

Obesity

Preventing type 2 diabetes: Time for tapas?



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Mediterranean diets, of which the main features are high intakes of vegetable fat, fibre and fish, with reduced intakes of animal fat, refined sugar and meats, and possibly a higher intake of alcohol, offer protection against cardiovascular disease. However, there are less data available on whether such diets also protect against the development of type 2 diabetes.

Several recent publications provide new insights into the dietary and associated lifestyle behaviours that sow the seeds of type 2 diabetes. Martínez-González and colleagues (summarised alongside) report a long-term observational study from Spain. The authors found close adherence to the Mediterranean diet to be associated with an 83% relative risk reduction for diabetes. The main limitation of the study was the small number of new cases of diabetes. Further, there were probably additional factors contributing to this result,

including differences in physical activity and consumption of fast foods experienced by participants. Nonetheless, this important study paints a picture of a lifestyle that contributes to reducing the risk of developing type 2 diabetes.

This study also receives support from the findings of the Whitehall II Study, which, in a recent analysis by McNaughton et al (summarised below), shows that low-fibre diets with large amounts of fast foods increase the risk of developing type 2 diabetes. Further, the North American Look AHEAD Study (summarised overleaf) also identified higher fast food intake, along with less self-weighing and fewer breakfasts, as risk factors for higher body mass indices in people with existing type 2 diabetes.

What can we make of this research? Clearly, there is no single dietary or behavioural factor that causes type 2 diabetes and can be avoided. However, in the quest to reduce the incidence of type 2 diabetes, these studies highlight dietary behaviours that need to be encouraged, and those that should be discouraged.

BRITISH MEDICAL JOURNAL

Mediterranean diet reduces risk of diabetes

Readability	✓✓✓✓✓
Applicability to practice	✓✓✓✓✓
WOW! factor	✓✓✓✓✓

1 Several lifestyle factors, such as exercise and weight loss, can help reduce the risk of developing type 2 diabetes. This study investigated the association between adherence to a Mediterranean diet and the risk of developing type 2 diabetes.

2 Data from 13 380 Spanish university graduates without diabetes were analysed in this prospective, cohort study.

3 Participants completed a semi-quantitative, validated food frequency questionnaire to determine dietary habits and were followed-up for 4.4 years. Those who developed diabetes during the course of the study ($n=33$) completed an additional, more detailed questionnaire.

4 The authors estimated that 158 new cases of type 2 diabetes would be diagnosed during the study period, having taken into account age and sex distribution of cohort members.

5 Results showed that close adherence to a Mediterranean diet was associated with an 83% relative reduction in the risk of developing diabetes.

6 Adjusting for sex and age showed that the incidence rate ratio in people with moderate adherence to a Mediterranean diet was 0.41, and 0.17 for those with a high adherence to the diet, compared with those with low adherence.

7 Consequently, maintaining a Mediterranean diet lowers the risk of developing type 2 diabetes.

Martínez-González MA, de la Fuente-Arillaga C, Nunez-Cordoba JM et al (2008) Adherence to Mediterranean diet and risk of developing diabetes: prospective cohort study. *BMJ* **336**: 1348–51

DIABETES CARE

Dietary patterns that predict diabetes

Readability	✓✓✓✓✓
Applicability to practice	✓✓✓✓✓
WOW! factor	✓✓✓✓✓

1 This study aimed to investigate the relationship between dietary patterns associated with insulin resistance and the incidence of type 2 diabetes.

2 Data from 7339 people participating in the Whitehall II Study were analysed and the dietary

patterns of each participant ranked based on a 127-item food frequency questionnaire.

3 The authors identified that a dietary pattern characterised by high consumption of junk foods was positively correlated with insulin resistance and significantly associated with the risk of type 2 diabetes ($P_{\text{trend}} < 0.0001$).

4 The data were adjusted for ethnicity, employment, health behaviours (including smoking and physical activity), blood pressure and body mass index but remained significant ($P_{\text{trend}} < 0.0001$).

McNaughton SA, Mishra GD, Brunner EJ (2008) Dietary patterns, insulin resistance, and incidence of type 2 diabetes in the Whitehall II Study. *Diabetes Care* **31**: 1343–48

“Participants who self-weighed less than once per week, who ate more fast food meals or who ate fewer breakfasts per week, had higher BMIs.”

