Diabetes

Omega-3 fatty acid supplements do not prevent or improve type 2 diabetes

Supplementary long chain polyunsaturated fatty acids (PUFA) such as omega-3 have no effect on the prevention of diabetes or on glucose metabolism, a large meta-analysis commissioned by the World Health Organization (WHO) has found.

The investigators, for the PUFAH research group, searched Cochrane CENTRAL, Medline and Embase, up to April 2017 and ClinicalTrials.com and the WHO International Clinical Trials Registry Platform up to September 2016. All ongoing trials were then reassessed in December 2018 for suitability.

Randomised controlled trials (RCTs) assessing the effects of increasing alpha-linolenic acid, long chain omega-3, omega-6 or total PUFA on diabetes diagnosis and glucose metabolism of at least 24 weeks' duration were deemed eligible.

A total of 83 RCTs, mainly assessing the effects of supplementary long chain omega-3 (66 trials), comprising 121,070 participants met the selection criteria. Participants were aged 18 years or over and included those with diabetes, prediabetes or normal glucose metabolism. Acutely ill patients were excluded as well as pregnant women. The mean duration of the trials was 33 months, and the mean dose of omega-3 PUFA was 2.0 g.

Long chain omega-3 had little or no effect on the likelihood of a diagnosis of diabetes; relative risk (RR) 1.00 (95% CI: 0.85-1.17) or any other measures of glucose metabolism including HbA_{1c}, fasting glucose, fasting insulin and insulin resistance (measured by HOMA-IR). All these measures had confidence intervals that crossed unity, suggesting no statistical effect.

At high doses of long chain omega-3 supplement (> 4.4 g/day) there was some suggestion of a worsening of glucose metabolism.

The study authors state: 'No convincing evidence suggests that altering intakes of long chain omega-3, alpha-linolenic acid, omega-6, or total PUFA alters glucose metabolism or risk of diabetes. Supplemental long chain omega-3 should not be encouraged for prevention or treatment of diabetes.'

Patients often spend a lot of money on over the counter supplements and GPs may be able to advise them on this aspect of supplementation.

DR MATTHEW LOCKYER

Brown TJ, Brainard J, Song F et al. Omega-3, omega-6, and total dietary polyunsaturated fat for prevention and treatment of type 2 diabetes mellitus: systematic review and meta-analysis of randomised controlled trials. *BMJ* 2019;366:l4697

We welcome your feedback

If you would like to comment on any of the clinical reviews write to: **editor@thepractitioner.co.uk**

Smoking cessation

Many smokers and former smokers have misconceptions about nicotine

Nearly 40% of smokers and former smokers believe it is the nicotine in cigarettes that causes cancer, a UK study has found.

Some smokers also overestimated the relative harm associated with e-cigarettes and nicotine replacement therapy (NRT) compared with cigarette smoking.

Members of an online panel managed by Ipsos MORI were invited to participate in a longitudinal survey. More than 6,000 individuals were eligible to participate and were either smokers or smokers who had quit in the preceding year.

Quotas were put on age, gender and geographical location to ensure a representative population, and the final study population after follow-up was 1,720 individuals.

The mean age of participants was 49 years, 56% were male. Half (51%) were daily smokers at the time of the study and a third (33%) were former smokers.

Overall, four out of ten respondents (39.2%) believed that it was the nicotine in cigarettes that caused cancer.

There was also widespread confusion over the relative harm of e-cigarettes and NRT compared with cigarette smoking.

Relative harm associated with e-cigarette vs cigarette smoking:

- 57% of the study population perceived e-cigarettes as less harmful
- 3% more harmful
- 22% equally harmful
- 18% did not know