

Go Vegan Scotland Encourages Scottish Government to Introduce Measures Designed to Promote Access to Whole Plant-Based Foods

Scottish Consultation on Diet, Weight and Health

In October 2017 the Scottish Government opened a consultation on proposals for improving diet and weight in Scotland ("the Consultation"): https://consult.gov.scot/health-and-social-care/a-healthier-future/user_uploads/00526543.pdf <http://www.gov.scot/Publications/2017/10/1050/>

The Consultation closed on 31 January 2018. Go Vegan Scotland made a submission, which is quoted below. It is our hope that the Scottish Government will give serious consideration to the studies we referred to and to the potential benefits (in terms of health, the economy, the environment and of course for non-human animals) of adopting our proposals. We have invited Scottish Government representatives and advisors to attend the first conference in Scotland on Plant-Based Nutrition for Medical Professionals on 30 June 2018 in Glasgow (for details of that event see: <https://www.facebook.com/events/1672380982829051/>) We very much hope that they will take us up on this.

The Consultation sits as an element of the Scottish Government's Good Food Nation project, which includes a vision for what we should aim to achieve by 2025: <http://www.gov.scot/Topics/Business-Industry/Food-Industry/national-strategy/good-food-nation>

The vision of the Good Food Nation is described as:

"Our aspiration is that Scotland is a Good Food Nation, a country where people from every walk of life take pride and pleasure in, and benefit from, the food they buy, serve, and eat day by day. This will require a step change and mean that:

- *It is the norm for Scots to take a keen interest in their food, knowing what constitutes good food, valuing it and seeking it out whenever they can.*
- *People who serve and sell food – from schools to hospitals, retailers, cafes and restaurants – are committed to serving and selling good food.*
- *Everyone in Scotland has ready access to the healthy, nutritious food they need.*
- *Dietary-related diseases are in decline, as is the environmental impact of our food consumption.*
- *Scottish producers ensure that what they produce is increasingly healthy and environmentally sound.*

- *Food companies are a thriving feature of the economy and places where people want to work.*
- *Other countries look to Scotland to learn how to become a Good Food Nation”.*

The Consultation on improving diet and weight sits within this broader project. As this Consultation does not touch on the environmental objectives mentioned in the Good Food Nation vision, we hope that there will be a consultation on the environmental aspects in due course.

The Executive Summary for the Consultation on diet and weight set the scene:

“This consultation document proposes a range of action to improve diet and weight in Scotland. It draws on experience of implementing the Obesity Route Map, the learning from tackling other public health challenges such as alcohol use and smoking, and a growing body of evidence on the action necessary to improve the health of the whole population.

Tackling obesity has already been identified as a priority in Programme for Government with key commitments to limit the marketing of food high in fat, sugar and salt and provide more support for people with type 2 diabetes to lose weight. In launching the consultation, the Government announced funding of £42 million over the next 5 years to expand these services.

Other proposals include:

- *action on junk food advertising*
- *action on food purchases for consumption outside the home*
- *preventative services including information, advice and support for children and families on healthy eating*
- *practical support for small & medium sized food manufacturers to reformulate and develop healthier products*
- *a range of opportunities for people to be more active*
- *working with the public sector and a wide range of partners to support local improvement work on diet & weight*

We want to hear the views of a wide range of stakeholders on our proposals, the priorities, implementation, and - looking ahead - what more should be done. The evidence on how best to tackle obesity continues to develop so we regard this as a progressive plan of action on which we are open to new ideas and thinking.”

While Go Vegan Scotland is a vegan advocacy group focused on the rights of non-human animals and the promotion of veganism as the way in which we recognise those rights, there is clearly an intersection between:

- (1) veganism;

- (2) the nutrition and health benefits of a whole foods plant-based diet;
- (3) the environmental benefits of transitioning from using animals as commodities to growing food, and
- (4) a number of related human rights including: access to food and accurate information on nutrition, health and animal rights; worker rights and food poverty.

In recognition of that intersection, Go Vegan Scotland made a submission to the Consultation focused on the food and health issues that have been raised. We did not focus on animal rights, as the Consultation questions do not lend themselves to that and responses focusing on those issues are likely to be disregarded as off topic. We did note, however, that adopting our proposals would not only be incredibly positive in terms of health, but also in terms of the environment and animal rights. We will be making submissions to other consultations opened as part of the Good Food Nation project, some of which are likely to allow for more of a focus on animal rights.

Please share this information with your MP's, medical professionals and any other interested parties, in order that we can encourage those with input to consider the available evidence in support of a whole foods plant-based diet.

Go Vegan Scotland Submissions to Scottish Consultation on Diet, Weight and Health

Submissions were required to follow the format of the Consultation document, providing answers to specific questions. We set out below the Consultation questions and our responses:

QUESTION 1 : "The Scottish Government is minded to act to restrict price promotion on food and drink products which are high in fat, salt and sugar. This could include:

- multi-buy;
- X for Y;
- temporary price promotions.

Are there any other types of price promotion that should be considered in addition to those listed above?

Answer 1

Yes

Please explain your answer:

Promotion of Nutrient Dense, Healthful Foods

The measures being given active consideration appear to focus on the aim of reducing the consumption of certain food types. As important, if not more important, in terms of health and nutrition is encouraging people to consume the nutrient dense foods our bodies need for health and vitality. Many people in Scotland are not obtaining adequate nutrients for the promotion of good health because they are not consuming sufficient quantities of whole plant foods.

There is now a substantial body of peer-reviewed research which indicates that a diet rich in whole plant foods is best for human health. Whole food plant-based (“WFPB”) diets emphasise legumes, whole grains, vegetables, fruits, nuts, and seeds.

A WFPB diet, free of all animal derived products, is nutritionally adequate and has been shown to have a significant impact in terms of reducing the likelihood of suffering from many of our most prominent fatal illnesses, including type 2 diabetes, heart disease and many types of cancer, as well as countering obesity, high blood pressure and improving mental health. It has also been shown that adopting a WFPB diet can have a significant impact in terms of treating illnesses once they develop.

In considering measures to promote health and tackle disease we have a duty to review the most up to date information. The relevant studies include:

- **Position of the Academy of Nutrition and Dietetics: Vegetarian Diets J Acad Nutr Diet. 2016;116:1970-1980:** “It is the position of the Academy of Nutrition and Dietetics that appropriately planned vegetarian, including vegan, diets are healthful, nutritionally adequate, and may provide health benefits for the prevention and treatment of certain diseases. These diets are appropriate for all stages of the life cycle, including pregnancy, lactation, infancy, childhood, adolescence, older adulthood, and for athletes.....vegans are at reduced risk of certain health conditions, including ischemic heart disease, type 2 diabetes, hypertension, certain types of cancer, and obesity.”
- **Hever J & Cronise RJ. (2017) Plant-based nutrition for healthcare professionals. Journal of Geriatric Cardiology) 14: 355-368.** “Ultimately the dietary change needed in society requires the leadership of all healthcare professionals. A whole food, plant-based diet pattern can be easily achieved and is at least one solution to the tremendous socioeconomic burden that nutritionally-induced, non-communicable chronic diseases places on all of humanity....Plant-based diets are associated with lowering overall mortality and ischemic heart disease mortality; reducing medication needs; supporting sustainable weight management; reducing incidence and severity of high- risk conditions, such as obesity and obesity-related inflammatory markers, hyperglycemia, hypertension, and hyperlipidemia; and even reversing advanced cardio-vascular disease and type 2 diabetes.....These advantages are likely the result of both the consistent consumption of innate health-promoting compounds found in whole plant foods and the reduction of exposure to harmful substances found in animal products and highly pro-cessed foods. Meat (including processed, red, and white assortments), fish, dairy, and eggs contain health-damaging saturated fats, heme iron, N-glycolylneuraminic acid (Neu5Gc), carnitine, and chemical contaminants formed when flesh is cooked, such as polycyclic aromatic hydrocarbons, hetero-cyclic amines, and advanced glycation end products. Highly processed foods encompass a class of commercially produced items made with adulterants including oils, salts, sugars, and other food additives. These aforementioned constituents in animal products and processed foods contribute to inflammation, oxidation, and carcinogenesis, promoting disease and, therefore, are better omitted from the diet. “

