

# The Women's Health Research Program

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## Achieving Targeted Assessment of Osteoporosis in Women at Midlife

Medical student, Ms Amanda Tan, was awarded the Jean Hailes Memorial Prize for the best presentation by a young investigator at the Australasian Menopause Society Annual Conference in Adelaide this month for her Bachelor of Medical Science (Honours) research project being undertaken in the Women's Health Research Program. Amanda is looking into "Improving the detection of osteoporosis in women at midlife".

Osteoporosis is a major public health problem characterised by lowered bone density and an increased risk of fracture. A bone density scan (DEXA scan) is used to diagnose osteopenia (reduced bone density) and osteoporosis. In Australia, all women aged 70 years or more are eligible for a Medicare reimbursed DEXA scan. The screening of younger women is variable.

The aims of Amanda's research have been to document the characteristics of women aged 40-65 being referred for a DEXA scan, document who is referring them and estimate the prevalence of osteoporosis within the referred population. This is the first part of a much larger study being supported by Osteoporosis Australia.



Amanda Tan (centre) with supervisors Professor Susan Davis (left) and Professor Robin Bell (right)

The key findings from Amanda's research, which looked at the first 500 women recruited to this study, were that

- Amongst the women referred for a DEXA because they had a specific Medicare indication (about 48 per cent excluding the 10 per cent taking bone specific medications), the prevalence of osteoporosis was low (13 per cent had osteoporosis at the spine and 8 per cent at the hip).
- Amongst the women who were referred for a DEXA with no specific indication (about 42 per cent), very

few had osteoporosis (7 per cent had osteoporosis at the spine and 2.5 per cent at the hip). It is interesting that 21 per cent of these women, with no specific indication for a DEXA, told us that they had requested to be referred for a DEXA scan.

Amanda's findings confirm that it is important that we characterise the women aged 40-65 most likely to have osteoporosis rather than screening a large number of women unnecessarily. This important research study is ongoing with the support of Osteoporosis Australia.



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## New Finding for the Effects of Testosterone and Brain Function

We have investigated the effects of testosterone on brain activation in postmenopausal women in a pilot study. 9 women were treated with transdermal testosterone for 26 weeks and we measured brain activation by a technique known as functional magnetic resonance imaging (fMRI) before treatment and after 26 weeks of treatment. fMRI is a technique that allows noninvasive imaging of regional brain activity as it pertains to a specific task. Women lie in the MRI scanner and are given specific mental tasks to do while they are having the MRI scan. The instructions for the tasks are viewed by the participant via an angled mirror projected from a screen at the end of the scanner table. The tasks we assessed were mental rotation and verbal fluency.

For the mental rotation task, each woman is presented with two identical letters and they have to correctly identify whether the second letter is a rotated version or a mirror image of the first letter. For some letters, this task is more difficult than for others.

After 26 weeks of testosterone we observed no change in verbal fluency. The women were more accurate in detecting mirror-reversed images for the mental rotation task. The main finding was that women were performing the mental tasks as effectively but with less brain activation, that is, less brain cells appeared to be activated when the women performed the tasks.

We have done a similar study for women on HRT and controls not on HRT and

found no difference in the performance of these women over 26 weeks suggesting that testosterone is making a difference, whereas HRT was not. As this is the first study looking at these effects on women of testosterone our findings are exciting, but should be considered preliminary.

**Effects of testosterone on visuospatial function and verbal fluency in postmenopausal women: results from a functional magnetic resonance imaging pilot study.**

*Davis, Susan R.; Davison, Sonia L., PhD; Gavrilescu, Maria; Searle, Karissa ; Gogos, Andrea P; Rossell, Susan L.; Egan, Gary F.; Bell, Robin J. PUBLISHED ON LINE MENOPAUSE 2013*

## Get involved in research

### A New Approach to Treating Women Who Do Not Experience Orgasm

Most recently a novel approach has been developed to potentially treat women who fail to reach orgasm (anorgasmia). Researchers recognised that testosterone therapy not only improved sexual desire, but also resulted in increased vaginal blood flow and increased orgasm frequency. As a result the approach of using testosterone on an "as needs" basis is being studied in centres across Australia and North America, including the Women's Health Research Program.

Our new study will assess whether the self-administration of a single dose of testosterone as an intra-nasal gel will result in

ability to reach orgasm for women who have previously experienced orgasm but no longer do so.

To participate in this study women need to be aged between 18 and 65, be experiencing inability to reach orgasm, but have experienced orgasm in the past and be in a stable sexual relationship of at least 6 months duration.

The study is being conducted at our centre at the Alfred Centre in Melbourne as well as in Sydney, Perth and Adelaide. Women interested in participating in the trial should call 1800 998 055.

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