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Characterising dietary protein intake in Irish adults on the island of Ireland

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Shifting dietary protein intakes from animal to plant-based sources is suggested as a path to sustain the world's food consumption and maintain planetary resources⁽¹⁾. However, to facilitate change, it is important to characterise baseline dietary protein patterns. This study aimed to examine dietary protein intakes on the island of Ireland in order to determine population characteristics and food sources influencing protein intake.

Analyses were performed on the Northern Ireland sub cohort of the UK National Dietary Nutrition Survey (NDNS 2016-2019)⁽²⁾ and the Irish National Adult Nutrition Survey (2008-2010)⁽³⁾. Both surveys used a four-day food diary and a final sample of 1484 adults, aged 18-64 years was extracted (NANS; n=1274 and NI NDNS; n=210). Mean daily intakes for protein (MDI; % total energy, TE) for the total population were calculated and the population was divided into three tertile groups based on low, medium and high protein intake (%TE). Differences in population characteristics, energy MDI, key nutrients (%TE or per 10MJ) and contributing food sources were examined across these tertiles, using chi-square and one-way ANOVA with covariates (age and BMI) and correcting for multiple comparisons as appropriate ($P<0.005$).

Overall, 17.1% of TE was obtained from protein and 77% of participants met their protein DRV based on EFSA recommendations of 0.83g/kg/body weight⁽⁴⁾. The difference in protein intakes between the highest and lowest tertiles was 7.8% TE (21.2% TE vs 13.4% TE) with high protein consumers reporting lower energy intakes (1734 ± 564 kcal) compared to low consumers (2185 ± 661 kcal). High protein consumers were older (42.5 ± 12.8 years) and had a higher BMI (27.7 ± 6.0 kg/m²). They also had higher MDI of dietary fibre, calcium, zinc, sodium, iron, folate and vitamins A, C, D and B₁₂ (per 10MJ) ($p<0.001$) and lower MDI of carbohydrates, fat, saturated fat (%TE) in comparison to low consumers ($p<0.001$). The % contribution of 'chicken, turkey and dishes' (18.3%), 'beef, veal and dishes' (12.8%) and 'fish and fish products' (7.0%) to protein intakes were significantly higher in the high versus the low consumption group (10%, 7.4%, 4.4% TE respectively; $P<0.001$). In contrast, those in the lowest protein intake group had a significantly higher intakes of protein coming from dietary sources including 'burgers, sausages and meat products' (9.9 vs 5.9%), 'white bread and rolls' (6.9 vs 3.9%), 'potatoes (including chips)' (4.1 vs 2.9%) and 'cakes, pastries, buns and fruit pies' (1.7 vs 0.8%) compared to high consumers.

In general, animal protein sources contributed more to total daily protein intakes than plant sources, however, the pattern of protein foods differed according to level of protein intake. These findings will aid in the development of strategies to diversify protein intakes on the Island of Ireland.

References

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