

Office of Nutrition Policy and Promotion
Laboratory Centre for Disease Control (LCDC) Building # 6
Address Locator: 0603C
Tunney's Pasture
Ottawa, Ontario
K1A 0L2

July 24, 2017

RE: Dietary Guidelines

Dear Mr. Hutchinson, Dr. Philpott, and the Office of Nutrition Policy and Promotion;

During phase one of your public consultation on the new dietary guidelines, we submitted an open letter on behalf of 190 Canadian physicians and allied health professionals outlining our recommended changes to the food guide. Today we are submitting a revised version of the letter, now signed by 717 physician and allied health professionals. We actually represent a much larger group of approximately 2,600 Canadian clinicians, mostly physicians, all whom are greatly concerned about the drastic deterioration in our nation's health over the last four decades of poor dietary advice. As such, we have been using food as medicine to reverse disease.

We believe that our input, as doctors, is crucial for your committee to consider. Not only are we on the frontlines of dealing with the epidemics of obesity and diabetes, but we represent a group of doctors who have found a sustainable, evidence-based and groundbreaking way to *successfully reverse these conditions through diet alone*. If Canada wants to begin reversing its epidemics of chronic diseases and restore the health of Canadians using the most updated evidence available, authorities should at least hear the testimony of doctors who are actually accomplishing that.

We would like to applaud you and your team for recognizing that sugar is a massive problem in our population, especially for kids. We have reviewed the proposed changes to the dietary guidelines; we believe that shifting the focus away from sugar and processed food will have a dramatic impact on the incidence of obesity, diabetes and other nutritional diseases. We also applaud the decision to start working towards legislation that would stop the marketing of junk food to children. Rather than decide which food items are of concern, we would encourage adopting the recommendations of the Canadian Heart and Stroke Foundation, which are to eliminate the marketing of *all* food and beverage products to children and youth under 17.

Although we see many positive and needed changes in your proposed guiding principles,

we feel that key critical areas are missing which should be addressed, specifically the continued, perceived impact of saturated fats on cardiovascular risk, and the failure to address the science demonstrating that high carbohydrate diets unfavorably impact nutritional diseases. To issue guidelines which continue to caution against saturated fat and which do not caution against excessive refined carbohydrates would be a tremendous missed opportunity to give Canadians the advice they need to reverse our current nutritional disease epidemic.

Fat and saturated fat

It appears that your committee remains focused on the perceived need to reduce saturated fat. In the recent CBC report on food packaging planned by Health Canada (1), there was report on front-of-package warnings for items containing sugar, salt and saturated fat. While we absolutely agree with warnings on high-sugar items, we are greatly concerned about the suggestion that warnings might be placed on nutrient dense whole dairy products, such as full fat cheese and yogurt. Sweetened yogurt should be cautioned based on the sugar content, but unsweetened yogurt and other full fat dairy products are not only harmless, but very likely have a protective effect against heart disease (2, 3). One study found that children are less likely to be obese later in life if they drink full-fat milk rather than skim (4). This study showed a reduced incidence of Type 2 diabetes with increased concentration of dairy fats (5). Numerous other studies have shown that higher dairy fat is either associated with decreased obesity or is cardioprotective (6, 7, 8).

In order to reduce the incidence of Type 2 diabetes and cardiovascular disease, one should caution against the agents actually implicated in these diseases, which are sugar and refined carbohydrates - not natural saturated fat. In this review article (9), the authors examine the evidence linking saturated fats and sugars to coronary heart disease and conclude *“Dietary guidelines should shift focus away from reducing saturated fat, and from replacing saturated fat with carbohydrates, specifically when these carbohydrates are refined. To reduce the burden of CHD, guidelines should focus particularly on reducing intake of concentrated sugars, specifically the fructose-containing sugars like sucrose and high-fructose corn syrup in the form of ultra-processed foods and beverages.”* Again, we fully support front-of-package cautionary symbols on items containing added sugar and refined carbohydrates, but it would be an unfortunate mistake to caution against nutritious, whole foods such as full fat dairy.

