

## ***Impact Case Study***

### **UoA 3B: Allied Health Professions, Dentistry, Nursing and Pharmacy (Biomedical Sciences)**

#### **Folate, health policy and the consumer**

##### **Summary**

For over 20 years, conclusive evidence has existed that folate – and its synthetic vitamin form, folic acid – in early pregnancy prevents neural tube defects (NTD) such as spina bifida. This case study is focused on identifying and addressing the issues in implementing current folic acid policy into practice in healthy populations, and also investigating newer roles for folate in disease prevention from early life to old age.

##### **Impacts**

Folic acid recommendations are in place worldwide aimed at preventing NTD in early pregnancy, but translating these recommendations into practice by consumers is very challenging. Also although there are proven beneficial effects of folic acid in preventing NTD, there are also potential adverse effects. Our international outputs to date have provided a scientific foundation for developing evidence-based policy in this area and its translation to consumers. In particular Ulster University's work has done much to inform policymakers on the risk-benefit debate surrounding folic acid fortification of food.

Ulster University's research findings have also begun to address the influence on disease risk of common genetic variations and their interactions with folate and related B-vitamins. This work has contributed to the evidence base to support these newer roles for folate throughout the lifecycle, such as protecting against the development of heart disease, stroke and certain cancers, and maintaining cognitive function and bone health.

Ulster University's work has also done much to inform scientists and policymakers on two particular aspects of food and nutrition policy:

##### **1. Dietary Folate Recommendations**

In revising dietary recommendations for folate in the United States in 1998, a new direction was adopted, namely expressing the recommended levels as dietary folate equivalents (DFE). The DFE recognised for the first time the much lower bioavailability or absorption of natural food folates compared to folic acid. This decision was influenced considerably by Ulster University findings.

##### **2. Food Fortification Policies**

A policy of mandatory folic acid-fortification of cereal grains was implemented in 1998 by the US government. This was deemed necessary because we had reported that alternative strategies for NTD protection recommending increasing folate intake from natural food sources were ineffective.

Our research continues to inform health services and regulatory authorities, for example, in reports by the Health Council of the Netherlands, the Food Safety Authority of Ireland and

US Center for Disease Control and Prevention (CDC).

Global impact for populations and the consumer

Ulster's work has contributed substantially to the scientific evidence base, and has included contributions to fora such as the Flour Fortification Initiative (FFI), which is striving to encourage folic acid fortification of grain foods on a mandatory basis worldwide.

Links with industry are also proving highly relevant. The Kellogg Company presented Ulster University's findings at a 2009 meeting of the Food and Health Forum, a UK parliamentary committee on food policy; and Ulster's portfolio of media citations includes numerous features on websites associated with the food industry and the provision of scientifically based nutrition information to health professionals and consumers.

Ulster University's outputs have therefore provided a scientific foundation for developing evidence-based policy in relation to folic acid that has had significant impacts and in translating this policy to consumers.