JOURNAL OF DIABETES AND ITS COMPLICATIONS

Clinicians less likely to prescribe insulin for obese people

Readability	✓✓✓
Applicability to practice	✓✓✓✓
WOW! factor	✓✓✓

1 Factors contributing to insulin prescription for people with type 2 diabetes include age, severity of diabetes, and use of other medications. This study aimed to determine if obesity affected the likelihood of insulin being commenced.

2 Data from 6468 people with diabetes and poor glycaemic control ($HbA_{1c} > 7.4\%$), not previously treated with insulin, were included in the analysis.

3 Obese people were more likely to be prescribed two oral antidiabetic agents ($P=0.02$) and showed a “hazard” of insulin initiation that was significantly lower than that of non-obese people (hazard ratio 0.814; $P=0.01$).

4 The study suggests that clinicians are less likely to prescribe insulin for obese people with type 2 diabetes.

Yurgin N, Scecnik K, Lage MJ (2008) Obesity and the use of insulin: A study of patients with type 2 diabetes in the UK. *Journal of Diabetes and its Complications* **22**: 235–40

JOURNAL OF THE AMERICAN DIETETIC ASSOCIATION

Motivational intervention helps adherence to Mediterranean diet

Readability	✓✓✓✓
Applicability to practice	✓✓✓✓
WOW! factor	✓✓✓

1 This study aimed to investigate whether or not motivational interventions are effective in improving adherence to a Mediterranean diet.

2 A total of 1551 participants were randomised to one of three intervention groups: two Mediterranean diet groups and one control.

3 The Mediterranean diet groups received 3-monthly motivational interviews and quarterly assessments, the control group received verbal instructions only.

4 After 12 months, a significant dietary improvement in the two Mediterranean diet groups could be seen, with an overall increase in olive oil, fruit and vegetable intake ($P=0.05$).

Zazpe I, Sanchez-Tainta A, Estruch R et al (2008) A large randomized individual and group intervention conducted by registered dietitians increased adherence to Mediterranean-type diets: The PREDIMED Study. *Journal of the American Dietetic Association* **108**: 1134–44

DIABETES CARE

Obesity increases heart disease risk in diabetes

Readability	✓✓✓✓
Applicability to practice	✓✓✓
WOW! factor	✓✓✓

1 Using data from the Framingham Heart Study, lifetime risk of cardiovascular disease (CVD) in both obese and non-obese people with diabetes was assessed.

2 In women of healthy body weight with diabetes, the lifetime risk of CVD was 54.8%, increasing to 78.8% in those who were obese. Similarly, in men of healthy body weight with diabetes the lifetime risk of CVD was 78.6%, and 86.9% for those who were obese.

3 Thus, the risk of developing CVD is not only higher in people with diabetes, but is increased further in those with concurrent obesity.

Fox CS, Pencina MJ, Wilson PW (2008) Lifetime risk of cardiovascular disease among individuals with and without diabetes stratified by obesity status in the Framingham Heart Study. *Diabetes Care* **31**: 1582–4

DIABETES CARE

Breakfast and regular weighing among best weight loss strategies

Readability	✓✓✓✓
Applicability to practice	✓✓✓✓✓
WOW! factor	✓✓✓✓

1 Weight loss is encouraged in people with type 2 diabetes, however little is known about the most effective intentional weight loss strategies.

2 This study investigated a variety of intentional weight loss strategies, including frequent self-weighing, changes in eating patterns, and other weight control practices, and their relation to BMI in overweight people with type 2 diabetes participating in the Look AHEAD (Action for Health in Diabetes) trial.

3 A total of 3063 women and 2082 men with a BMI $\geq 25\text{kg/m}^2$ participated; data on their weight loss strategies were collected at baseline and subsequently correlated with BMI.

4 The most common strategies employed for weight loss were increased fruit and vegetable consumption, avoiding sweets and minimizing carbohydrate intake; these methods were reported by $>60\%$ of the study population and practised for ≥ 20 weeks during the 12-month study period.

5 Other reported weight loss strategies included self-weighing more than once per week, eating breakfast regularly and consuming fewer snacks and fast foods.

6 Analysis of each weight loss strategy showed that participants who self-weighed less than once per week, who ate more fast food meals or who ate fewer breakfasts per week, had higher BMIs ($P<0.05$).

Raynor HA, Jeffery RW, Ruggiero AM et al (2008) Weight loss strategies associated with BMI in overweight adults with type 2 diabetes at entry into the Look AHEAD (Action for Health in Diabetes) trial. *Diabetes Care* **31**: 1299–304