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## Differences in food intake and diet quality in vegans, vegetarians and omnivores in Belgium

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Meat, meat products and other animal-derived foods are major sources of certain vitamins, minerals and amino-acids<sup>(1)</sup>. Consequently, there is a risk that when animal products are insufficiently substituted by nutritious plant-based foods, a vegetarian or vegan diet could possibly lead to inadequacies for certain nutrients. Little is known about the quality of the diet of Belgian vegans and (semi-)vegetarians in comparison with Belgian omnivores and their compliance with the food based dietary guidelines (FBDG)<sup>(2)</sup>.

The aim of this cross-sectional study was to examine the diet quality of vegans, vegetarians, semi-vegetarians and omnivores using a diet quality index (DQI)<sup>(3)</sup> especially developed alongside the Belgian food based dietary guidelines (FBDG) and compared these dietary patterns in a representative sample of the Belgian population.

A representative sample (n = 3,039) from the 2004 Belgian food consumption survey<sup>(4)</sup> and additional participants recruited through a Belgian vegetarian organization and Universities in Ghent (n = 1,803) completed an online questionnaire including a self-reported food frequency questionnaire (FFQ). Totaling n = 123 vegans, n = 623 vegetarians, n = 704 semi-vegetarians and n = 3,392 omnivores, of which 72% were female. A DQI based on Belgian FBDG and consisting of the four index parameters: meal, diversity, equilibrium and quality was calculated and compared between dietary patterns.

None of the dietary pattern groups were fully compliant with the FBDG. However, all dietary pattern groups did meet the minimum recommendation for protein sources. Recommendations for dairy or calcium-fortified drinks were not met in any of the dietary pattern groups, although vegans, vegetarians, and semi-vegetarians consumed at least 1.7 times more milk or soya drinks than omnivores. DQI scores were significantly higher in vegan men and vegetarian and semi-vegetarian women compared to omnivores (P < 0.05).

In conclusion, vegans, vegetarians and semi-vegetarians appear to adequately compensate for the absence or reduced intake of animal protein, and conform to the FBDG as much as, or better than omnivores. However, none of the dietary patterns complied with all the Belgian dietary recommendations.

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