Although we understand that it is difficult to overcome four decades of entrenched teaching about the long held beliefs of the harms of dietary saturated fat, we have essentially overwhelming evidence now that saturated fat is not harmful in the diet and does not

cause heart disease, but rather that the low fat dietary pattern has very likely caused harm ([10](#), [11](#), [12](#), [13](#), [14](#), [15](#), [16](#), [17](#)). A recent review by Hooper et al seems to have supported the ongoing fear of saturated fat ([18](#)), but a critical review of this study shows that there was no effect of reducing saturated fat on all-cause mortality, cardiovascular mortality, myocardial infarctions, non-fatal MI's, stroke, coronary heart disease mortality or coronary heart disease events ([17](#)). There were reduced combined cardiovascular events, but the authors state in the paper that it was not statistically significant when subjected to a sensitivity analysis. The recent review on saturated fats by the American Heart Association is an outlier and must be viewed in the context that this organization launched the very first dietary recommendations against saturated fat (and cholesterol) in 1961 and has been vigorously defending this position ever since. We encourage you to read the recent article published on Medscape by Nina Teicholz and Dr. Eric Thorn ([19](#)), where the anomaly of the American Heart Association report is explained. They conclude that *“over the past half century, the diet-heart hypothesis has been tested more than any other hypothesis in the history of nutrition, and thus far the results have been null.”*

Dr. Salim Yusuf of McMaster University who signed our open letter, recently presented results from the PURE study ([20](#)), which is an ongoing high level epidemiological study involving 14,000 people in 17 countries. While not yet published, the results of this critical study go directly against the current dietary guidelines and the proposed ongoing caution against saturated fat. This data showed that dietary fat is protective against cardiovascular disease, and specifically showed that saturated fat was not harmful and probably beneficial. As well, saturated fats from dairy sources were protective and those from meats were neutral. Red meat in moderate quantities was neutral. Importantly, increased carbohydrates were associated with increased cardiovascular disease. The weight of evidence indicates that saturated fat is not harmful, and that it is harmful to replace saturated fat with either carbohydrates or polyunsaturated fatty acids high in omega 6 fatty acids ([21](#), [22](#)).

It is extremely noteworthy that the Canadian Heart and Stroke Association in 2015 reviewed the same evidence covered by the AHA in its recent review, and instead of an ongoing caution, they decided to eliminate any percentile caps on saturated fat, judging that they were not warranted. In their Position Statement on Saturated Fat in Heart Disease ([23](#)), they state *“While the discussions and dialogue continue, it is important to note that the overall quality of one’s diet, combined with the types and quantity of food, have more impact on health than any single nutrient such as saturated fat.”* While we do not suggest Canadians seek out large quantities of saturated fat, there is no good evidence of its harm, and as such, there is no need for a cap or any caution related to eating the saturated fat found in whole food.

The problem is not saturated fat/cholesterol but insulin resistance

By focusing on saturated fat and LDL-cholesterol as prime drivers of cardiovascular disease, authorities are missing the bigger picture of what has caused our disease epidemics. Researchers over the past decade have discovered that the root cause of obesity and diabetes is the state of insulin resistance. Recent studies have shown that approximately 50% of the adult population in the US is insulin resistant, which is manifested by diabetes or prediabetes (24). We now have good evidence that insulin resistance is strongly related to cardiovascular disease (25), and that insulin resistance improves when carbohydrates are reduced.

The previous dietary guidelines included carbohydrates as the foundation of the diet. Although it is admirable that you now advise using whole foods, cooking at home and avoiding processed food, we believe you should also caution against consuming too many refined carbohydrates, which have contributed to our obesity and diabetes epidemics through the mechanism of insulin resistance. Food availability data show that over the last four decades, our intake of whole grains has decreased while our intake of refined carbohydrates has increased (26). The authors of this large epidemiological food consumption study concluded that *“the undisputable finding of our paper is the fact that the highest CVD prevalence can be found in countries with the highest carbohydrate consumption, whereas the lowest CVD prevalence is typical of countries with the highest intake of fat and protein”* (27). We have also seen a dramatic increase in the use of fructose, especially high fructose corn syrup, and we can show this has caused harm; excessive fructose intake is linked to dyslipidemia, non alcoholic fatty liver disease (NAFLD), metabolic syndrome, obesity and Type 2 diabetes. Alarming, many of these conditions are now presenting in children (28). Pediatric endocrinologist Dr. Robert Lustig documented improvement in triglycerides, LDL-C, blood pressure, insulin resistance and glucose tolerance in adolescents with metabolic syndrome within just 9 days of substituting fructose with non-sugar starch (29). Given that two thirds of items in Canadian grocery stores contain added/hidden sugars (often fructose) (30), we feel a specific comment regarding their detrimental effects is warranted. These effects are especially harmful in populations that are already insulin resistant, which includes anyone who suffers from obesity, Type 2 diabetes or prediabetes. This is also a critical reason to ensure that food labels clearly state the amount of ‘added sugar’ in addition to the total sugar content. By incorporating these ideas, the next food guide can lead Canadians to reverse many processed food diseases.