- **A study conducted by researchers at the Oxford Martin Programme on the Future of food in 2016**, which considered the potential health, environmental and financial benefits of four types of diet by the year 2050, concluded that the fewer animal products consumed the greater the benefits. They found that adopting a vegan diet could avoid 8.1 million deaths globally. This was due to a combined impact of cutting out meat and increasing intake of fruit and vegetables. They concluded: "Our analysis indicates that dietary changes toward fewer animal and more plant-based foods are associated with significant benefits due to reductions in diet-related mortality." In terms of the economic benefits, they found that the US alone could save \$700-\$1,000 billion per year on healthcare and lost work days. There was also an economic benefit in terms of reduced greenhouse gas emissions of as much as \$570 billion. The study highlights the specific impact on coronary heart disease, stroke, cancer and type 2 diabetes. <http://www.pnas.org/content/113/15/4146.long>
- **Tonstad S, Butler T, Yan R, Fraser GE. (2009) Type of vegetarian diet, body weight and prevalence of type 2 diabetes. Diabetes Care. 32(5):791-796.** "This study demonstrates that while elimination of animal flesh from diet is beneficial, the more closely diet approaches complete elimination of animal foods, the better the outcome with respect to Type 2 diabetes.. ..The main finding was that vegan and lacto-ovo vegetarian diets were associated with a nearly one-half reduction in risk of type 2 diabetes compared with the risk associated with nonvegetarian diets after adjustment for a number of socioeconomic and lifestyle factors, as well as low BMI, that are typically associated with vegetarianism. Pesco- and semi-vegetarian diets were associated with intermediate risk reductions: between one-third and one-quarter. These data indicate that vegetarian diets may in part counteract the environmental forces leading to obesity and increased rates of type 2 diabetes, though only vegan diets were associated with a BMI in the optimal range. Inclusion of meat, meat products, and fish in the diet, even on a less than weekly basis, seems to limit some of the protection associated with a vegan or lacto-ovo vegetarian diet. These findings may be explained by adverse effects of meat and fish."
- **Crowe FL, Appleby PN, Travis RC, Key TJ. (2013) Risk of hospitalization or death from ischemic heart disease among British vegetarians and nonvegetarians: Results from the EPIC-Oxford cohort study. Am J Clin Nutr. 97(3):597-603.** "The results from this prospective analysis involving 15,000 vegetarians and 30,000 nonvegetarians with 1200 cases of IHD show that vegetarians in the United Kingdom have a 32% lower risk of developing IHD than do people who consume meat and/or fish."
- **Rizzo NS, Sabaté J, Jaceldo-Siegl K, Fraser GE. (2011) Vegetarian dietary patterns are associated with a lower risk of metabolic syndrome: The Adventist Health Study 2. Diabetes Care.2011;34(5):1225-1227.**
- **Pettersen BJ, Anousheh R, Fan J, Jaceldo-Siegl K, Fraser GE. (2012) Vegetarian diets and blood pressure among white subjects: Results from the Adventist HealthStudy-2 (AHS-2). Public Health Nutr.2012;15(10):1909-1916.** "This study demonstrates that complete elimination of animal foods from diet has more favourable results in term of hypertension than other diets."
- **Wang F, Zheng J, Yang B, Jiang J, Fu Y, Li D. (2015) Effects of vegetarian diets on blood lipids: A systematic review and meta-analysis of randomized controlled trials. J Am Heart Assoc. 2015;4(10):e002408.** "This systematic review and meta-analysis provides evidence that vegetarian diets effectively lower blood concentrations of total cholesterol, low-density lipoprotein cholesterol, high-density lipoprotein cholesterol, and non-high-density lipoprotein cholesterol. Such diets could be a useful nonpharmaceutical means of managing dyslipidemia, especially hypercholesterolemia. Dslipidemia is a primary risk factor for the development of cardiovascular diseases, such as heart disease, stroke, and coronary artery disease."
- **Huang T, Yang B, Zheng J, Li G, Wahlqvist ML, Li D. (2012) Cardiovascular disease mortality and cancer incidence in vegetarians: A meta-analysis and systematic review.**

Ann Nutr Metab. 2012;60(4):233-240. “Our results suggest that vegetarians have a significantly lower ischemic heart disease mortality (29%) and overall cancer incidence (18%) than nonvegetarians.”

- **Ornish et al (1990) Can lifestyle changes reverse coronary heart disease? The Lifestyle Heart Trial. The Lancet, 336: 129-33.**
- **Esslestyn et al (2014) A way to reverse CAD? The Journal of Family Practice, Vol 63, No 7.** “The results of this evaluation provide further evidence that plant-based nutrition may prevent, halt, and reverse CAD.”
- **Esselstyn, BC (2017) A plant-based diet and coronary artery disease: a mandate for effective therapy. Journal of Geriatric Cardiology 14: 317-320.**
- **Ornish, D, Weidner, G Fair, WR et al (2005) Intensive lifestyle changes may affect the progression of prostate cancer. J Urol, 174(3):1065-9 in Greger, M (2016) How Not To Die, McMillan: London.**
- **Hana Kahleova, ID, Susan Levin, and Neal Barnard (2017) Cardio-Metabolic Benefits of Plant-Based Diets, Nutrients 2017, 9, 848.** “Evidence suggests that plant-based diets may reduce the risk of coronary heart disease events by an estimated 40% and the risk of cerebral vascular disease events by 29%. These diets also reduce the risk of developing metabolic syndrome and type 2 diabetes by about one half. The use of plant-based diets as a means of prevention and treatment of cardio-metabolic disease should be promoted through dietary guidelines and recommendations. Plant-based diets are associated with decreased all-cause mortality and decreased risk of obesity, type 2 diabetes, and coronary heart disease. Plant-based diets are characterized by a reduction or elimination of animal product consumption.” “BMI values tend to increase with increasing frequency of animal product consumption. In the Adventist Health Study-2, BMIs were lowest among vegans (23.6 kg/m²), higher in lacto-ovo-vegetarians (25.7 kg/m²), and highest in nonvegetarians (28.8 kg/m²).” “Diabetes prevalence has been found to be the lowest among vegans (Odds ratio (OR) 0.51; 95% CI 0.40–0.66) and lacto-ovo-vegetarians (OR 0.54; 95% CI 0.49–0.60), compared with non-vegetarians....The benefit of omitting meat, cheese, and eggs was as much as 0.7 points in some studies, and averaged about 0.4 points overall.” “High protein intake, especially from meat, increases blood pressure. High potassium intake, however, lowers blood pressure among people with hypertension. Vegetarian diets typically have higher fiber and potassium and lower fat, compared with omnivorous diets....“a recent meta-analysis of randomized clinical trials and observational studies showed clear benefits of plant-based diets for blood pressure. Given the consistent results between the studies, the evidence is strong.” “Saturated fat increases plasma LDL cholesterol concentrations. According to a report published by the American Heart Association, replacing saturated fat in the diet and replacing it with polyunsaturated vegetable oil can reduce the risk of cardiovascular disease by about 30%, similar to the effect of statins. The authors concluded that the incidence of cardiovascular disease (CVD) would decrease with such a dietary shift. Dietary cholesterol increases serum total and LDL-cholesterol concentrations. Dietary cholesterol is found only in animal products including meat, dairy, and eggs. Vegetarian and especially vegan dietary patterns improve both fasting and postprandial blood lipids compared with conventional therapeutic diets, with effects similar to those seen with statin therapy. In summary, the findings of interventional trials are in accordance with those of observational studies, and the evidence for improved blood lipid profiles in response to plant-based diets is strong.”
- **Esselstyn, CB (2000) In cholesterol lowering, moderation kills. Cleveland Clinical Journal of Medicine, Vol 67. No 8.** “The high-fat American diet is responsible for an epidemic of coronary artery disease. A plant-based diet with less than 10% fat will prevent coronary disease from developing, halt the progress of existing disease, and even reverse the disease in many patients. “
- **Roberts WC (2010). It's the cholesterol, stupid! Am J Cardiol. Nov 1;106(9):1364-6.**

