv Hughes and looks forward to working with other community groups to raise awareness of men’s health.

Inaugural meeting to improve Indigenous health research

Delegates at the National Aboriginal and Torres Strait Islander Male Researcher gathering in Alice Springs
Focus on: Osteoporosis in men
Author: Prof. Peter Ebeling, Osteoporosis Australia

What is osteoporosis?
Osteoporosis is a disease usually affecting older women and men. It is a disorder of the skeleton that lessens bone strength, which increases the risk of fracture. Bone strength is measured by bone mineral density and bone quality. Most bones except those of the face and head can be affected by osteoporosis, but the most common sites of fractures are the hip, spine, wrist and ribs. Osteoporosis (bone loss) is often called the ‘silent disease’ because it arises without symptoms.

How common is it?
One in three men in Australia over 60 will suffer a fracture due to osteoporosis1. The disease affects more women than men however, when fractures happen in men it is more likely to shorten their lifespan. This shorter lifespan is probably because osteoporosis in men is often present together with other serious illnesses.

How does osteoporosis happen?
Osteoporosis happens when bones lose minerals, such as calcium, more quickly than the body can replace them (increased bone turnover) leading to a loss of bone thickness (bone mass or density). As a result, bones become thinner and less solid, so that even a minor bump or accident can cause serious fractures.

Do all men have a higher risk of developing osteoporosis as they age?
In men and women over the age of 65, the intestine cannot absorb calcium from food as well as in youth. A hormone known as the parathyroid hormone from the parathyroid glands in the neck is produced at a higher rate and makes the bones give up their calcium into the blood stream. This hormone increases in production with age and makes the bones lose more calcium to become thinner. Taking calcium tablets to increase the amount absorbed from the intestine may help older people reduce bone loss.

At what age in men does bone mass begin to fall?
In most people, bone mass starts to fall after about the age of 30. When bone mass begins to fall, it is more gradual in men than women. Women generally have less bone mass than men and women’s bones lose calcium and other minerals at a much faster rate after menopause due to a decrease in their oestrogen levels.

What causes osteoporosis in men?
Testosterone, the male sex hormone, is important for the normal health of a range of body functions including the development and maintenance of bone mass. In some men, low testosterone levels may cause bone thinning, a decrease of muscle mass and increase the rate of bone turnover so bones become less solid. Men with proven (clinically confirmed) low testosterone levels (testosterone deficiency) are therefore more likely to have bone fractures compared to men with normal testosterone levels. However, low testosterone levels are not the only cause of osteoporosis in men, and a range of factors including genetic factors, can have a strong influence on bone mass.

What other hormones can cause osteoporosis?
The female hormone oestrogen is present in much lower amounts in men than in women, but is important to a man’s health. In men and women, oestrogen controls bone turnover and in men may be important for peak bone mass. Peak bone mass is when bones are at their strongest, normally in men at about 20-30 years of age. Lack of oestrogen in men is likely to reduce bone formation, which leads to a decrease in bone mass. This can still happen in men with normal levels of testosterone.

Can trauma and excessive exercise cause osteoporosis in men?
Some osteoporosis in men is caused by trauma linked to excessive exercise and poor nutrition, which results in low levels of male sex hormones. Too much exercise can put bones under a high level of stress, causing bones to fracture easily. However, for most men regular physical activity has been found to reduce the risk of fractures when they are older by improving muscle mass, balance and bone strength2. Men who do little or no exercise should speak to their doctor first about an appropriate exercise plan to minimise their risk of injury.

What are the major risk factors that can lead to osteoporosis in men?
Some men are more likely to develop osteoporosis than others. Lifestyle factors that may increase the rate of bone loss include low levels of physical activity, smoking, excessive alcohol intake, poor calcium levels and vitamin D deficiency. Other factors that may lead to osteoporosis include if a man has had a previous fall or fracture, age, family history and being underweight, (which can be caused by chronic diseases). Some medications such as corticosteroids (often used for asthma, arthritis and kidney disease) and anticonvulsants, commonly used to treat epilepsy and some psychiatric disorders, can also speed up the first signs of osteoporosis.