Low carbohydrate diet, backed by “gold standard” research

Our colleagues are physicians who are successful in reversing chronic nutritional diseases. The health of patients improves dramatically in every possible way when they adopt a diet lower in carbohydrates and higher in fat than what the government recommends. Patients who are obese or diabetic can no longer tolerate large amounts of carbohydrates, and for them, the current recommendation of 6+ servings of carbohydrates daily is too much. Of crucial importance is the fact that this approach is now supported by a large body of rigorous science. Low-carbohydrate diets have been evaluated in nearly 100 clinical trials, which show that the diet not only results in greater weight loss than any other diet, but also improves cardiovascular risk factors. Fifty-seven randomized controlled clinical trials have been performed comparing weight loss in low-fat versus low-carbohydrate diets; 48 of these trials showed more weight loss among patients in the low-carbohydrate arm (29 of these results were statistically significant), while 7 trials showed more weight loss in the low-fat arm (zero were statistically significant) ([31](#)). From a cardiovascular standpoint, a low carbohydrate diet consistently lowers triglycerides, increases HDL-cholesterol, decreases plasma insulin, decreases hemoglobin A1c--all of which are signs of decreased heart-disease risk, with no significant changes to LDL-cholesterol or total cholesterol ([32](#), [33](#)).

On lower-carbohydrate diets, patients not only lose weight without hunger, but their diabetes starts to reverse, such that many patients get off all their medications within months. The results on a pioneering trial of a very low-carbohydrate diet on some 330 diabetic patients found that 98% of them had reduced or eliminated their insulin after one year, and nearly 60% of them had reversed their diabetes diagnosis ([34](#)). Many other trials have shown similar results ([35](#), [36](#), [37](#), [38](#)).

Problem of a one-size-fits-all diet

We are entering the era of personalized medicine and our nutritional advice must change to account for that. Here is an example of what we see in our family and friends, and what our colleagues see in their patients every day. Just one year ago, a 36 year old male family member of one of the authors weighed 270 lbs and had nearly lifelong, ‘poorly controlled’ Type 2 diabetes with an A1c of 11.0, a fasting glucose of 15 mmol/L, and a blood pressure of 180/130 mmHg. He was on three oral diabetes medications and two antihypertensive medications. He found out about eating a whole food, low carbohydrate, high/healthy fat diet to treat his disease, and within three days of changing only the food he was eating, his blood pressure came down to 140/95 mmHg, and his fasting sugar was down to 8 mmol/L. Within 3 months, his A1c was down to 8.0, and his most recent A1c

(after 9 months) was 6.0. He is now coming off his medications with medical supervision, is 40 lbs lighter, and feels like his life was saved by removing the sugar and refined carbohydrates that had been continually raising his blood sugar and insulin levels. This man has a much lower tolerance for carbohydrates than someone who is not as inherently insulin resistant, and so his food intake for optimal health will look very different than a healthy, insulin sensitive and active person. This shows that we cannot offer one-size-fits-all nutritional advice.

So many Canadian physicians have looked at the modern evidence and are changing the course of people's lives away from disability and early death by using individualized therapeutic nutrition, often in the form of low carbohydrate, high natural fat diets. As so clearly illustrated in the above example, this highly effective, sensible and groundbreaking nutritional approach can reverse disease and has the unparalleled potential to salvage our healthcare system. It is time that Canada's dietary guidelines catch up with today's medicine and endorse the use of low-carbohydrate diets as an important treatment option for chronic nutritional diseases.

The problem with issuing dietary guidelines meant for the average healthy Canadian, is that half our population is already insulin resistant, and 30% are obese or overweight (39), an epidemic which began when the original low fat, high carbohydrate dietary guidelines were issued. People who are already sick with metabolic dysfunction require a different set of dietary guidelines as compared to the healthy Canadian. The proposed changes to the dietary guidelines also do not take into account the issue of cultural diversity. Your proposed guiding principles state that "*Traditional foods and the harvesting of traditional foods are intrinsically linked to identity and culture, and contribute to overall health.*" We could not agree more, but your advice to reduce saturated fat goes against traditional diets. The traditional diet of some populations in Canada is comprised mainly of animal fat and meat, which is certainly not low in saturated fat. We know that populations who maintain their traditional diet have low-to-non-existent rates of heart disease and Type 2 diabetes.

