

Diabetic patients in the highest quartile of protein intake had 260% higher odds for poor glycemic

Protein intake among patients with diabetes is linked poor glycemic control

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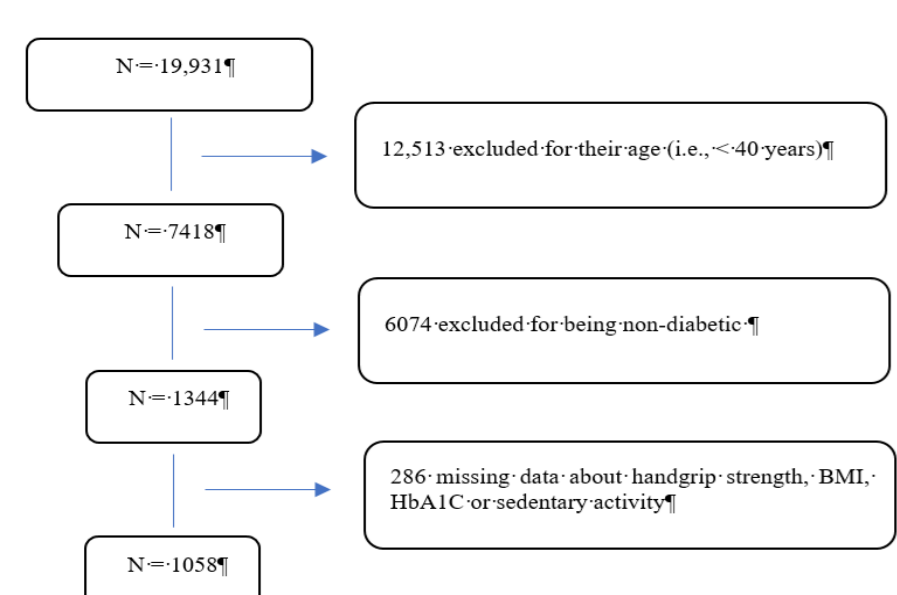
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Introduction

- Nutrition therapy is considered a key component of diabetes management.
- High-protein diets are recently gaining more popularity.
- Knowledge regarding the potential glycemic effect of protein in people with type 2 diabetes has been a particular interest

Methods

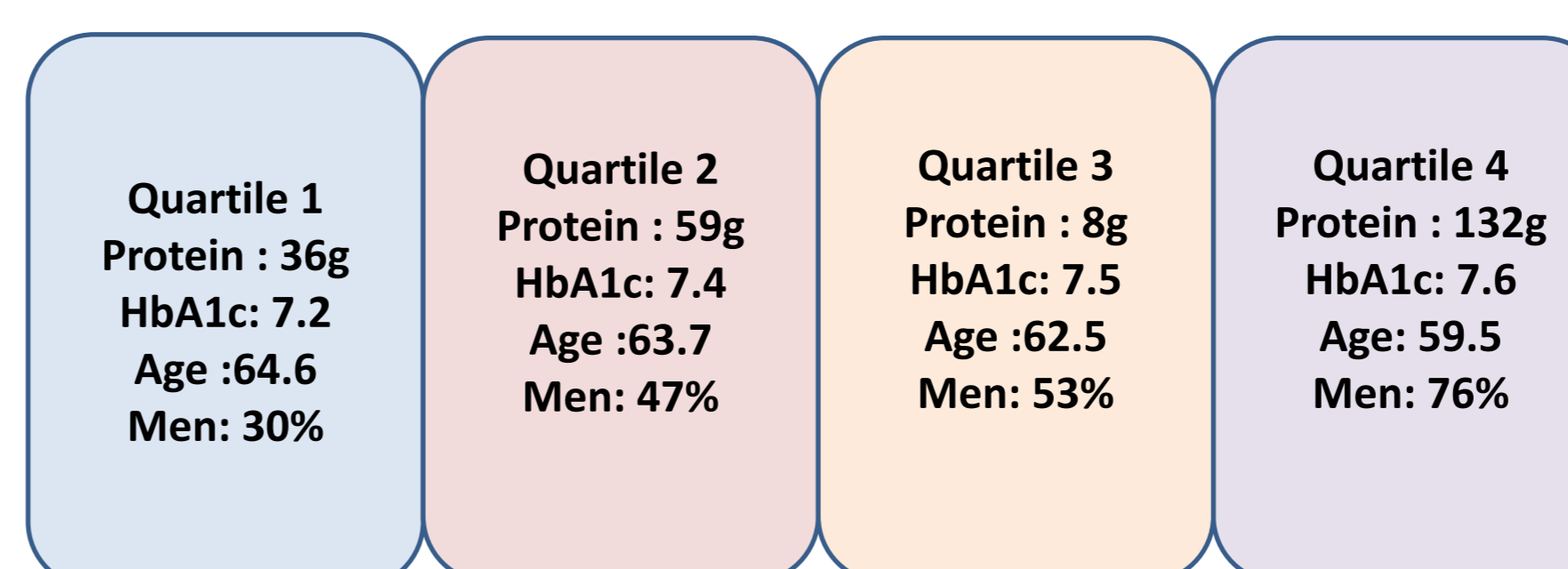
- This study is a cross-sectional study based on NHANES data collected on participants aged 40 years and older who attended the surveys cohorts of 2011–2012 and 2013–2014.
- Study sample is described in the chart below



- Dependent variable: Glycaemic control measured as HbA1c
- Independent variable: Protein intake. Participants were classified into 4 groups based on quartiles of daily protein intake.
- Confounding variables: Age, gender, race and energy intake muscle strength (quartile), sedentary activity, income to poverty ratio, education, smoking, alcohol drinking and BMI

Results

- The figure below shows major sample characteristics by quartiles of protein consumption.