Can osteoporosis be prevented?
If osteoporosis is diagnosed early and effective treatments are used, bone loss can be prevented from getting worse. Having a healthy lifestyle by not smoking, limiting alcohol intake and being active are some of the ways men can reduce their risk of osteoporosis. Weight-bearing and resistance exercises, such as walking, jogging and lifting weights will help improve muscle tone and help maintain bone mass.

Getting enough calcium and vitamin D each day is also important to keep bones healthy. Men can get enough calcium by eating 3-4 serves of dairy foods such as milk, yoghurt and cheese daily or by taking calcium tablets. Vitamin D can be taken in tablets or absorbed through sunlight. A balance is required between achieving enough sun exposure to maintain adequate vitamin D levels and avoiding an increased risk of skin cancer. As little as ten minutes of sunlight per day outside peak exposure times (UV index <3) may be recommended to help prevent bone fracture.
What are the effects of osteoporosis on a man's quality of life?
Osteoporosis can have a major effect on quality of life. It can cause a man pain, disability, depression and loss of independence and social isolation can follow. For men with hip fractures and other illnesses, life expectancy may be reduced. When bone fractures happen, there may be a loss of height or curvature of the spine that can impair lung functioning and normal breathing.

How is osteoporosis diagnosed?
Osteoporosis is diagnosed by examining a man's medical history, taking his height measurement and some specific tests, such as a DXA (Dual-energy X-ray Absorptiometry) scan. The DXA scan, commonly known as a bone density test, measures the density of a man's bones compared with the bone density of an average young adult of the same gender and ethnicity. The DXA scan uses a small amount of radiation to measure the density of the bones in the spine and hip. The test gives a 'T score', which tells the doctor whether or not bone loss has happened. The patient's bone density is then classified into three categories based on the T score: normal, low bone density, or osteoporosis. Osteoporosis may also be described as severe osteoporosis based on the T score in combination with fracture.

<table>
<thead>
<tr>
<th>Classification</th>
<th>T score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal bone density</td>
<td>Greater than -1.0</td>
</tr>
<tr>
<td>Osteopenia (low bone density)</td>
<td>Between -1.0 &amp; -2.5</td>
</tr>
<tr>
<td>Osteoporosis</td>
<td>-2.5 or less</td>
</tr>
<tr>
<td>Severe Osteoporosis</td>
<td>-2.5 or less with a fragility fracture (fracture that happens as a result of minimal trauma)</td>
</tr>
</tbody>
</table>

What do the results of a bone mineral density test mean?
A man who has a T score of -2.5 or less has osteoporosis and is at high risk of getting a bone fracture. If a man has this score after having a bone density test then he should talk to his doctor about treatment for osteoporosis. A score between -1.0 and -2.5 shows osteopenia or low bone density. This may mean that some lifestyle changes are needed to reduce the risk of developing further bone loss and/or the risk of fracture.

Should all men have a bone density test?
Men should have a bone density test if they have:

- Previously been diagnosed with osteoporosis
- Symptoms that suggest osteoporosis, such as loss of height or past fractures of minimal trauma
- Rheumatoid arthritis
- Chronic kidney and liver disease
- An overactive thyroid
- Been prescribed corticosteroids, a drug usually given to treat arthritis, asthma or kidney diseases, for more than 3 months
- Been taking certain anti-convulsive drugs
- Testosterone deficiency
- A family history of osteoporosis
- An age of 70 years or greater
- Smoked or consumed excessive amounts of alcohol
- A low body mass index (less than 20)
- Inflammatory forms of arthritis
- Malabsorption from the intestines
- High urine calcium levels

Can osteoporosis be treated or improved?
If a man has had bone fractures or is diagnosed with osteoporosis, there are medications that may stop further bone loss or even improve bone mass, and also prevent further spinal fractures. The most common medication used to treat osteoporosis in men is a bisphosphonate, a non-hormonal drug, which can help increase bone mass and reduce the risk of fractures. A drug known as teriparatide (parathyroid hormone), that helps new bone to grow and increases bone mass, can also be given by daily injections.

