



THE UNIVERSITY OF
SYDNEY

The Cardiovascular Disease and Oral Health Pilot Study

2021 Report

Prepared for Dr Jerry Schwartz





“Your support is a catalyst for positive change. It is helping to pioneer research that improves the wellbeing of humankind by addressing the world’s greatest challenges and building a better future. Thank you.”

Professor Mark Scott AO
Vice-Chancellor and Principal
The University of Sydney

Unlocking new discoveries to improve global health

On behalf of the University of Sydney, thank you for enabling exciting new research to investigate the efficacy of oral health therapy as an adjunct cardiovascular disease treatment.

Cardiovascular disease (CVD) is a leading cause of death globally, taking an estimated 17.9 million lives each year and poor oral health is a known risk factor. With your support, researchers at the University are spearheading a cardiovascular disease and oral health pilot study to uncover additional evidence with the potential to improve the diagnosis and treatment of CVD.

We are pleased to provide this report which includes an update on the *Cardiovascular disease and oral health pilot study* being led by Professors’ Clara Chow and Joerg Eberhard and assisted by a PhD student, Lauren Church and Post-Doctoral Research Associate, Dr Shalinie King. It also covers Dr King’s research at the Westmead Applied Research Centre which is partially supported by your generous gift.



“Dr Schwartz, thank you for your crucial investment in studies to explore the interactions of oral health and cardiovascular disease. It means we can enhance the body of evidence showing the adverse effects of poor oral health on general health. Ultimately, this work will inform new preventative and therapeutic interventions to improve patient outcomes.”

Professor Joerg Eberhard
Inaugural Chair of Lifespan Oral Health
University of Sydney Dental School

Cardiovascular disease and oral health pilot study

The *Cardiovascular disease and oral health pilot study* was co-designed by Professor Clara Chow, Academic Director Westmead Applied Research Centre, and Professor Joerg Eberhard, Chair of Lifespan Oral Health in the University of Sydney Dental School.

The focus of the pilot study is to collect and analyse data from individuals who have experienced, or who are at high-risk of, a myocardial infarction. Study participants recruited from the Western Sydney Local Health District (WSLHD) will receive interventional oral health therapy in the form of treatment for their gum disease and anti-inflammatory medicines.

The trial will measure the effect of the oral health therapy and the anti-inflammatory medicines on cardiovascular risk factors to better understand the impact of oral health interventions on cardiovascular health.

The pilot study will run over a four-year period and comprises three-main phases:

- Phase 1 (0–6 months): Set up the study (underway)
- Phase 2 (6–36 months): Run pilot study, write up meta-analysis, apply for larger study funding and additional resources and

- Phase 3 (36–48 months): Follow up, data analysis, promotion of study findings.

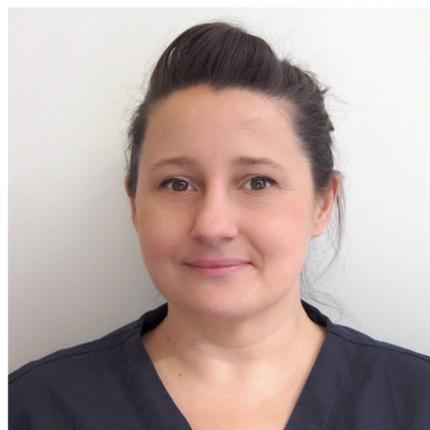
Progress update

The pilot study is currently in phase 1 and the primary focus for the first six months has been to set up the three projects that underpin the pilot:

1. Clinical trial study – Reducing the systemic inflammation associated with periodontitis to reduce risk in patients with coronary artery disease and on statin therapy: A randomized feasibility study
2. Analysis of dental dataset – Periodontitis and cardiovascular disease: An analysis of patient data at Westmead Hospital and
3. Digital health study – Mobile health apps to improve oral health practices: A study of adult user perspectives.

Obtaining the prerequisite protocols and the submission of applications to attain data and secure ethics approvals is now well advanced. Phase 2 of the study is due to begin in 2022 and a status update on each project is outlined on the following pages.

Cardiovascular disease and oral health pilot study



Left: The pilot study will explore the efficacy of oral health therapies as a means of treating and potentially preventing otherwise unforeseen cardiovascular disease. Right: New PhD recruit, Lauren Church, is due to commence in January.

1. Clinical trial study

The clinical trial study 'Reducing the systemic inflammation associated with periodontitis to reduce risk in patients with coronary artery disease and on statin therapy' is due to commence in January.