- **Kim Allan Williams (2017) Introduction to the “A plant-based diet and cardiovascular disease” special issue J Geriatr Cardiol 2017; 14: 316.** “...the “truth” (i.e. evidence) for the benefits of plant-based nutrition continues to mount. This now includes lower rates of stroke, hypertension, diabetes mellitus, obesity, myocardial infarction and mortality, as well as many non-cardiac issues that affect our patients in cardiology, ranging from cancer to a variety of inflammatory conditions....Our goal must be to get data out to the medical community and the public where it can actually change lives—creating healthier and longer ones...Reading the existing literature and evaluating the impact of plant-based nutrition, it clearly represents the single most important yet underutilized opportunity to reverse the pending obesity and diabetes induced epidemic of morbidity and mortality.”
- **Spencer EA, Appleby PN, Davey GK, Key TJ. (2003) Diet and body mass index in 38000 EPIC-Oxford meat-eaters, fish-eaters, vegetarians and vegans. Int J Obes Relat Metab Disord.27(6):728-734.** “Vegans had the lowest mean age-adjusted BMI and meat-eaters the highest. The difference in mean BMI between vegans and meat-eaters was 1.92 kg/m² in men and 1.54 kg/m² in women. Mean age-adjusted BMI in both fish-eaters and vegetarians was significantly less than mean age-adjusted BMI in meat-eaters, but significantly greater than mean age-adjusted BMI in vegans.”
- **Turner-McGrievy GM, Barnard ND, Scialli AR. (2007) A two-year randomized weight loss trial comparing a vegan diet to a more moderate low-fat diet. Obesity. 15(9):2276-2281.**
- **Barnard NB, Levin SM, Yokoyama Y. (2015) A systematic review and meta-analysis of change in body weight in clinical trials of vegetarian diets. J Acad Nutr Diet. 115(6):954-969.**
- **Barnard N, Cohen J, Jenkins DJ, et al. (2006) A low-fat vegan diet improves glycemic control and cardiovascular risk factors in a randomized clinical trial in individuals with type 2 diabetes. Diabetes Care. 29(8):1777-1783**
- **Barnard ND, Katcher HI, Jenkins DJ, Cohen J, Turner-McGrievy G. (2009) Vegetarian and vegan diets in type 2 diabetes management. Nutr Rev.67(5):255-263.** “Vegetarian and vegan diets offer significant benefits for diabetes management. In observational studies, individuals following vegetarian diets are about half as likely to develop diabetes, compared with non-vegetarians. In clinical trials in individuals with type 2 diabetes, low-fat vegan diets improve glycemic control to a greater extent than conventional diabetes diets. Although this effect is primarily attributable to greater weight loss, evidence also suggests that reduced intake of saturated fats and high-glycemic-index foods, increased intake of dietary fibre and vegetable protein, reduced intramyocellular lipid concentrations, and decreased iron stores mediate the influence of plant-based diets on glycemia. Vegetarian and vegan diets also improve plasma lipid concentrations and have been shown to reverse atherosclerosis progression. In clinical studies, the reported acceptability of vegetarian and vegan diets is comparable to other therapeutic regimens. The presently available literature indicates that vegetarian and vegan diets present potential advantages for the management of type 2 diabetes.”
- **Bradbury KE, Crowe FL, Appleby PN, Schmidt JA, Travis RC, Key TJ. (2014) Serum concentrations of cholesterol, apolipoprotein A-I and apolipoprotein B in a total of 1694 meat-eaters, fish-eaters, vegetarians and vegans.**
- **Eur J Clin Nutr. 68(2):178-183.** “In conclusion, this study compares the serum lipid concentrations of British meat-eaters, fish-eaters, vegetarians and vegans, and finds lower serum concentrations of total and non-HDL cholesterol in vegans. Vegans also had very low saturated fat intakes and higher intakes of polyunsaturated fat and fibre.”
- **Appleby PN, Davey GK, Key TJ. (2002) Hypertension and blood pressure among meat eaters, fish eaters, vegetarians and vegans in EPIC Oxford. Public Health Nutr. 5(5):645-654**

- **Orlich MJ, Singh PN, Sabaté J, et al. (2013) Vegetarian dietary patterns and mortality in Adventist Health Study 2. JAMA Intern Med.173(13):1230-1238.** “In conclusion, in a large American cohort, we found that vegetarian dietary patterns were associated with lower mortality. The evidence that vegetarian diets, or similar diets with reduced meat consumption, may be associated with a lower risk of death should be considered carefully by individuals as they make dietary choices and by those offering dietary guidance.”

The following additional sources have been provided to us by Dr Tom Hubbard, a plant-based GP based in Ireland:

1. McMacken M, Shah S. A plant-based diet for the prevention and treatment of type 2 diabetes. *Journal of Geriatric Cardiology : JGC.* 2017;14(5):342-354 doi:10.11909/j.issn.1671-5411.2017.05.009. <https://www.ncbi.nlm.nih.gov/pubmed/28630614>
2. Ferdowsian, Hope R. et al Effects of Plant-Based Diets on Plasma Lipids. *American Journal of Cardiology* , Volume 104 , Issue 7 , 947 – 956 <https://www.ncbi.nlm.nih.gov/pubmed/19766762>
3. Ambika Satija, Shilpa N. Bhupathiraju, Donna Spiegelman, Stephanie E. Chiuve, JoAnn E. Manson, Walter Willett, Kathryn M. Rexrode, Eric B. Rimm, Frank B. Hu, Healthful and Unhealthful Plant-Based Diets and the Risk of Coronary Heart Disease in U.S. Adults, *Journal of the American College of Cardiology*, Volume 70, Issue 4, 2017, Pages 411-422, ISSN 0735-1097, <https://www.ncbi.nlm.nih.gov/pubmed/28728684>
4. Satija A, Bhupathiraju SN, Rimm EB, et al. Plant-Based Dietary Patterns and Incidence of Type 2 Diabetes in US Men and Women: Results from Three Prospective Cohort Studies. Moore SC, ed. *PLoS Medicine.* 2016;13(6):e1002039. doi:10.1371/journal.pmed.1002039 <https://www.ncbi.nlm.nih.gov/pubmed/27299701>
5. Choi EY, Allen K, McDonnough M, Massera D, Ostfeld RJ. A plant-based diet and heart failure: case report and literature review. *Journal of Geriatric Cardiology : JGC.* 2017;14(5):375-378. doi:10.11909/j.issn.1671-5411.2017.05.003. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5466944/>
6. Campbell T. A plant-based diet and stroke. *Journal of Geriatric Cardiology : JGC.* 2017;14(5):321-326. doi:10.11909/j.issn.1671-5411.2017.05.010. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5466937/>
7. Macknin M, Kong T, Weier A, et al. Plant-Based No Added Fat or American Heart Association Diets, Impact on Cardiovascular Risk in Obese Hypercholesterolemic Children and Their Parents. *The Journal of pediatrics.* 2015;166(4):953-959.e3. doi:10.1016/j.jpeds.2014.12.058. <https://www.ncbi.nlm.nih.gov/pubmed/25684089>
8. Fraser G, Katuli S, Anousheh R, Knutsen S, Herring P, Fan J. Vegetarian diets and cardiovascular risk factors in black members of the Adventist Health Study-2. *Public health nutrition.* 2015;18(3):537-545. doi:10.1017/S1368980014000263. <https://www.ncbi.nlm.nih.gov/pubmed/24636393>
9. Kahleova H, Levin S, Barnard N. Cardio-Metabolic Benefits of Plant-Based Diets. *Nutrients.* 2017;9(8):848. doi:10.3390/nu9080848. <https://www.ncbi.nlm.nih.gov/pubmed/28792455>
10. John F. Trepanowski & Krista A. Varady. Veganism Is a Viable Alternative to Conventional Diet Therapy for Improving Blood Lipids and Glycemic Control Critical Reviews in Food Science and Nutrition Vol. 55, Iss. 14, 2015 <https://www.ncbi.nlm.nih.gov/pubmed/24922183>
11. Yoko Yokoyama, Susan M Levin, Neal D Barnard; Association between plant-based diets and plasma lipids: a systematic review and meta-analysis, *Nutrition Reviews*, Volume 75, Issue 9, 1 September 2017, Pages 683–698, <https://doi.org/10.1093/nutrit/nux030>

12. Grant JD. Time for change: Benefits of a plant-based diet. *Canadian Family Physician*. 2017;63(10):744-746. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5638464/>
13. Alexander S, Ostfeld RJ, Allen K, Williams KA. A plant-based diet and hypertension. *Journal of Geriatric Cardiology : JGC*. 2017;14(5):327-330. doi:10.11909/j.issn.1671-5411.2017.05.014. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5466938/>
14. Turner-McGrievy G, Mandes T, Crimarco A. A plant-based diet for overweight and obesity prevention and treatment. *Journal of Geriatric Cardiology : JGC*. 2017;14(5):369-374. doi:10.11909/j.issn.1671-5411.2017.05.002. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5466943/>
15. Lifestyle Medicine: A Brief Review of Its Dramatic Impact on Health and Survival <http://www.thepermanentejournal.org/files/2018/17-025.pdf>
16. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5466937/>
17. Campbell T. A plant-based diet and stroke. *Journal of Geriatric Cardiology : JGC*. 2017;14(5):321-326. doi:10.11909/j.issn.1671-5411.2017.05.010. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4907357/>
18. Fruit and vegetable intake and the risk of cardiovascular disease, total cancer and all-cause mortality—a systematic review and dose-response meta-analysis of prospective studies Dagfinn Aune Edward Giovannucci Paolo Boffetta Lars T Fadnes NaNa Keum Teresa Norat Darren C Greenwood Elio Riboli Lars J Vatten Serena Tonstad *International Journal of Epidemiology*, Volume 46, Issue 3, 1 June 2017, Pages 1029–1056, <https://doi.org/10.1093/ije/dyw319>
19. S. J. Petre, D. K. Sackett, D. D. Aday. Do national advisories serve local consumers: An assessment of mercury in economically important North Carolina fish. *J. Environ. Monit.* 2012 14(5):1410 - 1416.
20. P. Grandjean, J. E. Henriksen, A. L. Choi, M. S. Petersen, C. Dalgaard, F. Nielsen, P. Weihe
21. Marine food pollutants as a risk factor for hypoinsulinemia and type 2 diabetes. *Epidemiology* 2011 22(3):410 - 417.
22. A. Wallin, D. Di Giuseppe, N. Orsini, P. S. Patel, N. G. Forouhi, A. Wolk. Fish consumption, dietary long-chain n-3 fatty acids, and risk of type 2 diabetes: Systematic review and meta-analysis of prospective studies. *Diabetes Care* 2012 35(4):918 - 929.
23. R. F. White, C. L. Palumbo, D. A. Yurgelun-Todd, K. J. Heaton, P. Weihe, F. Debes, P. Grandjean. Functional MRI approach to developmental methylmercury and polychlorinated biphenyl neurotoxicity. *Neurotoxicology* 2011 32(6):975 - 980.
24. M. J. Zeilmaker, J. Hoekstra, J. C. H. van Eijkeren, N. de Jong, A. Hart, M. Kennedy, H. Owen, H. Gunnlaugsdottir. Fish consumption during child bearing age: a quantitative risk-benefit analysis on neurodevelopment. *Food Chem Toxicol.* 2013 54:30-34.
25. D. A. Axelrad, D. C. Bellinger, L. M. Ryan, T. J. Woodruff. Dose-response relationship of prenatal mercury exposure and IQ: An integrative analysis of epidemiologic data. *Environ. Health Perspect.* 2007 115(4):609 - 615.
26. E. Oken, A. L. Choi, M. R. Karagas, K. Mariën, C. M. Rheinberger, R. Schoeny, E. Sunderland, S. Korrick. Which fish should I eat? Perspectives influencing fish consumption choices. *Environ. Health Perspect.* 2012 120(6):790 - 798.

