

New hopes for rheumatic fever vaccination

March 19 2015

A new vaccine to combat the debilitating disease caused by rheumatic fever may soon become a reality, saving hundreds of thousands of deaths from preventable heart disease around the world each year.

"This is a real game changer," says Professor John Fraser (Dean of the Faculty of Medical and Health Sciences at the University of Auckland), who was speaking at the Australasian Society for Infectious Diseases (ASID) Annual Scientific Meeting in Auckland this week.

Rheumatic fever is caused by infection with group A streptococcus (GAS). Recurrent infections cause chronic damage to the heart valves known as [rheumatic heart disease](#) (RHD).

The GAS bacterium also causes serious bloodstream infections and flesh eating disease, kidney disease as well as sore throats and skin sores.

This causes more than half a million deaths each year around the world. In New Zealand, Pacific Islanders and Maori people are disproportionately at risk.

For 80 years now scientists have been trying to develop a vaccine, but the combination of lack of profitability (it's the world's youngest and poorest that are most affected), the challenge of tackling a wide variety of strains, and the risks associated with trials have made the pharmaceutical industry reluctant to drive this forward.

But now a new initiative funded by the Australian and New Zealand

governments known as CANVAS (Coalition to Advance New Vaccines for Group A Streptococcus) is finally making progress.

"This is the most confident I've felt yet that a vaccine is within reach," says Professor Fraser who is also CANVAS co-Principal Investigator. "We have the capacity. We have the will of the international community, and we have the funding of two governments to see this through. In as little as three years I think we might have a vaccine in late-stage trials."

New Zealand has been at the forefront of efforts to tackle [rheumatic fever](#) with significant investments in public health initiatives and more recently a commitment to develop a group A streptococcus vaccine.

Both Australia and New Zealand are investing more than any other country in the world into this commitment.

CANVAS - a collaboration between the University of Western Australia affiliated Telethon Kids Institute and the University of Auckland - plans to assess several vaccines candidates and fast track development of a vaccine most likely to be safe, efficacious and cost effective.

CANVAS has three goals in its first stage: (i) Identify the most common disease strains; (ii) evaluate which vaccines currently under development best target these and (iii) make the financial case for the development of the most effective vaccine. Subsequent stages will accelerate development of the best candidate, through government funding and global partnerships.

The CANVAS team has been working with scientists from around the world and has now identified three to four vaccines with promise, from which the strongest will be selected for development. This selection could happen as soon as December this year.

"This new era has resulted in wonderful collaborations on a global scale," says Professor Fraser. "Efforts to develop rheumatic fever vaccines have involved researchers from countries such as the United States, Italy, Brazil, Australia and New Zealand collaborating with researchers in Mali, Nicaragua, Fiji, India, and South Africa. This truly global effort is getting results. I feel confident we will see a [vaccine](#) soon."

Provided by University of Auckland

Citation: New hopes for rheumatic fever vaccination (2015, March 19) retrieved 6 May 2024 from <https://medicalxpress.com/news/2015-03-rheumatic-fever-vaccination.html>

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