

Poor nutrition leads to development of chronic diseases

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Credit: Peter Häger/Public Domain

International research involving the University of Adelaide has shown for the first time that poor nutrition – including a lack of fruit, vegetables and whole grains – is associated with the development of multiple chronic diseases over time.

The results of the study, which looked at health, diet and lifestyle data of more than 1000 Chinese people over a five-year period, are published in this month's issue of the journal *Clinical Nutrition*.

Researchers found that the proportion of those in the study with more than one chronic disease increased from 14% to 34% over the five years.

"Risk factors such as smoking, lack of physical activity and nutrition are already known to be linked to the development of chronic disease. But this is the first [time](#) research has shown that nutrition itself is directly associated with the development of multiple [chronic diseases](#) over time," says study co-author Dr Zumin Shi, from the University of Adelaide's School of Medicine.

"Those participants who ate more fresh fruit and [vegetables](#), and more [grains](#) other than wheat and rice, had better health outcomes overall.

"Grains other than rice and wheat – such as oats, corn, sorghum, rye, barley, millet and quinoa – are less likely to be refined and are therefore likely to contain more dietary fibre. The benefits of [whole grains](#) are well known and include a reduction in [cardiovascular disease](#), diabetes and colorectal cancer.

"Rice intake was significantly lower in the healthy group. This could be because rice is mainly refined and deprived of the benefits associated with fibres, and the kinds of phytochemicals that you find in whole grains," Dr Shi says.

He says the study highlights the role of micronutrients in protecting against disease. "A higher daily intake of iron, magnesium, phosphorous, vitamin C, potassium and vitamin B1 was associated with healthier participants," Dr Shi says.

"Based on our results, it seems that a higher intake of fruit helps to prevent against the onset of the first chronic disease, while a higher intake of vegetables helps to protect against developing more than one chronic disease.

"There is already a lot of general nutrition awareness among the population but this study reinforces the need for broad education programs about the benefits of healthy eating," Dr Shi says.

More information: Guillaume Ruel, Zumin Shi, Shiqi Zhen, Hui Zuo, Edeltraut Kröger, Caroline Sirois, Jean-Frédéric Lévesque, Anne W. Taylor, "Association between nutrition and the evolution of multimorbidity: The importance of fruits and vegetables and whole grain products," *Clinical Nutrition*, Volume 33, Issue 3, June 2014, Pages 513-520, ISSN 0261-5614, [dx.doi.org/10.1016/j.clnu.2013.07.009](https://doi.org/10.1016/j.clnu.2013.07.009).

Provided by University of Adelaide

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