27. I. B. Cace, A. Milardovic, I. Prpic, R. Krajina, O. Petrovic, P. Vukelic, Z. Spiric, M. Horvat, D. Mazej, J. Snoj. Relationship between the prenatal exposure to low-level of mercury and the size of a newborn's cerebellum. *Med. Hypotheses* 2011 76(4):514 - 516.
28. M. R. Karagas, A. L. Choi, E. Oken, M. Horvat, R. Schoeny, E. Kamai, W. Cowell, P. Grandjean, S. Korrick. Evidence on the human health effects of low-level methylmercury exposure. *Environ. Health Perspect.* 2012 120(6):799 - 806.
29. J. J. Strain, P. W. Davidson, M. P. Bonham, E. M. Duffy, A. Stokes-Riner, S. W. Thurston, J. M. W. Wallace, P. J. Robson, C. F. Shamlaye, L. A. Georger, J. Sloane-Reeves, E. Cernichiari, R. L. Canfield, C. Cox, L. S. Huang, J. Janciuras, G. J. Myers, T. W. Clarkson. Associations of maternal long-chain polyunsaturated fatty acids, methyl mercury, and infant development in the Seychelles Child Development Nutrition Study. *Neurotoxicology* 2008 29(5):776 - 782.
30. A. M. Lando, Y. Zhang. Awareness and knowledge of methylmercury in fish in the United States. *Environ. Res.* 2011 111(3):442 - 450.
31. P. A. Olsvik, H. Amlund, B. E. Torstensen. Dietary lipids modulate methylmercury toxicity in Atlantic salmon. *Food Chem. Toxicol.* 2011 49(12):3258 - 3271.
32. S. D. Stellman, T. Takezaki, L. Wang, Y. Chen, M. L. Citron, M. V. Djordjevic, S. Porta. Persistent organic pollutants and the burden of diabetes. *Lancet* 2006 368(9535):558-559.
33. K. Yaginuma-Sakurai, K. Murata, M. Iwai-Shimada, K. Nakai, N. Kurokawa, N. Tatsuta, H. Satoh. Hair-to-blood ratio and biological half-life of mercury: Experimental study of methylmercury exposure through fish consumption in humans. *J Toxicol Sci* 2012 37(1):123 - 130.
34. L. Trasande, Y. Lui. Reducing the staggering costs of environmental disease in children, estimated at \$76.6 billion in 2008. *Health Aff* 2011 30(5): 863-870.
35. J. Julvez, F. Debes, P. Weihe, A. Choi, P. Grandjean. Sensitivity of continuous performance test (CPT) at age 14 years to developmental methylmercury exposure. *Neurotoxicol Teritol* 2010 32(6): 627-32.
36. M. Zhang, E. Picard-Deland, A. Marette. Fish and Marine Omega-3 Polyunsaturated Fatty Acid Consumption and Incidence of Type 2 Diabetes: A Systematic Review and Meta-Analysis. *Int J Endocrinol.* 2013 2013:501015 Epub 2013 Sep 8.
37. C. Lee, A. Liese, L. Wagenknecht, C. Lorenzo, S. Haffner, A. Hanley. Fish consumption, insulin sensitivity and beta-cell function in the Insulin Resistance Atherosclerosis Study (IRAS). *Nutr Metab Cardiovasc Dis.* 2013 23(9):829 – 835.
38. JS Zheng, T. Huang, J. Yang, YQ Fu, D. Li. Marine N-3 polyunsaturated fatty acids are inversely associated with risk of type 2 diabetes in Asians: A systematic review and meta-analysis. *PLoS ONE.* 2012 7(9):e44525.
39. DO Carpenter. Environmental contaminants as risk factors for developing diabetes. *Rev Environ Health.* 2008 23(1):59 – 74.
40. JHY Wu, R. Micha, F. Imamura, A. Pan, ML Biggs, O. Ajaz, L. Djousse, FB Hu, D. Mozaffarian. Omega-3 fatty acids and incident type 2 diabetes: A systematic review and meta-analysis. *Br J Nutr.* 2012 107 - Suppl - 2:S214 – 27.
41. A. Wallin, D. Di Giuseppe, N. Orsini, PS Patel, NG Forouhi, A. Wolk. Fish consumption, dietary long-chain n-3 fatty acids, and risk of type 2 diabetes: Systematic review and meta-analysis of prospective studies. *Diabetes Care.* 2012 35(4):918 – 929.

42. J Ruzzin. Public health concern behind the exposure to persistent organic pollutants and the risk of metabolic diseases. BMC Public Health. 2012 12(20):298.
43. J Ruzzin, DH Lee, DO Carpenter, DR Jacobs Jr. Reconsidering metabolic diseases: The impacts of persistent organic pollutants. Atherosclerosis. 2012 224(1):1 – 3.
44. Y Zhou, C Tian, C Jia. Association of fish and n-3 fatty acid intake with the risk of type 2 diabetes: A meta-analysis of prospective studies. Br J Nutr. 2012 108(3):408 – 417.
45. P Xun, K He. Fish Consumption and Incidence of Diabetes. Diabetes Care. 2012 35(4):930–938.

For general information please see non-profit group Physicians Committee for Responsible Medicine in the US (<http://www.pcrm.org/>) and Dr Michael Greger, a plant-based physician in the US who has been researching plant-based nutrition for decades and runs the not-for-profit web site www.nutritionfacts.org The documentaries Forks Over Knives and What the Health are also useful and informative sources of information regarding the nutritional and health benefits of a plant-based diet.

The UK not-for-profit group Plant Based Health Professionals UK is holding the first UK conference on plant based nutrition in London on 23 March at Kings College Hospital, and the first Scottish conference will take place on 30 June at Glasgow Royal Infirmary. It would be ideal if relevant people involved in this consultation and in advising the Scottish Government on food, nutrition and health could attend. We are assisting Plant Based Health Professionals in setting up the Scottish conference so please contact us to arrange attendance. We are encouraging Scotland's doctors, nurses and medical students to attend. It is notable that our medical professionals receive very little in the way of nutritional education during their years of study. Dr Greger has made this point in relation to US doctors, but the position in the UK is similar: <https://nutritionfacts.org/2017/06/08/how-much-nutrition-education-do-doctors-get/>

Recommended Measures Related to Promotion of Healthful Foods

Given the considerable health benefits of adopting a WFPB diet, with the additional benefits of significantly reduced medical costs, taking steps to promote the consumption of whole plant foods ought to be a priority. Scotland has the opportunity to be a leader in recognising the importance of plant-based nutrition and reflecting that in the measures it introduces in seeking to tackle obesity and poor health.

Given the health benefits of a WFPB diet, the consumption of whole plant foods ought to be promoted throughout Scotland, using specific measures designed to improve access to and availability of good quality, affordable, whole foods, where possible locally grown, along with education and skills training to ensure that everyone, including those in our most socially deprived areas, have the benefit of access to nutritious, healthful, affordable, whole foods.

The measures that could be taken to promote the consumption of nutrition rich foods include:

- with a view to making whole plant-based foods accessible to everyone, introduce measures to ensure that whole foods are affordable across Scotland, wherever you live and wherever you shop. Whole plant-based foods should always be more affordable than processed, high fat, low nutrient foods.
- price related promotion of whole plant-based foods should extend to prepared foods. It should be cheap for our public institutions to provide whole plant-based food meals. Private venues should also be encouraged to reflect the lower price of whole foods in their plant-based dishes. A plant-based dish ought to be cheaper than the meat/dairy equivalent. The price promotion should carry through to eating out.
- encouraging local production of whole plant foods should assist in making nutritious food more accessible and more affordable, as well as supporting our aims in relation to the creation of a more sustainable economy and reducing our negative impact on the environment (the huge detrimental impact of animal agriculture on our environment has been recognised by the UN).
- promotion of locally grown fruits, vegetables, grains and legumes. The current system does little to encourage this type of farming, whereas huge subsidies are funnelled into the use of animals for food, which is detrimental to our health (as well as raising serious issues of social justice). We ought to be encouraging the use of our arable land for sustainable farming of whole plant foods. Some work has already been done in terms of assessing what plant-based foods grow well in our soil and further work should be done in this area, as well as in terms of assisting existing farmers to transition from using animals to growing whole foods and encouraging more people to work in this area. The Vegan Society has carried out studies with a view to assisting farmers to transition to growing food:
<https://www.vegansociety.com/take-action/campaigns/grow-green> ;
www.vegansociety.com/growgreen and has confirmed that crops that grow particularly well in Scotland include wheat, barley, oats, and oilseed rape, as well as potatoes and other fruits and vegetables such as strawberries. Hemp also grows well in Scotland and is a crop that can be used for many things including food and clothing. (This will not be news to many who live in Scotland and see these crops growing, but it is more to the question of whether or not we can grow crops on land currently used for animals. While site specific studies would be required, the Vegan Society has identified these crops as being suitable for large sections of Scotland.)
- promotion of local and urban farms. There are a number of grass-roots community groups working to encourage people to get involved in food growth, including in some of our most deprived areas. This is important work, as it encourages people to consider food as a source of nutrients as well as pleasure, while engaging with their community and learning a life skill. These groups get little in the way of support or funding. E.g.:
<https://www.farmgarden.org.uk/your-area/scotland>
- educate children in our schools about growing food (not using and killing animals). Introduce small urban farms into our schools and support those projects to ensure that they are used.
- support projects to educate people in basic plant-based cooking skills. Many people reach adulthood without basic cooking skills, which is a serious hindrance in terms of the pursuit of better health, given that nutritious self-prepared meals will be better for us as well as cheaper than packaged processed food. For an example of such a project see the PCRM.org food for life programme in the UK:
<http://www.lifeafterhummus.com>

