



## **Annual Dairy Council for Northern Ireland Lecture 2023**

### **‘Dairy and Bone Health – from the Bronze Age to Balmoral’**

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Osteoporosis is a common but often silent condition affecting 3 million people across the UK alone. 1 in 2 women and 1 in 5 men will suffer a broken bone after the age of 50. While many effective drugs are available to increase bone density and reduce fracture risk, targeting at risk populations is difficult, and medical care is expensive.

In 2021, a study was published in the BMJ lead by Dr Sandra Iuliano from the University of Melbourne, which showed that increasing by a modest amount the calcium and protein intake of care home residents in Australia, achieved by increasing intake of dairy products according to the residents’ own tastes, a reduction in the incidence of hip fracture by almost 50% was seen in just 2 years. The impact of this in Northern Ireland, where there are over 2000 hip fractures per year, and where over 10% of people breaking their hip go into permanent residential care as a result, is obvious.

The link between better musculoskeletal health and dairy produce is not new. Dairy farming first developed in Anatolia around 7000BC, spreading gradually across Europe and was evident in Ireland from at least 3800BC. Evidence for this includes art, animal bones and secondary product pottery, but also isotope analysis of lipid residues in pottery, and the persistence of the lactase gene in some populations. Persistence of lactase and the ability to drink milk is associated with larger skeletons, the ability to travel and live in areas where arable farming is impossible, and possibly with better immunity and higher fertility rates. The use of milk and other dairy produce is attested to in a range of Classical authors, including famous physicians like Galen and Hippocrates. Osteoporosis is likewise seen in the archaeological record from the late Stone Age, in medieval art and then properly described by several physicians and scientists in the 19<sup>th</sup> and 20<sup>th</sup> centuries.

Although a plentiful supply of nutritious food and a range of effective medicines is now available in the Western world, recent years has seen a rise in people choosing alternative diets. This might be done for a range of reasons, but dairy produce is commonly targeted for avoidance by many different groups. Despite information widely promoted on the internet, there is no evidence that dairy produce can cause osteoporosis, heart disease or cancer, and indeed on the contrary good evidence that dairy can be beneficial for aspects of all these conditions. Leading medical and nutritional guidelines continue to recommend dairy produce as part of a balanced and healthy diet.

Dairy farming and dairy produce have contributed to the spread of civilisation and good musculoskeletal health across the millennia, and for many conditions milk still represents the ultimate preventative medicine.