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# **Development of a diet quality index for the Scottish population**

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#### Background

A diet quality index (DQI) is a useful tool that provides an overall rating of an individual's dietary intake in reference to nutrient and/or dietary recommendations<sup>(1)</sup> or a diet pattern that is considered to be beneficial to health<sup>(2)</sup>. Numerous diet quality indices have been created as summary measures of diet, but to our knowledge, none are available that include all of the Scottish Dietary Goals<sup>(3)</sup>. The purpose of this work was to explore the feasibility of developing a DQI to be used with food purchase data to assess the quality of the Scottish Diet.

Results

The DQI was distributed across the

#### Methods

A DQI scoring system was devised in collaboration with advisors from Food Standards Scotland. For ease of interpretation, the DQI score was converted to a percentage score. Annual household food purchase data from 2001 to 2012, for Scotland, from the UK Living Costs and Food Survey were analysed to estimate the mean DQI of the Scottish population.

Food / Nutrient	Scoring	Rationale
<b>Fruit and Vegetables</b> Sliding score 0 to 10. Fruit/ vegetable juice adjusted by a 150ml = 80g factor.	Weight divided by 400g x 10 Min Score = 0; Max Score = 10	≥400g / day WHO/FAO expert consultation on diet, nutrition and prevention of chronic diseases. (WHO, 2003)
Fish Addition of scores from Oily and White Fish. <i>Oily Fish</i> Sliding score from 0 to 10 <i>White Fish</i> Sliding score from 0 to 5	Sliding scale 0 to 10, with scores between 10 and 15 adjusted to 10 Min Score = 0; Max Score = 10 Weight divided by 280g x 10 Min Score = 0; Max Score = 10 Weight divided by 140g x 5 Min Score = 0; Max Score = 5	"Eat at least two 140g portions of cooked fish per week, of which one should be oily" (Scientific Advisory Committee on Nutrition (SACN), 2004)
Meat and Meat Products Addition of Scores from Red Meat and Processed Meat <i>Total Red and Processed Meat</i> Score of 0 or 5 <i>Processed Meat</i> Score of 0 or 5	Score out of 10 Min Score = 0; Max Score = 10 ≤71.4g / day = 5; >71.4g / day = 0 0g / day = 5; >0g / day = 0	"People who eat red meat to consume less than 500g (cooked red meat) a week, very little if any to be processed" (WCRF / AIRC, 2007)
Fat Score of 0 or 10 Saturated Fat	<pre>≤35% food energy = 10 &gt;35% food energy = 0 <pre>≤11% food energy = 10</pre></pre>	<pre>SDT and DRV ≤35% food energy (Scot. Office, 1993; DofH, 1991) SDT and DRV ≤11% food energy</pre>
Score of 0 or 10 Intrinsic , Milk Sugars and Starch Score of 0 or 10	<pre>&gt;11% food energy = 0 ≥39% food energy = 10 &lt;39% food energy = 0</pre>	(Scot. Office, 1993; DoH, 1991) DRV ≥39% food energy (DoH, 1991)
NME Sugars Score of 0 or 10	≤11% food energy = 10 >11% food energy = 0	DRV ≤11% food energy (DoH, 1991)
NSP Score from 0 to 10	Weight divided by 18g x 10 Min Score = 0; Max Score = 10	DRV 18g per day (DoH, 1991)
Alcohol Score of 0 or 5	≤5% total energy = 5 >5% total energy = 0	≤5% energy (DoH, 1991)

population, the mean for the combined period of 2001 to 2012 was 36.5%.



Only a small proportion (less than 1%) of the population scored highly indicating adherence to most of the targets. Positive Spearman's correlations were found between the DQI score, and folate (r=0.448; p<0.001) and vitamin C intakes (r=0.331; P<0.001) (per 2000kcal (8368kJ)) indicating that the DQI was positively associated with other aspects of the diet.

#### Conclusion

The score provides an indication of the quality of the diet based on current dietary guidelines, which can be assessed for relationships with socioeconomic status, household composition and the environmental impact of dietary choices.

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Funded by Food Standards Scotland (S14034 / FS424018). Data from DEFRA, SNS, ONS and UK Data Archive.











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