

# How biscuits enriched with protein could keep the UK's aging population strong

25 September 2019, by Alex Johnstone and Madeleine Myers



Could biscuits be the answer when it comes to helping old people retain their strength? Credit: [Shutterstock](#)

The world's aging populations are increasing every year. In 2016, [18%](#) of the UK's population was aged 65 years or older—by 2046, this group will account for nearly a quarter of the people living in the British Isles.

Add to this the fact that normal aging is associated with a gradual decline in muscle mass, known as [sarcopenia](#) which can impair muscle function and strength, it is crucial, now and in the future, to prolong people's health span and their ability to be active and live independently. For that we need to understand the role of dietary intake of [protein](#) to promote healthy and active aging.

[New evidence](#) suggests that current dietary recommendations for protein intake may be insufficient to achieve this goal and that individuals might benefit by increasing their intake and frequency of consumption of high-quality protein.

From the third decade of life we begin to lose [muscle mass](#) and, scarily, losses of between [30 to 50%](#) have been reported between the ages of 40

and 80. Loss of muscle function and strength reduces the ability to perform everyday tasks and also increases the risk of falling.

So what can we do about it? Current UK dietary recommendations for protein intake in adults is set at 0.75g/kg of body weight per day regardless of age. But international recommendations specifically for older people vary between 1.2 and 1.5g/kg/day—although these do not take account for physical activity level. From mid-life onwards, adults may [benefit from a greater intake of protein](#) to slow the aging of muscles. Looking at the current UK intake of protein, there seem to be key areas for improvement:

- 1. Protein amount:** The amount of protein intake tends to decline with age, partially due to what is called [anorexia of aging](#), which happens when older people don't eat regularly enough. The latest [National Diet and Nutrition Survey \(NDNS\) data](#) indicates that one in three of over-40s do not meet the lower UK target of protein intake, and more than 80% fail to meet the international recommendations for healthy aging.
- 2. Distribution of protein intake:** Consumption of two to three meals or snacks each containing [25 to 30g protein](#) throughout the day is required for muscles to function at their best. However, estimates of [protein intake](#) in adults in mid-life indicate protein-rich meals tend to be eaten towards the [end of the day](#), at lunch or dinnertime.
- 3. Type of protein:** In the UK the main source of protein in the diet is from animal sources such as meat, dairy and fish. Increasing intake of [plant-based proteins](#) such as pulses, cereal products and nuts might be a more sustainable dietary pattern.

## Taking the biscuit

Our [research](#) is part of the [Protein For Life](#) project, a recent partnership between academia and

industry which aims to address the issue of declining muscle function due to malnutrition.

As part of this project, higher-protein biscuits were formulated containing different amounts of protein—either 12% or 20% of total energy coming from protein. To put this in perspective, a typical digestive biscuit has around 6% of total energy coming from protein. Products were also enriched with different sources of protein: animal protein (whey powder) or plant protein (peanut butter, soya and wheat crispies). Higher-protein biscuits offer a handy on-the-go snack which can top up protein anywhere, at any time, and help spread intake throughout the day.

According to [current legislation](#) for front-of-pack labeling, these products could also be labeled as a "source of protein" or "high in protein" for the 12% and 20% protein biscuits respectively, alerting consumers to their "protein power."

A group of older adults (40 and upwards) took part in a blind test to find out which biscuit (and therefore level of protein enrichment) was preferred, and whether they tasted good. Biscuit tasting at the trial site in Aberdeen (one of four across the UK) revealed that the source-of-protein biscuits (12%) were favored over the high-protein biscuits (20%). This suggests that consumers might favor a more subtle approach to reformulating much-loved products with extra protein.

Although members of the test group were divided over the type of protein used, more indicated that they generally prefer plant over animal sources of protein. This potentially identifies a niche for food products enriched with plant proteins specifically, which would help to reduce the environmental impact of the protein-enriched biscuit. From our research into the use of plant proteins to support healthy aging, we have created a [framework for action](#) that explains clearly the issues facing the elderly—and what can be done by the government, the food industry and consumers themselves.

Our study raises important points about how the foods we eat affect our long-term health and our environment. Enriching biscuits with protein is a simple and easy way to ensure older people keep

their protein levels at a constant level. It could help contribute to prolonged health and independence, and crucially, mean a better quality of life in old age.

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