The following milestones are now complete or underway:

- Ethics approval finalised
- Site approval obtained and
- Recruitment of PhD student Lauren Church.

The recruitment of PhD student Lauren Church follows a competitive application process to identify suitably qualified candidates with an interest in oral health and cardiovascular disease. Lauren was a standout applicant and her appointment is underway with an expected start date in January.

Lauren Church

Lauren Church completed her Bachelor of Oral Health Therapy degree in 2017 and her Bachelor of Health Science Honours degree the following year at the University of Newcastle. During her university career Lauren was awarded various academic awards including the University of Newcastle, Faculty of Health and Medicine Medal for outstanding academic achievement. Her Honours research focusing on the students' experience during a Cambodian placement was published in the Annual Clinical Journal of Dental Health - The British Society of Dental Hygiene and Therapy in 2020. Lauren is a practising Oral Health

Therapist with experience in both the public and private sector, and cares deeply for the health of her patients. Lauren has passion for knowledge, and a keen interest in the link between oral health and chronic disease.

2. Analysis of dental dataset

This collaborative project will involve the analysis of patient data collected at Westmead Hospital. It is a collaboration with the Western Sydney Local Health District and uses data collected from patients with periodontitis to analyse their risk for cardiovascular disease.

The following milestones are now complete or underway:

- Ethics application and protocol submitted mid-October 2021 and
- Recruitment of a Master's candidate - this position is currently being advertised internally at Westmead Hospital.

Master's candidate

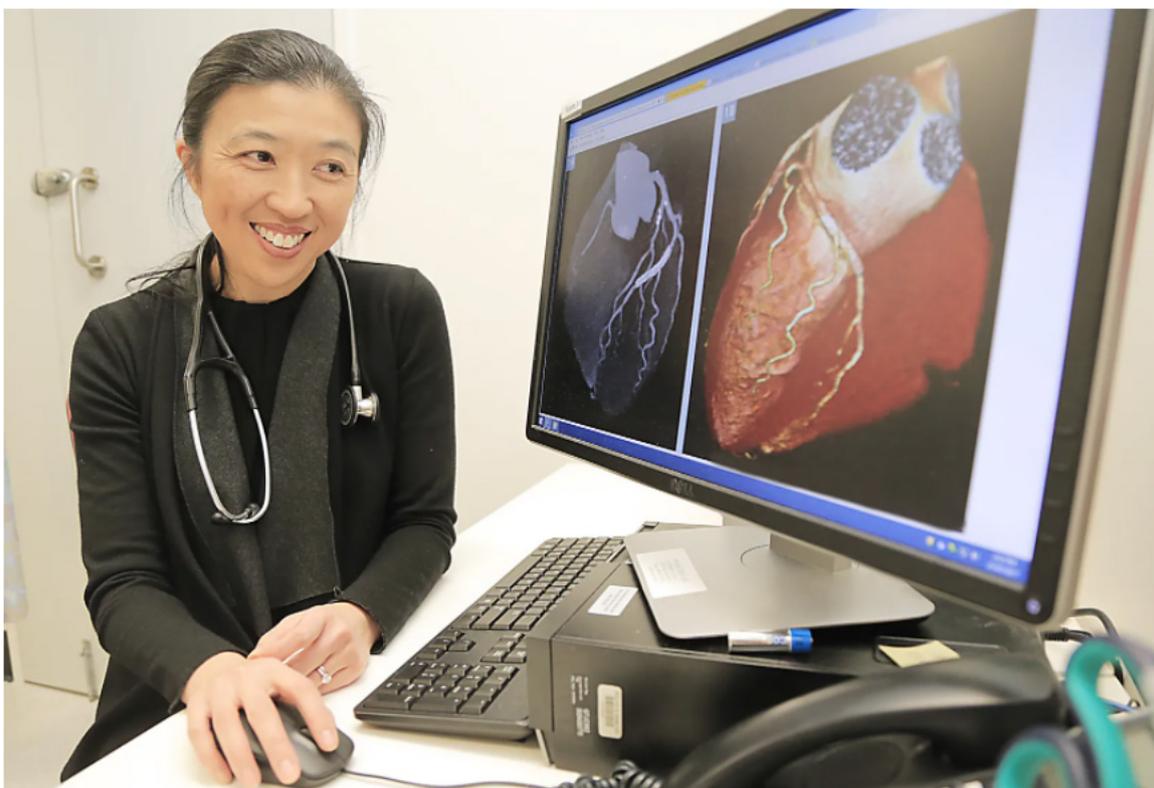
The search for a suitably qualified Master's candidate is underway and, once recruited, will be based at the Westmead Centre for Oral Health. The primary focus of this position is to assist with the data collection and data analysis of dental data sets (titanium) and medical datasets (electronic medical record). The student's contribution to the project will count towards a Master of Philosophy (MPhil) in Oral Health and Cardiovascular Disease, building crucial future capacity for this area of research.