Can testosterone therapy reduce the risk of osteoporosis?
Replacing testosterone in men who have symptoms of testosterone deficiency and clearly low testosterone levels can improve bone density. There is no evidence that testosterone replacement therapy improves bone density in men with normal levels of testosterone. Testosterone deficiency is treated by giving testosterone in doses that return the testosterone levels in the blood to normal. The available forms of testosterone therapy are injections, implants, skin patches, oral capsules, gels and creams. Testosterone therapy is not recommended for men who do not have proven (clinically confirmed) testosterone deficiency.

How important is it for men to maintain good bone health?
Often the only time a man realises he may have osteoporosis is when he breaks a bone. Many men do not realise that osteoporosis can affect men as well as women and it is not just a disease of older people.

Having a healthy lifestyle including adequate calcium in the diet and normal vitamin D levels, increasing weight-bearing exercise, and paying attention to bone health from childhood throughout life is the best way for men to maintain bone mass and reduce their risk of osteoporosis. Such a healthy lifestyle is likely to also reduce the risk of other chronic diseases, such as diabetes, hypertension and obesity.

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1 International Osteoporosis Foundation. Invest in your bones: Osteoporosis in Men. 2004
Men’s Health Australia Longitudinal Study

Men face a range of health concerns throughout their lifetime including reproductive health issues such as prostate disease, erectile dysfunction and androgen deficiency as well as cardiovascular disease, obesity and diabetes.

Andrology Australia, with assistance from the Strategic Projects Development Unit (SPDU), Monash University, has developed a proposal seeking support for a nationwide Men’s Health Australia Longitudinal Study.

The longitudinal study will be implemented over a 20 year period to investigate a broad range of men’s health issues.

The intention is to sample 30,000 adult men over 18 years of age and with a special focus on Indigenous and migrant men.

The study will identify the changes in Australian men’s health and the factors that impact upon their health. The study will consider their general health and physical well being, mental health, reproductive health and social and quality of life issues.

Such a nationwide study will place Australia at the forefront of men’s health research and policy development. It is anticipated that the study will also provide an invaluable resource for future research projects and in developing preventative health strategies and policies for chronic diseases affecting Australian men.

As part of the proposal, Andrology Australia will be convening a one-day forum with key stakeholders during International Men’s Health Week (June 9-15). The forum will involve a series of presentations and workshops with the aim of identifying important issues in men’s health and provide opportunities for stakeholders to provide input into the study.

Following the forum, the intention is to consider a pilot study to develop the details of the project prior to a major funding submission.

Andrology Australia in Hong Kong

Mr Peter Royce, Director of Urology, Bayside Health, Melbourne, recently attended the Urological Society of Australia and New Zealand 61st Scientific meeting in Hong Kong, China and gave a presentation as part of a workshop on behalf of Andrology Australia.

More than 400 delegates attended the conference, which featured presentations on a range of men’s sexual and reproductive health issues including Peyronie’s disease, erectile dysfunction and prostate cancer.

The presentation by Mr Royce complemented a vasectomy reversal workshop sponsored by Andrology Australia. The workshop instructed Urologists in the technique of ‘no scalpel vasectomy’ and explored the issues associated with vasectomy reversal, which is much more complex than a vasectomy.

Mr Royce spoke about vasectomy with reference to findings from the Men in Australia Telephone Survey (MATEs). The survey, undertaken in 2005, found that one in four Australian men aged over 40 had a vasectomy. Of vasectomised men, only 1.4% had a vasectomy reversal.

Mr Royce also presented his results with Sonoblate HIFU (high intensity focused ultrasound) therapy, a new treatment for localised prostate cancer, and ran a HIFU workshop for Urologists attending the conference.

FREE video conference workshop - please register your interest!

Andrology Australia will be running a FREE video conference workshop for GPs during International Men’s Health Week 2008 on ‘Engaging men in general practice’.

The aim of the workshop is to provide new knowledge and communication strategies for GPs to effectively engage men in discussing their health and wellbeing including sensitive issues.

