

Consultation on the draft report:

Lower carbohydrate diets for adults with type 2 diabetes

Comments Form

Organisation	Weight Medics
Name of commentator and contact details	Dr Magda Robinson

- Please do not PDF the form.
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General comments	Comments
	Please insert each new comment in a new row
<i>Example: References</i>	<i>Example: Please check that referencing is consistent across all the chapters.</i>
<p>Long term low-carbohydrate diets increase mortality</p> <p>Section 6.206 and 7.63</p>	<p>Several large cohort studies in North America and Europe report increased mortality with low carbohydrate intake:</p> <p>Mazidi M., Katsiki N., Mikhailidis D.P., Sattar N., Banach M. Lower carbohydrate diets and all-cause and cause-specific mortality: a population-based cohort study and pooling of prospective studies. <i>Eur Heart J</i>. 2019;40:2870–2879. This study reports increased overall mortality, cerebrovascular, cardiovascular and cancer mortality.</p> <p>Lagiou P, Sandin S, Weiderpass E, et al. Low carbohydrate-high protein diet and mortality in a cohort of Swedish women. <i>J Intern Med</i> 2007; 261: 366–74.</p> <p>Li S, Flint A, Pai JK, Forman JP, Hu FB, Willett WC, Rexrode KM, Mukamal KJ, Rimm EB. Low carbohydrate diet from plant or animal sources and mortality among myocardial infarction survivors. <i>J Am Heart Assoc</i> 2014;3:e001169.</p> <p>Nilsson LM, Winkvist A, Eliasson M, et al. Low-carbohydrate, high-protein score and mortality in a northern Swedish population-based cohort. <i>Eur J Clin Nutr</i> 2012; 66: 694–700.</p> <p>Trichopoulou A, Psaltopoulou T, Orfanos P, Hsieh CC, Trichopoulos D. Low-carbohydrate-high-protein diet and long-term survival in a general population cohort. <i>Eur J Clin Nutr</i> 2007; 61: 575–81.</p> <p>Noto H, Goto A, Tsujimoto T, Noda M. Low-carbohydrate diets and all-cause mortality: a systematic review and meta-analysis of observational studies. <i>PLoS One</i> 2013; 8: e55030.</p>

	<p>Some studies have analysed the source of protein and reported that low carbohydrate intake is associated with increased mortality, but only if the carbohydrate is replaced with animal sources of protein and fat. If carbohydrate is replaced with plant-based sources there is a reduced mortality:</p> <p>Fung TT, van Dam RM, Hankinson SE, Stampfer M, Willett WC, Hu FB. Low-carbohydrate diets and all-cause and cause-specific mortality: two cohort studies. <i>Ann Intern Med</i> 2010; 153: 289–98.</p> <p>Seidelmann SB, Claggett B, Cheng S, et al. Dietary carbohydrate intake and mortality: a prospective cohort study and meta-analysis. <i>Lancet Public Health</i>. 2018;3(9):e419–e428. doi:10.1016/S2468-2667(18)30135-X</p>
<p>Risks of very low carbohydrate diets – these need to be fully elucidated.</p> <p>Section 3.17 states that intakes less than 50g a day are safe for up to 6 months. Please see my comments on this to the right and quotes from a 2019 review</p>	<p>A comprehensive review of low carbohydrate diets by the National Lipid Association in 2019 examines the risks:</p> <p>Kirkpatrick, C.F.; Bolick, J.P.; Kris-Etherton, P.M.; Sikand, G.; Aspry, K.E.; Soffer, D.E.; Willard, K.E.; Maki, K.C. Review of current evidence and clinical recommendations on the effects of low-carbohydrate and very-low-carbohydrate (including ketogenic) diets for the management of body weight and other cardiometabolic risk factors: A scientific statement from the National Lipid Association Nutrition and Lifestyle Task Force. <i>J. Clin. Lipidol.</i> 2019, S1933–S2874.</p> <p>I quote directly from the review here:</p> <p>“With VLCHF/KDs, gastrointestinal complaints tend to be the most common adverse effects, including constipation, nausea, and abdominal pain, which are experienced in the first few weeks.¹³ Some individuals may experience symptoms described as the “keto flu” within 2 to 4 days of beginning a VLCHF/KD, which may occur as the body adapts to using ketone bodies for fuel, may last a few days to one week, and include lightheadedness, dizziness, fatigue, difficulty exercising, poor sleep, and constipation.¹ Other adverse ef-</p>

fects that have been reported in individuals strictly following VLCHF/KDs include headache,^{30, 45} skin rash,⁴⁵ muscle cramps, weakness, diarrhea, dehydration, hypoglycemia,¹⁰⁰ increased levels of blood uric acid, and vitamin/mineral deficiencies.³⁰ Increased urination can lead to reduced levels of electrolytes, including sodium, magnesium, and potassium, and may be associated with symptoms of hypovolemia, as well as dizziness related to the need to reduce hypertension and/or hyperglycemia medications.”

“Caution in patients with ASCVD, risk of atrial fibrillation, and a history of heart failure, kidney disease, and liver disease

Close medical supervision is essential for individuals with ASCVD, risk of atrial fibrillation, or the presence or history of heart failure, kidney disease, or liver disease who choose to follow a very-low-CHO diet or KD.

- VLCHF/KDs are contraindicated in patients with a history of hypertriglyceridemia-associated acute pancreatitis, severe hypertriglyceridemia, or inherited causes of severe hypercholesterolemia.
- Individuals with T2D should receive medical supervision and cardiometabolic monitoring while on very-low-CHO diets or KDs.
- Low-CHO and very-low-CHO diets can lead to hypoglycemia or hypotension and may require adjustment in diabetes or hypertension medications.

Kirkpatrick et al 2019

- Patients taking SGLT2 inhibitors should avoid very-low-CHO KDs because of an increased risk of SGLT2 inhibitor-associated ketoacidosis.
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	<p>More frequent monitoring of vitamin K–dependent anticoagulation therapy may be required with very-low-CHO diets due to the potential change in vitamin K bioavailability and its effect on anticoagulation therapy.</p> <p>•</p> <p>Both low- and high-CHO intake has been associated with a higher risk of mortality in the general population; moderate-CHO intake has been associated with the lowest risk of mortality in the general population.”</p>
Not enough emphasis on the mechanisms of insulin resistance	<p>I have written extensively on low-carbohydrate diets and the effect on physiology. This includes mechanisms of saturated fat-mediated inflammation and insulin resistance. The evidence has been collated into a 257 page book, fully referenced: <i>Eat Carbohydrates: Get Thin and Healthy. The Medical Consequences of Low-Carbohydrate, High-Protein Diets</i>. It can be purchased from lulu.com or read for free online: issu.com/drmagdarobinson/docs/eat_carbohydrates_get_thin_and_healthy_,_dr_magd</p>

Please add extra rows as needed

Comments by paragraph	Comments
	Please insert each new comment in a new row
<i>Example: 1.2</i>	<i>Example: Missing reference and statement unclear</i>
Section 6.206 and 7.63	Please see comments above for evidence of increased mortality with low-carbohydrate diets
Section 3.17	Please see comments above for evidence of increased risks in the short term

Please add extra rows as needed