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Rt Hon Sajid Javid MP
Secretary of State
Department of Health and Social Care
Richmond House
79 Whitehall
London SW1A 2NS

Dear Secretary of State

SACN report on lower carbohydrate diets for type 2 diabetes

The British Association for Nutrition and Lifestyle Medicine (**BANT**) is a professional body for nutritionists with clinical specialisms.

BANT has deep concerns regarding the credibility of a report produced by the Scientific Advisory Committee on Nutrition (**SACN**) on lower carbohydrate diets for type 2 diabetes (the **Report**), which was published on Public Health England's website on 26 May 2021. We write to set out those concerns, and to request that the new Office of Health Promotion within the Department of Health withdraw the Report and ask SACN to revisit it on the basis of the case below. BANT would be happy to discuss its analysis further with DH officials if that would assist its consideration of this matter.

The Report

The Report is based on a survey of all evidence emanating from literature searches whose parameters fell from a characterisation of type 2 diabetes which BANT considers to be deficient. The SACN Lower Carbohydrate Working Group included a representative from each of Diabetes UK (joint chair), the British Dietetic Association (BDA), NICE and the Royal College of Physicians, and also Professor Roy Taylor who is one of the leads on the Diabetes DiRECT trial which used very low calorie diets (soups/shakes plus fibre supplements) with some success such that the NHS is now using the model nationwide. BANT's concern is that the description used by SACN is not consistent with that used by the BDA, NICE, Diabetes UK and Professor Roy Taylor with the result that important clinical and other evidence was not considered by SACN. BANT would like SACN to be asked to

review its report so that the description is amended to bring it up-to-date, and further evidence considered.

The Issue

The descriptions are:

- 1) SACN: The Report, page 23: Diabetes is a condition in which the body does not produce sufficient insulin to regulate blood glucose concentrations and the insulin produced does not work effectively. This leads to elevated blood glucose concentrations (hyperglycaemia) which causes damage to blood vessels and nerves. There are two main types of diabetes: type 1 diabetes (T1D) and type 2 diabetes (T2D). There are also other forms such as gestational diabetes and rare genetic forms such as maturity onset diabetes of the young (MODY).
- 2) BDA Manual of Dietetic Practice 2019, pages 484, 716: Obesity and diabetes are associated with fatty infiltration of the liver...Type 2 diabetes is characterised by progressive beta-cell failure and is usually associated with peripheral insulin resistance. Complete or relative lack of insulin results in raised blood glucose levels and the diagnosis of diabetes.
- 3) NICE Type 2 Diabetes Management Guidelines: Type 2 diabetes is a chronic metabolic condition characterised by insulin resistance (that is, the body's inability to effectively use insulin) and insufficient pancreatic insulin production, resulting in high blood glucose levels (hyperglycaemia). [Introduction | Type 2 diabetes in adults: management | Guidance | NICE](#)
- 4) Diabetes UK DiRECT trial: Our understanding of type 2 diabetes is changing, as evidence accumulates that it is primarily a nutritional disease process. It is driven by weight gain; in susceptible or predisposed individuals, body fat accumulates in ectopic sites, specifically liver, pancreas and muscle including heart muscle.

Ref: Leslie, W.S., Ali, E., Harris, L. *et al.* Antihypertensive medication needs and blood pressure control with weight loss in the Diabetes Remission Clinical Trial (DiRECT). *Diabetologia* (2021). <https://doi.org/10.1007/s00125-021-05471-x>

- 5) Professor Roy Taylor: Type 2 diabetes is characterised by accumulation of more fat in the liver and pancreas than an individual can tolerate. Different people have different fat thresholds, and this explains why only around half of people diagnosed with type 2 diabetes are obese and some have a healthy body mass index. The excess fat within liver cells causes insulin resistance, and this entirely resolves if liver fat falls to low-normal levels. Once this happens insulin can act normally again, restraining the outpouring of glucose from the liver into the blood and rapidly normalising fasting blood glucose concentrations.

Ref: Taylor R, Ramachandran A, Yancy W S, Forouhi N G. Nutritional basis of type 2 diabetes remission *BMJ* 2021; 374 :n1449 doi:10.1136/bmj.n1449

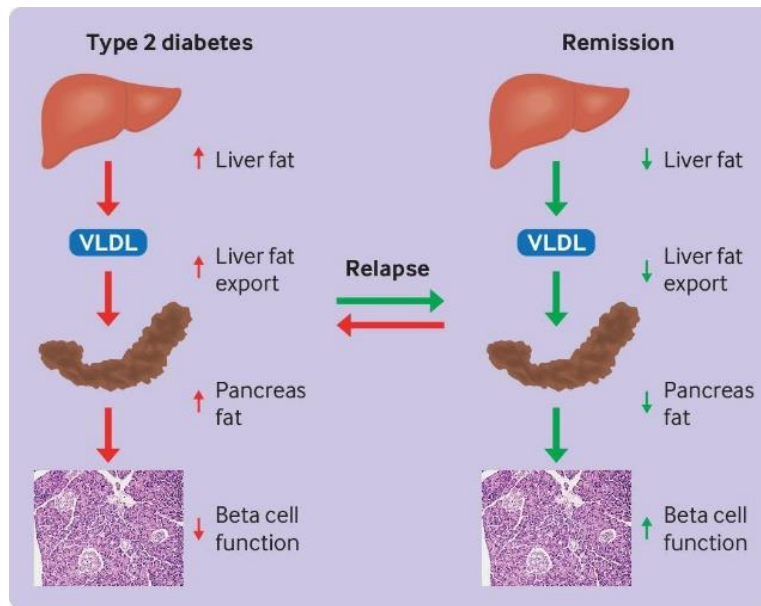


Figure 1 BMJ 2021;374:n1449

SACN's rudimentary characterisation resulted in a failure to include fatty liver/NAFLD in its search criteria. This is a clear defect. SACN's primary outcomes were HbA1C and weight loss (more than 12 months), with secondary outcomes being weight loss (3-12 months), fasting plasma glucose, blood lipids and medication use. Fatty liver/NAFLD should have been considered at least as a secondary outcome, though we would argue a case as a primary outcome alongside weight loss. This would also have led to an inquiry into the effects of specific carbohydrates, in particular free fructose, on the development of fatty liver/pancreas. BANT identified the issue of the omission of liver/pancreatic fat from SACN's characterisation during the public consultation: SACN's response was "it is not intended to be a comprehensive review of pathophysiology of T2D". For BANT a comprehensive review of the pathophysiology would include the pathways to *beta-cell dedifferentiation* which result in reduced insulin secretion and increased insulin resistance. Ref: Cinti F, Bouchi R, Kim-Muller JY, et al. Evidence of β -Cell Dedifferentiation in Human Type 2 Diabetes. *J Clin Endocrinol Metab.* 2016;101(3):1044–1054. doi:10.1210/jc.2015-2860

Conclusion

BANT is clear that the evidence review by SACN has significant omissions which impact the options for informed choice by clinicians/patients and public health practitioners tackling type 2 diabetes, obesity and diet-related metabolic conditions, and that the Report is therefore not in the public interest. BANT respectfully requests that the Health Secretary ask SACN to revisit its report to update the characterisation and search criteria so that a revision includes a review of additional evidence that is relevant.

Yours sincerely

Satu Jackson

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