The interactive workshop will be facilitated by Dr Alan Wright (Perth based GP with an interest in GP education and men’s health) and the development of the content will include input from collaborative partners, James Smith (Department of Health & Community Services, NT) and Dr Raie Goodwach (Psychotherapist, Melbourne).

Melbourne metropolitan GPs are invited to personally attend the workshop (spaces are limited) whilst regional Victorian and interstate GPs are encouraged to link in via their local video conferencing facilities on the evening. Check with your local Division of General Practice to see if they are already registered.

When: Wednesday 11th June 2008
Time: 7 – 9pm (local EST)
CPD points: ACRRM and RACGP QA&CPD category 2 points will be available

Registrations are essential: To participate in person at the Host Site (Royal Australasian College for Physicians, Melbourne) or to register via video conference please contact GTH Events (03) 9927 7777 or email events@gthevents.com

If you have any queries please contact Taletha Groves, Education Liaison Officer, Andrology Australia ph: (03) 9594 7162 or email taletha.groves@med.monash.edu.au

Research round-up

Men's Health Australia Longitudinal Study

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Annual report available

The 2007 Andrology Australia annual report with the theme ‘review and recommendation’ is now available. The publication provides an overview of the organisation and its goals as well as the major achievements in 2007. The report is available in PDF format for downloading and viewing from the Andrology Australia website, www.andrologyaustralia.org

E-newsletter available

Andrology Australia’s e-newsletter, ‘Male Briefs’ is now available and provides you with regular men’s health updates. Sign up to get your monthly email update at www.andrologyaustralia.org

International Men’s Health Week 2008

International Men’s Health Week (IMHW) is being held from June 9-15 this year. You can get involved by holding an event or display or by distributing information throughout your workplace.

Visit the Andrology Australia website, www.andrologyaustralia.org to order resources for your event and to enter our IMHW competition. You can WIN a trip to Melbourne for you and two mates to play a round of golf with Ambassador Merv Hughes!

Men’s Health Education Kits

Due to an overwhelming response, the Men’s Health Education Kit has been reprinted with further support from the Rural Health Branch of the Australian Government Department of Health and Ageing.

The Men’s Health Education Kit was developed to raise community awareness of men’s health conditions by providing support to organisations wanting to run a men’s health event.

Only a limited number of Men’s Health Education Kits are available. To order your free copy, contact Andrology Australia on 1300 303 878 or email info@andrologyaustralia.org

No link between testosterone levels and prostate cancer risk

Prostate cancer is the second most common cancer in men, and each year approximately 18,000 men in Australia are diagnosed with the disease.

The only established risk factors for prostate cancer are increasing age, African American race, family history and a diet high in animal fat and protein.

High levels of the male sex hormone testosterone, however, have long been thought to increase the risk of prostate cancer, despite the lack of adequate scientific data.

A recent study has examined the association between levels of testosterone - the most important androgen or male hormone - and other male hormones and the risk of prostate cancer.1

An analysis of data from 18 worldwide studies by the Endogenous Hormones and Prostate Cancer Collaborative group looked at 3886 men with prostate cancer and 6438 men without prostate cancer. In most of the studies, blood samples were collected from apparently healthy men who were then followed to identify those who developed prostate cancer. The associations between concentrations of sex hormones and the risk of prostate cancer were examined before and after adjustment for a number of factors including body mass index, smoking and alcohol consumption.

The analysis found no link between prostate cancer risk and very high or very low levels of testosterone. Also, there was no evidence to support the hypothesis that increased levels of oestrogen, the predominant female hormone that is also present in men in much lower amounts, may be associated with prostate cancer risk.

Men who have risk factors that may increase their risk of developing prostate cancer should discuss the benefits and risks of prostate cancer screening with their doctor.

1 Carpenter WR, Robinson WR & Godley PA. Getting Over Testosterone: Postulating a Fresh Start for Etiologic Studies of Prostate Cancer. Journal of the National Cancer Institute 2008; 100 (3): 158-183

In brief

Latest news

Newsletter of Andrology Australia

Australian Centre of Excellence in Male Reproductive Health

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