Science on other dietary issues (red meat, salt)

By including cautions against red meat, you are relying on epidemiological, or associational, studies. These do not stand up to more rigorous clinical trial data which does *not* demonstrate any negative health consequences from eating meat. Here, for example, is a recent review which shows no negative influence on cardiovascular risk factors with red meat intake of more than 0.5 servings per day (40). The advice to eat less red meat may already be having some unintended consequences. A recent report by

Public Health England shows that 25% of working age women do not have enough iron in their diet, and that almost half of teenage girls are at risk of iron-deficiency anemia. *“Encouraging all population groups to eat less red and processed meat, as the current Eatwell Guide does, is not helpful and places women at risk of iron deficiency and related anaemia”* ([41](#)).

As well, it appears that your report retains a recommendation for lower salt intake, but this another area where recent evidence shows that the guidelines have been incorrect. There are more than four large, high-quality studies published in top medical journals showing that less is not better and in fact can be harmful ([42](#), [43](#), [44](#)). These studies confirm that a moderate amount of salt is optimal.

Summary

Overall, it sounds like the dietary guidelines committee will be making some important changes to our Canadian guidelines, specifically in relation to sugar and processed food, which is excellent. However, we are concerned that your committee is relying on older evidence reviews that do not capture the most updated information available regarding salt, saturated fat and the impact of insulin resistance, all of which have undergone drastic paradigm shifts in the last several years. If previous guidelines were deemed not to be evidence based ([45](#)), then why would we go back to that poor evidence base and simply rehash old concepts which support outdated ideas? We now have four decades of conclusive population-based evidence that the low fat movement has failed, resulting in an alarming increase in the burden of nutritional diseases which threatens to bankrupt our medical system. We need to re-evaluate the evidence by which these recommendations have been made to make sure this type of catastrophic mistake is not repeated.

We strongly recommend using language about saturated fat which is similar to the Heart and Stroke Foundation position statement. We know that food with natural fats nearly always includes a mixture of saturated as well as mono- and polyunsaturated fats; for example, olive oil contains 14% saturated fat, and sirloin steak contains equivalent amounts of saturated and monounsaturated fats. Thus it is important to focus on nutritious whole food rather than individual macronutrients.

Lastly, we wonder if you and/or some of your guidelines committee might entertain a meeting to discuss the guidelines and our concerns, at a location of your choice. We would bring many interested physicians who are reversing chronic disease with food, from all over Canada; Nina Teicholz, the author of *‘The Big Fat Surprise’* and *The BMJ* article cited above, is also willing to come speak. We could do this anytime you might have an opening

in your schedule, but some of us are already speaking on Therapeutic Nutrition and a real/whole food way of eating to reverse chronic disease at the Physician Assistant conference in Ottawa in October, so that would certainly be a convenient time.

We thank you for your consideration, and we look forward to further engagement regarding our letter.

Thank you kindly for your time,

Dr. Barbra Allen Bradshaw
Anatomical Pathologist
Vernon, BC

Dr. Carol Loffelmann
Anesthesiologist
Toronto, ON

Contributions by: Nina Teicholz

References:

1. CBC News. June 21, 2017. New federal healthy eating strategy may lead to warning symbols on your cheese. [homepage on the Internet]. [Cited 2017 June 26]. Available from: <http://www.cbc.ca/beta/news/politics/federal-food-guide-changes-healthy-eating-1.4170245>
2. Alexander DD, JP Fryzek et al. Dairy consumption and CVD: a systematic review and meta-analysis. *Br J Nutr*. 2016 Feb 28;115(4):737-50.
3. Guo, J, S Soedamah-Muthu et al. Milk and dairy consumption and risk of cardiovascular diseases and all-cause mortality: dose–response meta-analysis of prospective cohort studies. *Eur J Epidemiol*. (2017) 32: 269.\
4. Vanderhoot S, J Macguire et al. Relation between milk-fat percentage, vitamin D, and BMI z score in early childhood. *Am J Clin Nutr* 2017 105: 1567.
5. Yakoob M, D Mozzafarian et al. Circulating Biomarkers of Dairy Fat and Risk of Incident Diabetes Mellitus Among US Men and Women in Two Large Prospective Cohorts. *Circulation*. 2017 Jul 11;136(2).
6. Kratz M et al. The relationship between high-fat dairy consumption and obesity, cardiovascular, and metabolic disease. *Eur J Nutr*. 2013 Feb;52(1):1-24.
7. Holmberg S, A Thelin. High dairy fat intake related to less central obesity: a male cohort study with 12 years' follow-up. *Scand J Prim Health Care*. 2013 Jun;31(2):89-94.
8. Scharf RJ, Demmer RT, DeBoer MD. Longitudinal evaluation of milk type consumed and weight status in preschoolers. *Archives of Disease in Childhood* Published Online First: 18 March 2013.
9. DiNicolantonio JJ, JH O'Keefe et al. The Evidence for Saturated Fat and for Sugar Related to Coronary Heart Disease. *Prog Cardiovasc Dis*. 2016 Mar-Apr.