Identification of Harmful Foods

On the other hand, the consumption of animal derived products has been shown to be detrimental to our health.

Processed meat (e.g. bacon, ham etc) has been classed as carcinogenic to humans, while red meat has been classed as a probable carcinogen. See for example IARC Monographs evaluate consumption of red meat and processed meat http://www.iarc.fr/en/media-centre/pr/2015/pdfs/pr240_E.pdf and the WHO Classification of Meat as Carcinogen: <http://www.who.int/features/qa/cancer-red-meat/en/>

Beyond processed and red meat, studies indicate more generally that the consumption of meat, fish, dairy and eggs are detrimental to our health:

- Barnard, ND, Nicholson, A, Howard, JL, (1995) The Medical Costs Attributable to Meat Consumption Preventive Medicine, 24, 646-655
- Li Y, , Zhou C, Zhou X, Li L. (2013) Egg consumption and risk of cardiovascular diseases and diabetes: a meta-analysis. *Atherosclerosis*. Aug;229(2):524-30. "Egg serves as the major source of dietary cholesterol, containing 213 mg cholesterol per egg. Evidence from animal and human metabolic studies have found that dietary cholesterol from egg could raise serum levels of low density lipoprotein cholesterol (LDL-C), a well-established independent risk factor for cardiometabolic diseases including cardiovascular diseases (CVD) and diabetes.In conclusion, our meta-analysis indicates that there is positive dose-response association between egg consumption and the risk of CVD and diabetes."
- Milk & Prostate Cancer: The Evidence (<http://www.pcrm.org/health/health-topics/milk-and-prostate-cancer-the-evidence-mounts>) "Major studies suggesting a link between milk and prostate cancer have appeared in medical journals since the 1970s. Two of six cohort studies (research studies following groups of people over time) found increased risk with higher milk intakes. Five studies comparing cancer patients to healthy individuals found a similar association.....In 1997, the World Cancer Research Fund and the American Institute for Cancer Research concluded that dairy products should be considered a possible contributor to prostate cancer. ...Whole grains, beans and other legumes, vegetables, and fruits are cancer fighters. Plant foods are low in fat, high in fiber, and loaded with protective cancer-fighting nutrients. But animal products—meat, dairy, eggs—are linked to several forms of the disease.The most healthful diets eliminate meat, dairy products, eggs, and fried foods."
- Lifestyle Medicine: A Brief Review of Its Dramatic Impact on Health and Survival <http://www.thepermanentejournal.org/files/2018/17-025.pdf>
- Dairy product consumption and risk of hip fracture: a systematic review and meta-analysis, Shanshan Bian, Jingmin Hu, Kai Zhang, Yunguo Wang, Miaohui Yu and Jie Ma *BMC Public Health* <https://doi.org/10.1186/s12889-018-5041-5>
- Lu W, Chen H, Niu Y, Wu H, Xia D, Wu Y. Dairy products intake and cancer mortality risk: a meta-analysis of 11 population-based cohort studies. *Nutrition Journal*. 2016;15:91. doi:10.1186/s12937-016-0210-9.
- Wang J, Li X, Zhang D. Dairy Product Consumption and Risk of Non-Hodgkin Lymphoma: A Meta-Analysis. *Nutrients*. 2016;8(3):120. doi:10.3390/nu8030120.
- Sun Y, Lin L-J, Sang L-X, Dai C, Jiang M, Zheng C-Q. Dairy product consumption and gastric cancer risk: A meta-analysis. *World Journal of Gastroenterology* : *WJG*. 2014;20(42):15879-15898. doi:10.3748/wjg.v20.i42.15879.
- Food for Life Cancer Project, PCRM (<https://www.pcrm.org/health/cancer-resources/diet-cancer/facts/foods-for-cancer-prevention>) : "Although the total amount of fat one eats is of concern, there is evidence that animal fat is much more harmful than vegetable fat. One study noted a 200 percent increase in breast cancer among those who consume beef or pork five to

six times per week. Dr. Sheila Bingham, a prominent cancer researcher from the University of Cambridge, notes that meat is more closely associated with colon cancer than any other factor. Meat and milk are also linked to both prostate and ovarian cancers.”

- Bingham SA. (1988) Meat, starch, and non-starch polysaccharides and bowel cancer. *Am J Clin Nutr.* 1988;48:762-767.

Rose DP, Boyar AP, Wynder EL. (1986) International comparisons of mortality rates for cancer of the breast, ovary, prostate, and colon, and per capita food consumption. *Cancer.* 1986;58:2363-2371.

- PCRM Factsheet on Eggs <http://www.pcrm.org/sites/default/files/pdfs/health/Nutrition-Fact-Sheets/Eggs-fact-sheet.pdf> “There are many reasons to eliminate eggs from your diet. Recent studies suggest that egg consumption can cause heart disease, diabetes and even cancer.”

- Michaëlsson, K, Wolk, A, Langenskiöld, S, Basu, S, Warensjö Lemming, E, Melhus, H, Byberg, L (2014) Milk intake and risk of mortality and fractures in women and men: cohort studies. *British Medical Journal*,;349:g6015. “A higher consumption of milk in women and men is not accompanied by a lower risk of fracture and instead may be associated with a higher rate of death.”

- Li-Qiang, Q et al (2007) Milk consumption is a risk factor for prostate cancer in Western countries: evidence from cohort studies. *Asia Pac J Clin Nutr*;16 (3):467-476 “We have previously found a positive association between milk consumption and prostate cancer risk using meta-analysis to analyze published case-control studies. In the present study, further meta-analysis was conducted to estimate the summary relative risk (RR) between the consumption of milk and dairy products and prostate cancer from cohort studies published between 1966- 2006...These findings, together with the previous study, suggest that the consumption of milk and dairy products increases the risk of prostate cancer.”

- Chan, JM, Stampfer, MJ, Ma,J, Gann, PH, Gaziano, JM and Giovannucci, EL (2001). Dairy products, calcium, and prostate cancer risk in the Physicians’ Health Study. *Am J Clin Nutr* 74:549–54. “These results support the hypothesis that dairy products and calcium are associated with a greater risk of prostate cancer.”

- Susanna C Larsson, SC, Bergkvist, L, Wolk, A (2004) Milk and lactose intakes and ovarian cancer risk in the Swedish Mammography Cohort .*Am J Clin Nutr* 80:1353–7.“Our data indicate that high intakes of lactose and dairy products, particularly milk, are associated with an increased risk of serous ovarian cancer.”

