

Developing new oral rotavirus vaccine

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The University of Otago is playing a major role in the international development of a new low-cost oral vaccine to protect newborn babies against rotavirus.

Rotavirus "gastro" is a life-threatening [diarrheal disease](#) that results in the death of over half a million children under five worldwide and two million hospitalisations each year. In New Zealand, rotavirus is responsible for 1500 [hospital admissions](#) of children under five years of age each year.

The research collaboration led by the Murdoch Children's Research Institute at the Royal Children's Hospital, Melbourne, is supported by the New Zealand Health Research Council and its Australian counterpart the National Health and Medical Research Council. The Dunedin Clinical Trial Team at the University of Otago began the second phase of the [vaccine](#) development in January this year.

University of Otago researcher, Dr Pam Jackson, from the Department of Women's and Children's Health, said that one dose of the [rotavirus vaccine](#) was well tolerated in the first phase of development in the Melbourne-based trial in babies, which was completed last year.

In the second phase of development of the vaccine, newborn babies and infants in Dunedin will be given three doses of the [oral vaccine](#), called RV3-BB, or a placebo to ascertain the level of immunity to rotavirus generated by the vaccine. The vaccine is derived from a harmless strain of rotavirus found in newborn babies.

Children who have had this strain show no symptoms, and have shown to be protected against future infection by rotavirus strains.

Dr. Jackson said that unlike the current rotavirus vaccines that are available which are given to babies six to eight weeks of age, this vaccine will be given to newborns.

“This is important because we know that infection can occur very early in developing countries and means that the vaccine has the potential to save many thousands of lives by vaccinating at birth while babies are still in a health care setting,” she says.

“After this time, babies are often lost track of, when their risk of the severe rotavirus disease is very high. By starting vaccination from birth we will be potentially able to offer them protection from rotavirus disease by three months of age.”

At present in New Zealand and many other countries, the currently available [rotavirus](#) vaccines are not part of the National Immunisation Programme of funded vaccinations, mainly due to cost.

The research and development of this vaccine is being led and conducted by academic institutions rather than the pharmaceutical industry with the intention to partner with developing country manufacturers so that the vaccine will ultimately become available at lower cost for developing countries, where they are needed most.

Dr. Jackson says that there is significant potential benefit of a lower cost, effective vaccine for [babies](#) from birth in developing nations, and also to the healthcare system, children and their parents in developed nations such as New Zealand.

In the next few months, expectant parents will be given information about the trial and asked whether they wish to participate.

“This oral vaccine has been shown to be well tolerated. What we now need to know is how effective the vaccine is at protecting against the disease and how long protection lasts.”

Provided by University of Otago

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