10. de Souza R, S Anand et al. Intake of saturated and trans unsaturated fatty acids and risk of all cause mortality, cardiovascular disease, and type 2 diabetes: systematic review and meta-analysis of observational studies. *BMJ* 2015;351.
11. Schwingshackl L, G Hoffmann. Dietary fatty acids in the secondary prevention of coronary heart disease: a systematic review, meta-analysis and meta-regression. *BMJ Open* 2013;4(4).
12. Harcombe Z, F Grace et al. Evidence from randomised controlled trials did not support the introduction of dietary fat guidelines in 1977 and 1983: a systematic review and meta-analysis. *Open Heart* 2015;2.
13. Leosdottir M, G Berglund et al. Dietary fat intake and early mortality patterns--data from The Malmö Diet and Cancer Study. *J Intern Med.* 2005 Aug;258(2):153-65.
14. Mozzafarian D, EB Rimm, DM Herrington. Dietary fats, carbohydrate, and progression of coronary atherosclerosis in postmenopausal women. *Am J Clin Nutr.* 2004 Nov;80(5):1175-84.
15. Siri-Torino P, R Krauss et al. Meta-analysis of prospective cohort studies evaluating the association of saturated fat with cardiovascular disease. *Am J Clin Nutr* 2010;91:535–46.
16. Howard B, J Hsia et al. Cardiovascular Disease: The Women's Health Initiative Randomized Controlled Dietary Modification Trial. *JAMA.* 2006;295(6):655-666.
17. Harcombe Z. Dietary fat guidelines have no evidence base: where next for public health nutritional advice? *Br J Sports Med* 2017;51:769-774.
18. Hooper L, D Smith et al. Effect of cutting down the saturated fat we eat on our risk of heart disease. *Cochrane Database of Systematic Reviews* 2015, Issue 6.
19. Teicholz N, E Thorn. Commentary - Saturated Fats and CVD: AHA Convicts, We Say Acquit. *Medscape*, July 12, 2017. [homepage on the Internet]. [Cited 2017 July 16]. Available from: <http://www.medscape.com/viewarticle/882564>
20. Cardiobrief from MedPage Cardiology. Feb 27, 2017. [homepage on the Internet]. [Cited 2017 June 16]. Available from: <https://www.medpagetoday.com/cardiology/cardiobrief/63427>
21. DiNicolantonio J. The cardiometabolic consequences of replacing saturated fats with carbohydrates or Ω -6 polyunsaturated fats: Do the dietary guidelines have it wrong? *Open Heart* 2014 1(1).
22. Hamley S. The effect of replacing saturated fat with mostly n-6 polyunsaturated fat on coronary heart disease: a meta-analysis of randomised controlled trials. *Nutrition Journal* 2017;16:30.
23. Canadian Heart and Stroke Foundation: Position Statement on Saturated Fat, Heart Disease and Stroke, August 2015. [homepage on the Internet]. [Cited 2017 June 15]. Available from: http://www.heartandstroke.ca/-/media/pdf-files/canada/2017-position-statements/saturate_dfat-ps-eng.ashx
24. Menke A, L Geiss et al. Prevalence of and Trends in Diabetes Among Adults in the United States, 1988-2012. *JAMA* 2015;314(10):1021-1029.
25. Reaven G. Insulin resistance and coronary heart disease in nondiabetic individuals. *Arterioscler Thromb Vasc Biol.* 2012 Aug;32(8):1754-9.
26. Gross L, S Liu et al. Increased consumption of refined carbohydrates and the epidemic of type 2 diabetes in the United States: an ecologic assessment. *Am J Clin Nutr* May

2004; 79(5): 774-779.