- Kroenke, CH, Kwan, ML, Sweeney, C, Castillo, A, Caan, BJ (2013) High- and Low-Fat Dairy Intake, Recurrence, and Mortality After Breast Cancer Diagnosis. *Natl Cancer Inst*;105:616–623 “Greater intake of high-fat dairy was related to higher risk of breast cancer–specific and non–breast cancer mortality in this cohort of long-term, early-stage breast cancer survivors. ”

In light of the connection between the consumption of meat, fish, dairy and eggs and disease, ill-health and obesity, we encourage the Scottish Government to reflect this in the measures they introduce. Alongside measures designed to promote the consumption of whole plant foods should sit measures designed to reduce the consumption of all animal derived products.

We appreciate that farming involving the use of animals is seen as an important revenue producing sector in our economy, and in that of the UK and the EU, and it is for that reason that a significant proportion of an animal farmer’s income is made up of subsidies. However, our nation’s health and our right to access to healthful food ought to take precedence. In any event, continuing to support the

animal-use industries is unsustainable and inconsistent with our objective of reducing our negative impact on the environment, and if we support farmers in transitioning to crop, fruit and vegetable production and support plant-based businesses, we ought to be able to make this positive for the economy and business as well as for our health, the environment and animals.

Question 2: How do we most efficiently and effectively define the types of food and drink that we will target with these measures? Please explain your answer.

Answer 2:

It should be relatively straightforward to identify WFPB foods and food containing animal derived ingredients, in order to promote the former and discourage the consumption of the latter.

A 2016 UN study “Plates, pyramids and planets Developments in national healthy and sustainable dietary guidelines: a state of play assessment,” by the Food and Agriculture Organisation and Food Climate Research Network, urges governments to develop guidelines that promote ‘win-win’ diets, in terms of nutritional value, health, sustainability and the environment. They noted that:

“Current food systems jeopardize current and future food production and fail to nourish people adequately. The starting point for this report is the observation – founded on a growing body of research – that if we are to address the multiple social, health and environmental challenges caused by, and affecting food systems, global populations need to move towards dietary patterns that are both healthy and also respectful of environmental limits. As such, an integrated understanding of what such diets look like is needed, as is action to foster the necessary shifts in consumption. There is increasingly robust evidence to suggest that dietary patterns that have low environmental impacts can also be consistent with good health – that win-wins are possible, if not inevitable.... However, despite the growing evidence base, government action is lagging behind. One important step that governments can take to signal their commitment to a more sustainable and healthy future, is to develop and disseminate food based dietary guidelines (FBDG) that embed health and sustainability objectives. These can then form the basis of policies seeking to foster such patterns. The purpose of this report is to highlight instances of forward think” (page 1-2 of report)

The win-win diet in terms of health and the environment, as they see it, is “Based around: minimally processed tubers and whole grains; legumes; fruits and vegetables – particularly those that are field grown, “robust” (less prone to spoilage) and less requiring of rapid and more energy intensive transport modes.”

In summarising their findings, having looked at the few countries who have taken steps to promote the “win-win” diet, the FAO noted that an important element in a country taking steps to promote healthy and more environmentally friendly eating practices is to highlight in the national food guidelines “that a largely plant-based diet has advantages for health and for the environment.”(Page 2) Sweden has gone further and provides more detailed advice on which plant based foods are to be preferred. There is plenty of guidance on this, for example: <http://nutritionstudies.org/whole-food-plant-based-diet-guide/>

Germany and Brazil stand out as leaders in this area, having national food guidelines that recommend that people: “Choose mainly plant-based foods. Enjoy 5 portions of fruit and vegetables daily,” and “Eat foods mainly of plant origin. Chose seasonal and locally grown produce.”

<http://www.un.org/apps/news/story.asp?NewsID=53984#.WnGfBWcV-M8> / <http://www.fao.org/3/a-i5640e.pdf>

Brazil has built on these guidelines by making its free school lunches fully plant-based:

<http://www.onegreenplanet.org/news/brazil-serves-vegan-school-lunches/>

Canada is in the process of changing its food guidelines to place far greater emphasis on the importance of consuming whole plant-based foods and has removed dairy as a food group:

https://www.huffingtonpost.com/entry/progress-canadas-new-food-guide-will-favor-plant_us_5966eb4ce4b07b5e1d96ed5e

Question 3: To what extent do you agree with the actions we propose on non-broadcast advertising of products high in fat, salt and sugar?

Agree

Please explain your answer:

Restrictions on the advertising and promotion of animal derived foods would be consistent with what we have said in Answer 1. However, the currently contemplated measures do not appear to make any distinction between animal fat and fat found in nutrient dense plant foods, such as avocados and nuts and seeds. In our view a clear distinction ought to be made. See e.g.

<https://nutritionfacts.org/video/good-great-bad-killer-fats/> ;
<https://nutritionfacts.org/topics/animal-fat/> ; <http://www.pcrm.org/health/saturated-fat>

The problematic fat in relation to heart disease is cholesterol:

“Cholesterol is found in all foods that come from animals: red meat, poultry, fish, chicken, eggs, milk, cheese, yogurt, and other dairy products. Choosing lean cuts of meat is not enough; the cholesterol is mainly in the lean portion. Many people are surprised to learn that chicken contains as much cholesterol as beef, 25 mg per ounce. Every 4-ounce serving of beef or chicken contains 100 mg of cholesterol. Most shellfish are also very high in cholesterol. All animal products should be avoided for this reason. No foods from plants contain cholesterol, since plants do not have a liver to produce it. Animal products, including meat and dairy products, as well as fried food and vegetable oils are all loaded with fat. The food industry reports the fat content by weight, which allows the water content to throw off the measurements and make these products look more healthful than they actually are. The most important piece of information to look for is the percentage of calories from fat. In the leanest cuts of beef, about 30 percent of the calories come from fat. Skinless chicken is nearly as high at 23 percent. Even without the skin, chicken is never truly a low-fat food. Most cheeses contain 60 to 80 percent of calories from fat, and ice creams often contain 45 to 65 percent. Butter, margarine, and oils of all types typically contain 95 to 100 percent of calories from fat. Grains, beans, vegetables, and fruits have less than 10 percent of their calories coming from fat. Animal products also contain saturated fat, which causes the liver to produce more cholesterol. Unsaturated fats do not have this effect. A diet based on plant foods—grains, beans, vegetables, and fruits—is the best way

to keep saturated fat intake low and to avoid cholesterol completely. A vegan diet is free of all animal products and yields the lowest risk of heart disease.”

The amount of cholesterol in one egg exceeds the standard recommended maximum amount of cholesterol. See PCRM Factsheet on Cholesterol & Heart Disease:
<http://www.pcrm.org/health/health-topics/cholesterol-and-heart-disease> .

“Furthermore, increasing fish intake would likely increase total fat and saturated fat intake. Although some of the fat in fish is in the omega-3 form, much of the remaining fat is saturated. Chinook salmon, for example, derives 52 percent of its calories from fat, and swordfish derives 30 percent. About one-quarter of the fat in both types of fish is saturated. Fish and shellfish are also significant sources of cholesterol. Three ounces of shrimp have 166 milligrams of cholesterol, while the same amount of bass has about 80 milligrams; in comparison, a 3-ounce steak has about 80 milligrams.” PCRM Factsheet on Fish
<http://www.pcrm.org/health/reports/american-seafood-somethings-fishy>

Question 4: Do you think any further or different action is required for the out of home sector?

