

# Kūmara research offers hope for sleep-deprived parents

June 7 2023

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Kūmara could be a superior first food for babies, says Professor Clare Wall.  
Credit: University of Auckland

There's fresh hope for sleep-deprived parents, with a study into whether kūmara boosts babies' microbiome, potentially helping them sleep soundly and ward off viruses.

The Waipapa Taumata Rau, University of Auckland trial explores whether kūmara acts as a prebiotic, fostering [healthy bacteria](#) in baby's microbiome, and supporting immune development and sleep.

"One of the really critical periods in pregnancy is very early on in the first trimester, and the other is between when a baby's born till about five or six months of age," says Professor Clare Wall, principle investigator in the [SUN study](#).

"What babies first eat and what they're subjected to within their environment, really impacts on the way they grow and develop," says Professor Wall.

"When we talk about growth, it's not only their length and how much weight they gain, but it's also the brain's development, how their immune system develops, and, how their metabolism gets set up," Professor Wall says.

"Those early stages really define your trajectory for the rest of your life."

There has been a lot of research showing that breastfeeding supports the development of the baby's microbiome.

The microbiome refers to the microorganisms that grow in and on the body, with the largest concentration found in the large bowel.

"When a baby's being breastfed, they have certain types of bacteria that keep the bowel healthy and help the baby's immune system develop.

"But we don't know what happens when you start introducing [solid foods](#) and how that impacts on further development of the microbiome, but also of immune competence and metabolic function," Professor Wall says.

"We know that the [gut microbiome](#) is very important for signaling across the bowel into the body and to the brain. This gut-brain axis is like a

[communication network](#) that connects with your [immune system](#) and other important systems that regulate the way we process food.

"But we don't really know what optimal nutrition is, particularly for developing the microbiome and immunity."

The SUN study is using kūmara, which is already a popular food for babies. It also has prebiotics in it. These are dietary fibers and certain carbohydrates which nourish the bugs in the large bowel.

The study aims to examine whether the kūmara does influence the baby's microbiome and, in turn immunity.

The researchers are aiming to study 300 healthy babies, who are enrolled before they start solids.

The researchers use babies' stool samples before and after starting solids to analyze the effects of starting solid food, particularly kumara, on the microbiome.

If willing, mothers can also provide stool and breastmilk samples for analysis.

The study also records other aspects of the mother's and baby's diet, in order to assess the impact of breastfeeding and of kūmara on baby, compared with a control group.

"What mother eats affects their own microbiome and their breastmilk. So we're trying to see what there's any relationship between those things, and baby's microbiome and baby's immune competence," Professor Wall says.

The other aspect of the study is testing the effect on sleep.

"When you feed your bugs in the [microbiome](#) in your large bowel with carbohydrate-type foods, when they break them down, they produce short-chain [fatty acids](#). Those short chain fatty acids provide energy and are really important for keeping the gut healthy, but they also affect the signaling pathway," says Professor Wall.

"They are taken up into the blood and are really important for producing signals to the brain. Also, they can go to the liver to get broken down to be used as energy. And it's felt that some of those short-chain fatty acids provide us with greater amounts of energy than the others. This in turn may help babies sleep longer."

Trial manager, Dr. Robyn Lawrence says the hope is that dietitians will be able to provide good, research-based advice to parents on what solids to introduce babies to best help their long-term development.

"Being a dietitian, I use a lot of research-informed evidence to give people advice on what to feed their baby. And my view is, if we don't have the research, we don't really have a lot to base our recommendations on. So, our study is adding to that evidence base, so that we can make good recommendations for healthy babies and healthy families."

Provided by University of Auckland

Citation: Kūmara research offers hope for sleep-deprived parents (2023, June 7) retrieved 24 April 2024 from <https://medicalxpress.com/news/2023-06-kmara-sleep-deprived-parents.html>

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