

The Women's Health Research Program

Health Bulletin
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What's new in the literature?

Antidepressants and bone health

It has been suggested that antidepressants may be associated with bone loss, particularly selective serotonin uptake inhibitors (SSRIs). SSRIs are the most commonly prescribed antidepressants in the community. Susan Diem and co-workers recently investigated the rate of bone loss in women starting antidepressant therapy in midlife. This was undertaken as part of the SWAN Study (the Study of Women Across the Nation) in the USA. They included in the study 1972 women aged 42 years and older living in the community. They compared bone density measurements over time between 311 new users of SSRIs, 71 new users of tricyclic antidepressants and non-users. They found no evidence that the users of either class of antidepressants investigated had a higher rate of bone loss at the spine or hip than non-users when age, menopausal status, body mass index and a number of other variables were taken into account. This study is reassuring for the many women in the community taking these antidepressants^[1].

1. Diem, S.J., et al., *Rates of bone loss among women initiating antidepressant medication use in midlife*. J Clin Endocrinol Metab, 2013. **98**(11): p. 4355-63.



Dense breasts, what tests should be done?

Some women (about 8%) have what is described as dense breast tissue when a mammogram is performed. This reduces the sensitivity of mammography in terms of finding abnormalities of concern. In addition, very dense breast tissue slightly increases a woman's risk of breast cancer. So it has been suggested that women with dense breasts should have other tests done to screen for breast cancer, such as an ultrasound or an MRI.

The American College of Obstetricians and Gynecologists have recently published an opinion on "Management of Women With Dense Breasts

Diagnosed by Mammography".

They recommend against the general screening of women with dense breasts diagnosed on mammography as

1. The diagnosis of "dense breasts" is subjective
2. Evidence that additional screening will reduce breast cancer mortality in women with dense breasts is lacking.

They advocate that more research is needed to optimize screening of women with greater breast density, that is sensitive but minimizes the likelihood of false findings.

Committee Opinion No. 593. American College of Obstetricians and Gynecologists. Obstet Gynecol 2014;123:910-1.

Endurance exercise after menopause and cardiovascular health

The ability of an artery to dilate after compression is a recognized measure of the health of a person's blood vessels. This is often referred to as "endothelial function". When oestrogen levels fall at menopause endothelial function of blood vessels decreases. It has been known for many years that treatment ▶



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with oestrogen restores endothelial function in postmenopausal women.

When older men undertake endurance training their endothelial function improves, but this is not consistently the case for older women. So a team of researchers investigated the effects of oestrogen therapy (compared with placebo) and endurance training on endothelial function in a group of postmenopausal women not taking hormones.^[2]

The women were randomly allocated to take an oestrogen tablet and use a placebo skin patch, or take a placebo tablet and use an oestrogen patch, or to take a placebo tablet and use a placebo patch during the study. The researchers and participants were

unaware which treatment each person was receiving (the study was 'blinded'). After 12 weeks women were then commenced on an endurance exercise program of walking 45 minutes 5-7 days per week. Endothelial function was tested at the start, after 12 weeks of drug therapy and after 12 weeks of drug therapy + exercise.

All women were similar at baseline, and average age 56-57 years. 12 weeks of oestrogen therapy (either patch or tablet) resulted in significant improvement in endothelial function with no change in the placebo group. This improved even further in both oestrogen treated groups after 12 weeks of moderate intensity endurance training. The critical finding however was

that 12 weeks did not improve endothelial function (the marker for cardiovascular health) in the women treated with placebo.

These findings indicate that oestrogen has an essential role in mediating benefits of regular moderate intensity endurance exercise in postmenopausal women, and that postmenopausal women, not taking oestrogen therapy, experience less benefit, in terms of blood vessel function, than women taking oestrogen as either a tablet or skin patch.

2. Moreau, K.L., et al., *Essential role of estrogen for improvements in vascular endothelial function with endurance exercise in postmenopausal women.* *J Clin Endocrinol Metab*, 2013. **98**(11): p. 4507-15.

Get involved in Research

Does anti-androgen therapy impair cognitive function in women with polycystic ovarian syndrome?

There is evidence that testosterone is important for normal brain function in women. If this is the case then blocking testosterone action might impair normal brain function. Women with a condition called polycystic ovarian syndrome (PCOS) tend to have elevated testosterone levels and are commonly treated with a medication (spironolactone) to lower their testosterone and block testosterone action.

The aim of this study is to determine whether spironolactone treatment of women with PCOS results in any change on the brain function assessed by sensitive tests of verbal and spatial learning and memory. The findings will not only inform us about the safety of this treatment in women with PCOS but also add to our understanding of the role of testosterone in brain function in women.

Our approach: PCOS is the most common hormonal disorder in women, affecting around 15% of women of reproductive age. Affected women commonly experience excessive facial and body hair and acne. The standard treatment for this is "anti-androgen" therapy (spironolactone) which blocks testosterone production and action.

We will recruit to this study 2 groups of women with PCOS:

Group 1 will be 25 premenopausal women with PCOS who have been taking the anti-androgen, spironolactone, 100mg daily for at least 3 months. Group 2 will be 25 premenopausal women with PCOS who are to commence spironolactone 100mg daily for excess hair growth/ acne. We will exclude women taking other medications that might confound the study outcome.

We will assess learning and memory using a highly sensitive computer based testing system called CogState that was developed in Australia to assess the cognitive function of healthy people. We have used this in several published studies.

The CogState battery assesses a range of brain functions including word learning and memory, visual attention, psychomotor function, visual learning and executive brain function. The primary study outcome will be the change in the word learning and memory score in group 2, compared to group 1, over 12 weeks. Other outcomes will be the change in the other CogState task score and in testosterone levels.

Anti-androgen therapy is used extensively in women with PCOS. We suspect that this therapy adversely affects verbal learning and memory – to date this has not been studied. This study will enable us to test our hypothesis. If we find that use of the anti-androgen impairs learning and memory, this study will provide information about the size of the effect for us to design a larger double blind, placebo-controlled randomised controlled trial to investigate this further.

If you are interested in receiving more information regarding this study please contact the Women's Health Research Program.

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