Yes

Please explain your answer:

- update nutrition guidelines to reflect the benefits of a WFPB diet and recognise the connection between the consumption of animal derived products and disease, obesity and ill-health. See Answer to Q2 on countries that have taken such steps already.
- require all public institutions to include WFPB meals/options on menus/in canteens/at meetings, including all public schools, hospitals, prisons, councils and parliament. Portugal recently passed a law requiring that its public institutions all have at least one fully plant-based dish on their menus:<http://metro.co.uk/2017/03/10/it-is-now-illegal-not-to-offer-vegan-food-at-prisons-hospitals-and-schools-in-portugal-6501872/>
- with a view to making whole plant-based foods accessible affordable for everyone, introduce measures to ensure that whole foods are affordable across Scotland, wherever you live and wherever you shop. Whole plant-based foods should always be cheaper and therefore more affordable than processed, high fat, low nutrient foods.
- price related promotion of whole plant-based foods should extend to prepared foods. It should be cheaper for our public institutions to provide whole plant-based food meals than low nutrient, high fat animal based meals. Private venues should also be encouraged to reflect the lower price of whole foods in their plant-based dishes. A plant-based dish ought to be cheaper than the meat/dairy equivalent. The price promotion should carry through to eating out.
- encouraging local production of whole plant foods should assist in making nutritious food more accessible and more affordable, as well as supporting our aims in relation to the creation of a more sustainable economy and reducing our negative impact on the environment (the huge detrimental impact of animal agriculture on our environment has been recognised by the UN).
- promotion of locally grown fruits, vegetables, grains and legumes. The current system does little to encourage this type of farming, whereas huge subsidies are funnelled into the use of animals for food, which is detrimental to our health (as well as raising serious issues of social justice, which we will address in a separate submission). We ought to be encouraging the use of our arable land for sustainable farming of whole plant foods. Some work has already been done in terms of assessing what plant-based foods grow well in our soil and further work should be done in this area, as well as in terms of assisting existing farmers to transition from using animals to growing whole foods and encouraging more people to work in this area. The Vegan Society has carried out studies with a view to assisting farmers to transition to growing food:

<https://www.vegansociety.com/take-action/campaigns/grow-green> ;
www.vegansociety.com/growgreen and has confirmed

that crops that grow particularly well in Scotland include wheat, barley, oats, and oilseed rape, as well as potatoes and other fruits and vegetables such as strawberries. (This will not be news to many who live in Scotland and see these crops growing, but it is more to the question of whether or not we can grow crops on land currently used for grazing. While site specific studies would be required, the Vegan Society has identified these crops as being suitable for large sections of Scotland.) Hemp also grows well in Scotland and is a crop that can be used for many things including food and clothing.

- promotion of local and urban farms. There are a number of grass-roots community group working to encourage people to get involved in food growth, including in some of our most deprived areas. This is important work as it encourages people to consider food as a source of nutrients as well as enjoyment, while engaging with their community and learning a life skill. These groups get little in the way of support or funding. E.g.:

<https://www.farmgarden.org.uk/your-area/scotland>

- educate children in our schools about growing food (not using and killing animals). Introduce small urban farms into our schools and support those projects to ensure that they are used.

- support projects to educate people in basic plant-based cooking skills. Many people reach adulthood without basic cooking skills, which is a serious hindrance in terms of the pursuit of better health, given that nutritious self-prepared meals will be better for us as well as cheaper than packaged processed food. For an example see the PCRM.org food for life programme in the UK: <http://www.lifeafterhummus.com>

Question 5: Do you think current labelling arrangements could be strengthened?

Yes

Please explain your answer:

Labelling is currently inconsistent in terms of clearly identifying products that do not have any animal-derived ingredients. A universal system for labelling vegan products ought to be introduced to make it as easy as possible for people to select plant-based products.

Question 6: What specific support do Scottish food and drink SMEs need most to reformulate and innovate to make their products healthier? What specific support do Scottish food and drink SMEs need most to reformulate and innovate to make their products healthier?:

See Answers 1 and 4. We ought to also introduce specific measures to support and promote plant based businesses. Scotland produces a lot of oats and could produce a lot more. We could easily be home to a successful plant based business like the Sweedish Oatly. As it is, Oatly cannot meet the demand from the UK and other countries. We should not have to purchase a Sweedish oat milk brand, there ought to be a Scottish brand and if the measures we have outlined were introduced, along with specific incentives for plant based businesses, we ought to see successful brands develop here.

Question 7: Do you think any further or different action is required to support a healthy weight from birth to adulthood?

Yes

Please explain your answer:

We have not had a vegan baby formula in this country for many years. This creates real issues for vegan mothers who are having difficulty breast feeding. They do not wish to purchase baby formula containing animal derived ingredients as that is against their fundamental moral conviction that it is wrong to use and kill animals. They are therefore placed in a very difficult position. Baby formula that is suitable for vegans is available in other countries, such as the US. Steps should be taken to encourage the production of suitable baby formula here in Scotland.

Question 8: How do you think a supported weight management service should be implemented for people with, or at risk of developing, type 2 diabetes - in particular the referral route to treatment? How do you think a supported weight management service should be implemented for people with, or at risk of developing, Type 2 Diabetes – in particular the referral route to treatment?:

We are not sure that focus on weight management is appropriate, as opposed to education in nutrition, healthy eating and basic plant based cooking skills, combined with the other community based measures we outlined above.

Question 9: Do you think any further or different action on healthy living interventions is required?

Not Answered

Question 10: How can our work to encourage physical activity contribute most effectively to tackling obesity? How can our work to encourage physical activity contribute most effectively to tackling obesity?:

By ensuring that activity can become part of daily actions. Eg making safe, accessible cycle lanes which are respected by drivers (with enforcement) and closing our parks to traffic at regular, scheduled times so that people can safely use the park roads for sport and exercise.

Question 11: What do you think about the action we propose for making obesity a priority for everyone? What do you think about the action we propose for making obesity a priority for everyone?:

We are not sure that focus on weight management is appropriate, as opposed to education in nutrition, healthy eating and basic plant based cooking skills, combined with the other community based measures we outlined above.

Question 12: How can we build a whole nation movement? How can we build a whole nation movement?

The steps outlined above ought to assist in promoting this.

Question 13: What further steps, if any, should be taken to monitor change? What further steps, if any, should be taken to monitor change?

Question 14: Do you have any other comments about any of the issues raised in this consultation? Do you have any other comments about any of the issues raised in this consultation?:

The UK not-for-profit group Plant Based Health Professionals UK is holding the first UK conference on plant based nutrition in London on 23 March at Kings College Hospital, and the first Scottish conference will take place on 30 June at Glasgow Royal Infirmary. It would be ideal if relevant people involved in this consultation and in advising the Scottish Government on food, nutrition and health could attend. We are assisting Plant Based Health Professionals in setting up the Scottish conference so **please contact us to arrange attendance**. We are encouraging Scotland's doctors, nurses and medical students to attend. It is notable that our medical professionals receive very little in the way of nutritional education during their years of study. Dr Greger has made this point in relation to US doctors, but the position in the UK is similar: <https://nutritionfacts.org/2017/06/08/how-much-nutrition-education-do-doctors-get/>