Impact Case Study

UoA3B: Allied Health Professions, Dentistry, Nursing and Pharmacy (Biomedical Sciences)

Riboflavin, MTHFR genotype and blood pressure treatment

Exciting research investigating the association between nutrition and genetic risk, undertaken by Nutrition researchers at Ulster University has demonstrated that vitamin B2 (also known as riboflavin) can significantly reduce blood pressure, specifically in people with a common genetic varian. This genetic factor, called the MTHFR 677TT genoytype involves the body's handling of another closely related B-vitamin, folate or folic acid. The extent of blood pressure-lowering is as good as that expected from blood-pressure lowering prescription drugs and better than that found with most dietary approaches. Furthermore, the effect is independent of concurrently prescribed blood pressure-lowering drugs.

The number of people in this genetically at-risk group varies across the world - about 10% of people globally, but as many as 32% of people in Mexico and Northern China. Thus, riboflavin treatment offers a novel, targeted approach to lowering blood pressure in a very high proportion of people in populations throughout the world with the relevant genetic factor. These results have important implications for a personalised approach to the management of high blood pressure the most important risk factor for cardiovascular disease and stroke accounting for an estimated 9 million deaths worldwide annually.

The findings of this work, offering an effective non-drug treatment for blood pressure in a significant proportion of populations globally will have important impact in terms of preventing and treating disease and related commercial opportunities. The work has led to considerable engagement with the food industry to date in the development of cost effect personalised nutrition for preventing high blood pressure in people with this common genetic risk factor.