



# Would you like cream with that? An artery health trial.

**Wanted: middle-aged men who are carrying a tad too much weight and would like to be fitter and healthier.**

They can apply to join a new trial looking at whether testosterone, with or without exercise, can improve the health of their arteries. The testosterone is given as a cream applied to the torso.

The trial is being headed by **Dr Bu Yeap**, of the School of Medicine and Pharmacology and the Harry Perkins Institute of Medical Research. It was prompted by his team's recent findings of a link between testosterone and telomere length in men. The shortening of telomeres - structures at the end of chromosomes that protect the chromosomes - is a marker for biological ageing.

The team's study of 980 men aged 54 years on average from the WA Busselton Health Survey found that higher levels of the bioactive metabolites of testosterone, dihydrotestosterone and estradiol, are independently associated with longer leucocyte telomere length in men. They showed that genetic polymorphisms which reduce estradiol levels are predictive of shorter telomere length, suggesting a causal link.

"So we postulate that maybe exposure to a higher circulating level of estradiol actually slows biological ageing in men," Dr Yeap said. His team found three polymorphisms and they were relatively

common, being present in half to two-thirds of the population. The findings were published in the March issue of the *Journal of Clinical Endocrinology and Metabolism*.

"The telomere finding is very important," Dr Yeap said. It opens up the question - if they manipulate hormone levels, could they slow biological ageing.

"Ageing is a powerful driver for diabetes, cardiovascular disease, dementia, frailty," he said. "If you can slow biological ageing, you are going to prevent a heap of disease."

His team is now conducting a randomised controlled trial to see whether testosterone, either alone or in combination with exercise training, will improve the health of arteries in middle-aged older men with a waist circumference of 95cm (37.4 inches) or more. They are hoping to recruit up to 80 men aged 50-70 years who would like to be fitter and healthier. They can apply directly to be part of the trial or be referred by their GP.

The participants' fitness and arterial health will be measured before and after the trial. They will be randomised to testosterone or placebo. Those randomised also to exercise will receive three months of a personalised training program, involving one hour of exercise three times a week. Those randomised to their usual activities will be given an

individualised exercise prescription at the end of the trial so they don't leave empty-handed.

The trial has received a \$75,000 grant-in-aid from the Heart Foundation but most of the trial researchers are donating their time and expertise for free. Dr Yeap said the trial will answer the question of whether testosterone is a beneficial treatment. "At the moment, we only treat men who are clearly androgen deficient, who have a pituitary problem or a testicular problem and can't make testosterone," he said.

His previous research has shown that men in the 25th percentile of the testosterone range have worse health outcomes, including a greater risk of cardiovascular disease, diabetes, and hospitalisation or death from stroke. "But at the moment, we don't treat those men," Dr Yeap said. "We need to do some proper scientific studies to find out whether treating those men with a low-normal level can improve their health or not."

Men aged 50-70 years interested in entering the trial, and doctors who would like to refer patients, can contact research nurse **Ms Helen Daniels** at [helen.daniels@uwa.edu.au](mailto:helen.daniels@uwa.edu.au) or on (08) 6151 1138.

Above: (from left) Exercise physiologists Ms Lauren McKeown and Dr Louise Naylor, and study researchers Dr Bu Yeap and Dr Yi Xian Chan, try out some of the equipment in the gym used in the study.