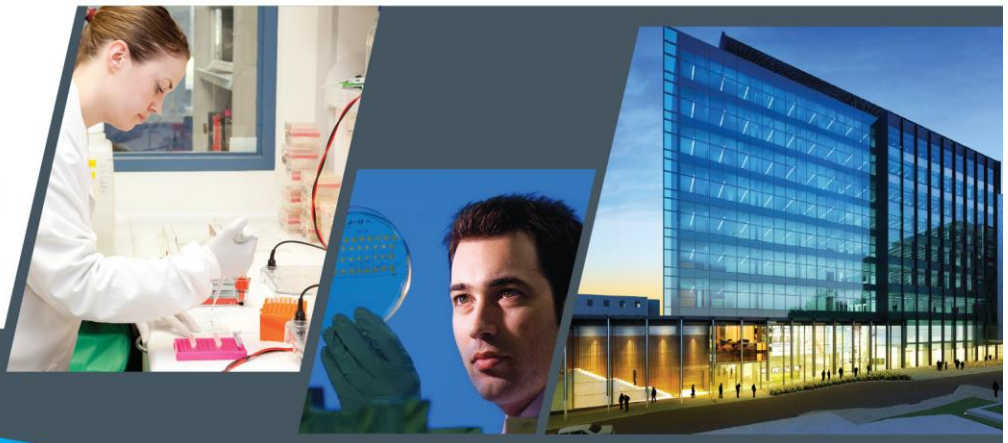
HARRY PERKINS INSTITUTE
OF MEDICAL RESEARCH



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PERKINS Seminar Series

TUESDAY 31 MAY

Dr Bu Yeap

Associate Professor, University of Western Australia
Consultant Endocrinologist, Fiona Stanley and Fremantle Hospitals

"Testosterone, diabetes and cardiovascular disease: research for men's health"

Dr Bu Yeap is Associate Professor, School of Medicine and Pharmacology, University of WA and consultant endocrinologist, Fiona Stanley and Fremantle Hospitals, Perth, WA. He has longstanding interests in the area of androgens and health during male ageing, and the clinical care of patients with endocrine disorders and diabetes. He has published extensively on the epidemiological associations of low testosterone with poorer health outcomes particularly cardiovascular disease and stroke risk in older men. His current research is directed towards translation of these observational data via focussed proof-of-concept randomised clinical trials to explore causality, provide mechanistic data and develop novel interventions to improve vascular function and other key health outcomes in men.

Following medical training and specialisation in endocrinology he took a molecular biology-oriented PhD, characterising androgen-regulated destabilisation of the androgen receptor mRNA in prostate and breast cancer cells, and AR mRNA-protein interactions. Following this, he led a team to develop a human macrophage model with which to study mechanisms underlying diabetic atherogenesis. Addressing the global challenge posed by ageing populations driving an increasing incidence of diabetes, cardiovascular and other disease, his research evolved from the laboratory into clinical and epidemiological studies of hormones as determinants of health outcomes in older men, followed by studies to translate observational data to the clinical arena.

As men grow older, circulating testosterone (T) declines while the prevalence of ill-health increases. T is metabolised by 5α-reductase (SRD5A2) to dihydrotestosterone (DHT, a more potent androgen) and by aromatase (CYP19A1) to estradiol (E2, an oestrogen). His findings from the WA Health In Men Study (HIMS) illuminated low circulating T as a risk predictor for a range of poorer health outcomes in older men. Using state-of-art mass spectrometry assays, he defined reference ranges for T, DHT and E2 in older men to guide the assessment of androgen deficiency in this growing demographic group. Studies from HIMS showed that higher T or DHT are independent predictors for reduced incidence of stroke in older men, and that an optimal circulating T predicts survival. Recent findings from HIMS validate lower circulating undercarboxylated osteocalcin (ucOC) as an independent predictor of diabetes risk in older men, and a lower proportion of ucOC to total osteocalcin as a biomarker for incidence of myocardial infarction. These results illuminate an interaction between bone and glucose metabolism with cardiovascular risk, with potential therapeutic implications.

From the Busselton Health Survey, he reported associations of higher DHT or higher E2 with longer leucocyte telomere length in men, a characteristic of slower biological ageing. From this same study a Mendelian randomisation analysis identified three aromatase polymorphisms associated with both lower circulating E2 and shorter telomere length, supporting the concept that bioactive metabolites of T influence biological ageing in men. Current ongoing randomised controlled trials will test whether T supplementation on a background of lifestyle intervention reduces the incidence of type 2 diabetes in high risk men; and whether the combination of T supplementation and exercise training will improve vascular function more than either intervention alone. These results will shape therapeutic approaches and ultimately health policy to prevent diabetes and cardiovascular disease in the increasing population of older men.

12:00pm till 1:00pm

SEMINAR ROOM 272, LEVEL 2, HARRY PERKINS INSTITUTE OF MEDICAL RESEARCH, NORTH CAMPUS


Your Guide to the
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Aberdare Rd
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Gairdner Dr
Hospital Ave
Winthrop Ave
Kings Park
Campsie St
Kingston St
Verdun St
Waiting Walk
E Street
G Street
Main Entrance
Main Entrance & Admissions
EMERGENCY
Emergency Helipad
Visitor Car Park 1
Visitor and Staff Multi Deck Car Park
(Entry off Winthrop Ave Only)
To Harry Perkins
Multi Deck Car Park Phase 2
Under Construction
Lions Eye Inst
Child Care
Staff Car Park 4
HARRY PERKINS INSTITUTE
PathWest
Visitor Car Park 3A
Car Park 7B
Staff Car Park 6
Visitor Car Park 7 8.00am - 4.00pm
Staff Car Park 7A
Western Power Sub Station
Staff Car Park 3
Hollywood Private Hospital
Under Construction (New Children's Hospital)
UWA Car Park
To Stirling Hwy
Monash Ave
Hampden Rd
Caladenia Cres
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