- After controlling for muscle strength (quartile), sedentary activity, income to poverty ratio, education, smoking, alcohol drinking and BMI; patients in Quartile 4 for protein intake had 260% increased risk for poor glycemic control as compared to those in quartile 1.

Association between quartiles of protein intake and poor glycemic control (n=990)

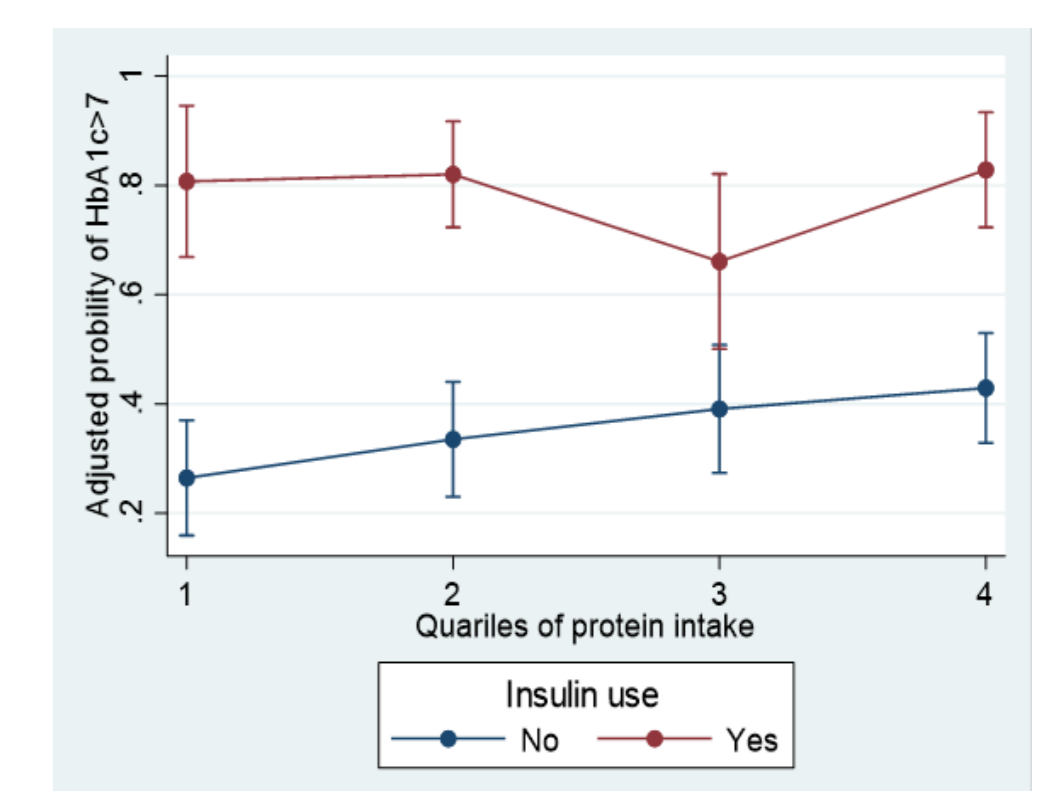
	Q1	Q2	Q3	Q4	p for trend
Model 1	1.00	1.37 (0.79-2.38)	1.33 (0.71-2.49)	2.32 (1.20-4.50)	0.033
Model 2	1.00	1.68 (0.92-3.06)	1.73 (0.85-3.53)	2.61 (1.29-5.30)	0.02

Model1 adjusted for age, gender, race and energy intake
 Model2 further adjusted for and muscle strength (quartile), sedentary activity, income to poverty ratio, education, smoking, alcohol drinking and BMI

Discussion

- High protein intake augments prandial insulin secretion and might thereby improve glycaemic control in type 2 diabetic patients. On the other hand, epidemiological studies suggest that chronic high dietary protein intake is associated with increased incidence of type 2 diabetes. Furthermore, a short-term increase in plasma amino acid concentrations has been shown to directly induce insulin resistance in skeletal muscle and stimulate endogenous glucose production

More results



Among non insulin users, protein intake was positively associated with poor glycemic control.

So what?

Advise for patients with diabetes about following diets high in protein such as keto diet or atkins diet must be given with precautions. This study is limited to lack of investigation about the sources of protein. More studies about types and amounts of protein intake among patients with diabetes is warranted.

References

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- Daly ME, Paisey R, Paisey R, Millward BA, Eccles C, Williams K, Hammersley S, MacLeod KM, Gale TJ. Short-term effects of severe dietary carbohydrate-restriction advice in Type 2 diabetes—a randomized controlled trial. *Diabetic medicine*. 2006 Jan;23(1):15-20.
- Dong JY, Zhang ZL, Wang PY, Qin LQ. Effects of high-protein diets on body weight, glycaemic control, blood lipids and blood pressure in type 2 diabetes: meta-analysis of randomised controlled trials. *British journal of nutrition*. 2013 Sep;110(5):781-9.