3. Digital health study

The digital health study 'Mobile health apps to improve oral health practices: A study of adult user perspectives' is to be run in collaboration with colleagues from the University with expertise in digital health and public health. The Westmead Applied Research Centre has awarded the project team with seed funding to assist with the study which is due to begin in 2022.

The following milestones are now complete or underway:

- The study team has been established
- The protocol has been being finalised
- Ethics application submitted in November 2021 and
- \$23,000 of seed funding awarded by the Westmead Applied Research Centre to Dr Shalinie King, Dr Liliana Laranjo, Professor Benjamin Smith and Professor Joerg Eberhard.



Above: Professor Clara Chow is a cardiologist committed to reducing the burden of cardiovascular disease through prevention and innovative approaches. Image source: [The Pulse](#).



Left: Dr Shalinie King is a Postdoctoral Research Associate at the Westmead Applied Research Centre. Her expertise as a dental clinician is vital to the success of this pilot program.

Fellowship – Dr Shalinie King

Since April 2021, your generous gift has partially supported the work of Dr Shalinie King, a Senior Lecturer with the University of Sydney Dental School. Dr King recently joined the Westmead Applied Research Centre (WARC) as a postdoctoral research associate. As a practising clinician she brings valuable experience from her work in the public and private sectors of dentistry. Her PhD, awarded in 2019, investigated the role of diet-induced metabolic changes in bone tissue metabolism around a dental implant.

Dr King’s fellowship-supported work is focused in the following areas:

- Lead and implement research projects in Cardio-Periodontology relevant to the prevention of chronic disease, including her contribution to the cardiovascular disease and oral health pilot study
- Develop research collaborations between oral health and other areas of health to develop innovative and workable projects that help improve community oral health outcomes
- Build research capacity in oral health by developing a research team, including the Master’s and PhD student roles attached to the pilot study and
- Identify and apply for additional funding to support projects and publish research outcomes.

Achievements

Dr King has made good progress to establish Cardio-Periodontology focused projects and secure additional funding to get these new projects off the ground. Her achievements to date are highlighted below.

