



Project Title: WELCOM Trial - WEight Loss and Change in Osteoarthritis bio-Markers and long-term clinical outcomes in postmenopausal women with obesity		Code: SMS2
Host School / Institute: Sydney Medical School/ Boden Institute		Address: The Boden Institute of Obesity, Nutrition, Exercise & Eating Disorders, Level 2 Charles Perkins Centre (D17), John Hopkins Drive, NSW
Certificates & Clearances required: No		
Primary Supervisor: Dr Xingzhong Jin		
Phone: 02 8627 7588	Email: xingzhong.jin@sydney.edu.au	
Co-Supervisor/team: -Prof Amanda Salis - NHMRC Senior Research Fellow in the Boden Institute of Obesity, Nutrition, Exercise & Eating -A/Prof Meilang Xue - Director of Sutton Arthritis Research Laboratory and Chief Scientist of A3BC Biobank -Dr Radhika Seimon - Research Fellow at the Boden Institute of Obesity, Nutrition, Exercise & Eating -Dr Xia Wang - Post-doc Research Fellow at the Institute of Bone and Joint Research -Dr Yong Chen - Clinical rheumatologist and visiting research scholar from the Southern Medical University, China -Prof Virginia Kraus - Professor of Medicine at the Duke Molecular Physiology Institute in the Duke University School of Medicine.		
Project Type: Clinical; Laboratory based; Data Analysis		
Project Category: Chronic Diseases/Illness; Nutrition/Obesity		
Skills / Attributes of a successful student: <ul style="list-style-type: none"> Keen interest in obesity research and musculoskeletal health strong attention to detail as the reproducibility and reliability of biomarker measurement depend on using proper techniques and following laboratory protocols. Diligent and self-motivated. Willingness to learn. Inquisitive with problem-solving skills, as well as good time management skills. Prior practical experience in biomedical research laboratory would be welcomed but not essential. The student will be trained in all aspects of laboratory methods required for this project. Experience with Microsoft Excel is essential. Prior experience of statistical analysis for clinical trials would be a bonus but not essential. The student will be trained in clinical trial data analysis. Preferred science or biomedical science or clinical medicine background. 		
Project Keywords: Obesity; Arthritis; Biomarker; Aging; Women's health		
Project Description: Osteoarthritis (OA) affects 1 in 8 Australians with a total economic cost estimated to be \$23 billion each year. The disease prevalence is expected to increase to 3 million Australians by 2032 due to an aging population and the rising prevalence of obesity. Postmenopausal women with obesity are at the highest risk to develop OA. Despite all clinical guidelines for OA management recommend weight loss for patients with obesity, it remains unclear as to whether weight loss can actually delay the onset and progression of OA and which weight loss intervention is more effective than others. The WELCOM study is the world's first randomised controlled trial that aims to examine the effects of two most commonly used dietary weight loss interventions, namely meal replacement (fast weight loss) and conventional food-based diet (slow weight loss), on biomarkers that measure joint cartilage degradation due to OA in postmenopausal women with obesity. In this project, you will learn how to measure cartilage biomarkers in serum and urine samples using sandwich enzyme-linked immunosorbent assay (ELISA), and you will also learn the key concepts of clinical trial design and analysis. You will have the opportunity to work with a multidisciplinary research team with a wide range of expertise from laboratory science to clinical research at the interspace of obesity and osteoarthritis. You will be working in the Charles Perkins Centre, a state-of-art research and education hub at the University of Sydney.		