27. Grasgruber P, J Cacek et al. Food consumption and the actual statistics of cardiovascular diseases: an epidemiological comparison of 42 European countries. *Food and Nutrition Research*. Vol 60 (2016).
28. Havel P. Dietary Fructose: Implications for Dysregulation of Energy Homeostasis and Lipid/Carbohydrate Metabolism. *Nutr Rev* 2005; 63 (5): 133-157.
29. Lustig R, J Schwarz et al. Isocaloric fructose restriction and metabolic improvement in children with obesity and metabolic syndrome. *Obesity* 2016; 24(2): 453-460.
30. Acton R, D Hammond et al. Added sugar in the packaged foods and beverages available at a major Canadian retailer in 2015: a descriptive analysis. *CMAJO* January 12, 2017; 5(1): E1-E6.
31. PHCUK, Summary of Randomized Controlled Trials Comparing Low Carb to Low Fat Diets. [homepage on the Internet]. [Cited 2017 July 16]. Available from: <https://phcuk.org/wp-content/uploads/2017/03/Summary-Table-Of-Randomised-Controlled-Trials-Comparing-Low-Carb-To-Low-Fat-Diets-13.03.2017.pdf>
32. Santos FL, JPL Nunes et al. Systematic review and meta-analysis of clinical trials of the effects of low carbohydrate diets on cardiovascular risk factors. *Obesity Reviews* 2012, 13: 1048–1066.
33. McKenzie MR, S Ilingworth. Should a Low Carbohydrate Diet be Recommended for Diabetes Management? *Proceedings of the Nutrition Society*. 2017 (76) OCE1 (E19).
34. Hallberg et al. One year results of Virta Health's remote care low carbohydrate diet, unpublished. [homepage on the Internet]. [Cited 2017 July 19]. Available from: <http://blog.virtahealth.com/remote-care-promotes-low-carbohydrate-diet-adherence-and-glycemic-control-allowing-medication-reduction-in-type-2-diabetes-abstract/>
35. Saslow LR, JT Moskowitz et al. An Online Intervention Comparing a Very Low-Carbohydrate Ketogenic Diet and Lifestyle Recommendations Versus a Plate Method Diet in Overweight Individuals With Type 2 Diabetes: A Randomized Controlled Trial. *J Med Internet Res*. 2017 Feb 13;19(2).
36. Goday A, FF Casaneuva et al. Short-term safety, tolerability and efficacy of a very low-calorie-ketogenic diet interventional weight loss program versus hypocaloric diet in patients with type 2 diabetes mellitus. *Nutr Diabetes*. 2016 Sep 19;6(9).
37. Hussain TA, HM Dashti. Effect of low-calorie versus low-carbohydrate ketogenic diet in type 2 diabetes. *Nutrition* 2012 Oct;28(10):1016-21.
38. Tay J, GD Brinkworth et al. Comparison of low- and high-carbohydrate diets for type 2 diabetes management: a randomized trial. *Am J Clin Nutr*. 2015 Oct;102(4):780-90.
39. Twells, LK, Midodzi W, et al. Current and predicted prevalence of obesity in Canada: a trend analysis. *CMAJ Open*. Mar 3, 2014. Vol 2 (1), E18-E26.
40. O'Connor LE, JE Kim, WW Campbell. Total red meat intake of ≥ 0.5 servings/d does not negatively influence cardiovascular disease risk factors: a systemically searched meta-analysis of randomized controlled trials. *Am J Clin Nutr*. 2017 Jan;105(1):57-69.
41. Sandeman, George. Women being put at risk of anaemia by following health advice to eat less red meat. The Sun article, July 9. 2017. [homepage on the Internet]. [Cited 2017 July 16]. Available from: <https://www.thesun.co.uk/news/3979250/women-being-put-at-risk-of-anaemia-by-following-health-advice-to-eat-less-red-meat/>

42. Experimental Biology 2017. "Low-sodium diet might not lower blood pressure: Findings from large, 16-year study contradict sodium limits in Dietary Guidelines for Americans." ScienceDaily. 25 April 2017.
43. Mancia G, J Narula et al. The technical report on sodium intake and cardiovascular disease in low- and middle-income countries by the joint working group of the World Heart Federation, the European Society of Hypertension and the European Public Health Association. *Eur Heart J*. 2017 Mar 7;38(10):712-719.
44. O'Donnell M, S Yusuf et al. Urinary sodium and potassium excretion, mortality and cardiovascular events. *N Engl J Med* 2014; 371: 612-623.
45. Teicholz N. The scientific report guiding the US dietary guidelines: is it scientific?. *BMJ* 2015;351.