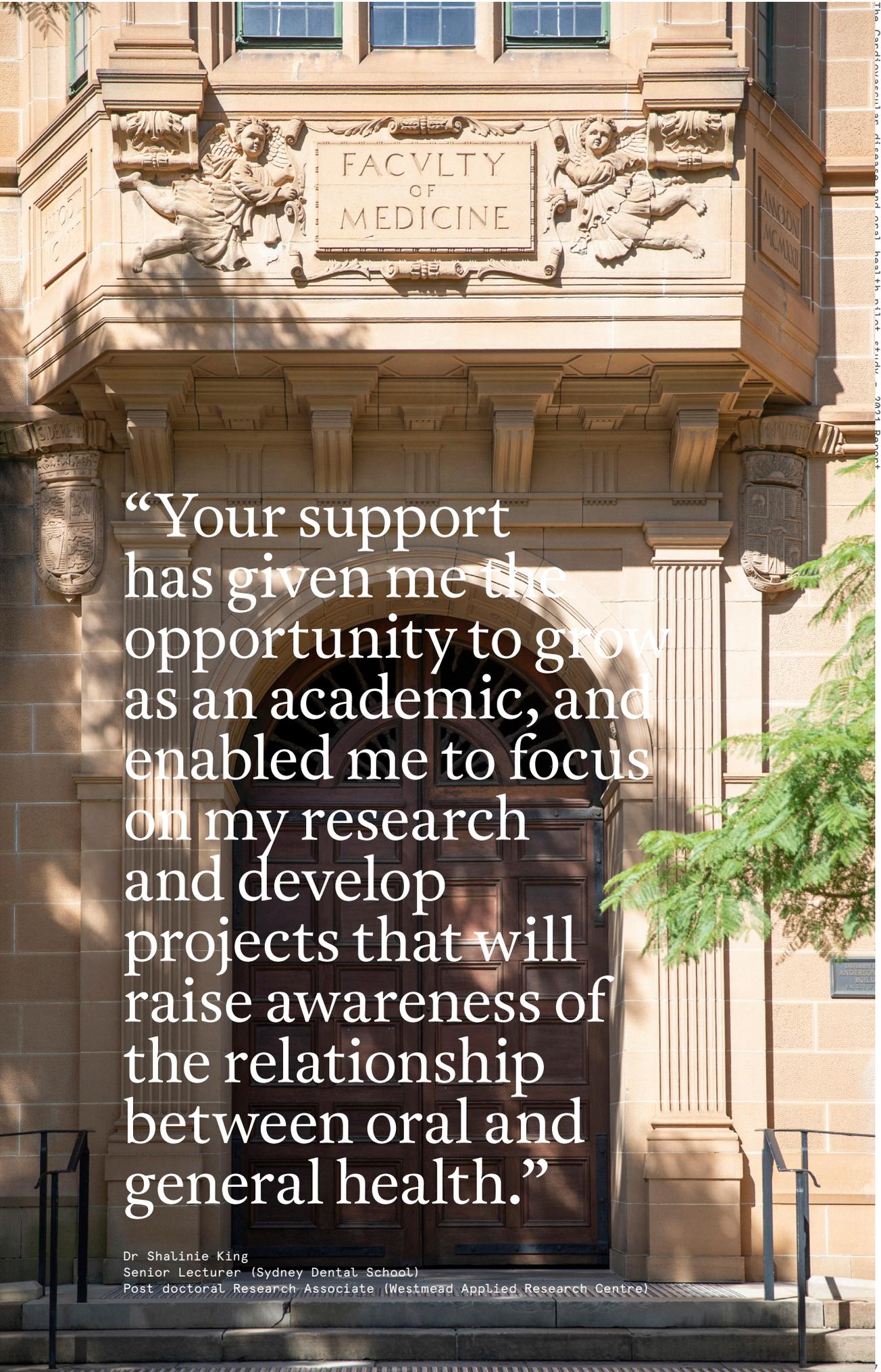
Presentations

Dr King has given two presentations to disseminate and raise the profile of the research among the academic community:

- WARC strategic planning day: Oral health and cardiovascular disease, May 2021 and
- Charles Perkins Centre Early and Mid-Career Researchers Committee (EMCR) presentation: Cardio Perio Research Programme, May 2021.



Above: Dr King’s research interests include the association between periodontal disease and systemic metabolic diseases such as cardiovascular disease and diabetes, with a focus on improving community health outcomes using simple interventions.



“Your support has given me the opportunity to grow as an academic, and enabled me to focus on my research and develop projects that will raise awareness of the relationship between oral and general health.”

Dr Shalinie King
Senior Lecturer (Sydney Dental School)
Post doctoral Research Associate (Westmead Applied Research Centre)

Fellowship - Dr Shalinie King



Above: Dental health has implications for general wellness with periodontitis identified as a risk for cardiovascular disease.

Publications

Dr King is a first author on the following journal article which has been submitted for peer review:

- King S, Chow KC, Eberhard J. Oral manifestations of cardiometabolic disease. Internal Medicine Journal. (manuscript submitted for review on 15 October 2021).

Grants

Dr King and colleagues at the WARC have successfully secured or applied for additional funding to support Cardio-Periodontology research:

- Seed funding (\$23K) awarded by the Westmead Applied Research Centre for the pilot study and
- NHMRC Clinical Trials Centre (CTC) Innovation Grant application 'Appreciating the emerging evidence linking oral and overall health to define a novel oral health-related Quality of Life (OHRQoL) instrument'.

Words of gratitude

"Your support has given me the opportunity to grow as an academic. It has enabled me to focus on my research and develop projects that will raise awareness of the relationship between oral and general health. I am grateful to Dr Schwartz and the Schwartz Foundation for supporting early-career academics in this field. Thank you for your generosity."



Above: The University of Sydney Dental School's multidisciplinary research approach brings together the complementary expertise of the Faculty of Medicine and Health's schools, centres and institutes with that of our affiliated teaching hospitals, institutes and international research partnerships.

Thank you

Thank you for your visionary investment in novel projects to help us better understand the link between cardiovascular disease and oral health. Your commitment to enabling crucial studies aimed at fast-tracking innovative research is truly inspiring. Your gift also means early and mid-career researchers like Dr King can forge ahead with projects that have the potential to deliver significant improvements in diagnostic and treatment options for patients. As always, we deeply appreciate your continued and generous support to ensure a healthier future for the following generations.

For more information

Debra Almeida, Senior Associate Director of Development
T +61 2 8627 9417 E debra.almeida@sydney.edu.au
sydney.edu.au

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