



# communicating Food for Health

## Do High Protein Diets Promote Diabetes?

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Over the last several decades we have seen a marked increase in BMI and type 2 DM throughout much of Asia as traditionally minimally processed high carbohydrate (CHO) diets low in animal products have been displaced by increasing amounts of refined sugars, animal protein, and fat. By contrast, in the USA and other developed countries, BMI and type 2 DM are also increasing markedly over the past several decades as the amount and % of dietary CHO has increased, while dietary fat intake has actually declined modestly as a % of total calories, although not in absolute terms. Much of this increase in dietary CHO in the US has come from increasing consumption of sugar-rich drinks. It seems likely that the increasing intake of sugar, especially in drinks, is a major factor promoting excessive calorie intake, increasing BMIs, and more insulin resis-

tance (IR) and type 2 DM in both Asian countries and the West. There is reason to believe that calorie dense foods high in fat and/or refined CHO will cause many people to consume excess calories, accumulate body fat, and develop IR and type 2 DM. This has led to speculation that consuming more animal protein and less CHO will aid weight loss and reverse IR and perhaps even type 2 DM. Over the past two decades nearly all the best-selling diet books have promoted low-CHO diets higher in animal protein foods. The US Dietary Guidelines have long discouraged the intake of animal products and particularly those high in saturated fat and cholesterol. This dietary advice has led most Americans to consume fewer eggs, full fat dairy products, and fatty meats and so has helped reduce the average intake of saturated fat and cholesterol in the US and helped lower average serum cholesterol levels and no doubt con-

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July '16

*Professional Member Edition*

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*Does more lean animal protein and less CHO reduce diabetes? Not according to data from the very large European Prospective Investigation into Cancer and Nutrition (EPIC) study.*

tributed to the marked decline in deaths from heart attacks seen in the USA over the past 50 years. However, this advice has certainly not helped stem the expanding waistlines of most Americans over the past five decades. Today 75% of men and 68% of women age 25 or older are overweight or obese and the number of Americans with type 2 DM has increased dramatically. There seems to be no debate among nutrition experts about the need to limit refined CHO and perhaps especially sugar-rich drinks. However, Paleo-diet advocates suggest more lean animal protein and fewer whole grains would be best for improving the health of most people and stemming the growing prevalence of type 2 DM.

**Does More Lean Animal Protein and Less CHO Reduce Diabetes?**

Not according to data from the very large European Prospective Investigation into Cancer and Nutrition (EPIC) study. After an average follow up period of 12 y who found a significantly increased risk of developing type 2 DM in those eating

more protein and especially animal protein. This trend was strongest for obese women who were 19% more likely to develop type 2 DM for each 10g daily intake in animal protein. The authors concluded that, given the rapid rise in type 2 DM in Europe, "... limiting iso-energetic diets high in dietary proteins, particularly from animal sources, should be considered" (1). But how could consuming more animal protein and less dietary CHO be promoting IR and type 2 DM even after correcting for BMI? Past research had suggested that it is largely factors associated with red meat intake such as heme iron, advanced glycation end products (AGEs), and/or nitrites in processed meats that may account for this increased risk. However, data from the EPIC study showed protein from red and processed meats was not primarily responsible for promoting type 2 DM in muscle cells, as the results showed increasing protein from eggs, dairy, poultry, and fish were also associated with more type 2 DM. Indeed, while protein from vegetable sources did not

appear nearly as bad as animal proteins for promoting type 2 DM, they certainly were not protective either. One plausible factor might be the relatively higher intake of branched chain amino acids (BCAA) found in animal proteins than in vegetable proteins. Data from the Framingham Heart Study show an elevation of BCAA levels in the blood precedes the development of type 2 DM by many years (2). However, the mechanism by which BCAA or some metabolite of these BCAA might be promoting the development of IR and type 2 DM has been a mystery. That is no longer the case as Dr. Zoltan Arany and his research team at the Perlmutter School of Medicine at UPenn and colleagues at Harvard, Princeton, the University of Pittsburgh, and the University of Alabama have determined that a metabolite of valine (one of the three BCAA) called 3-hydroxyisobutyrate (3-HIB) is largely responsible for promoting IR. In a series of elaborate studies on cultured mouse and...

*(Continued at <https://foodandhealth.com/do-proteins-promote-diabetes/>).*

## Food Safety Tips for Picnic Month:

July is Picnic Month, which means it's a great opportunity to teach your audience about food safety. Use these tips and facts at your next presentation, cooking demonstration, or client meeting.

According to the CDC, every year, **1 in 6 Americans gets sick** after consuming a contaminated food or beverage. These illnesses are largely preventable with proper food safety, yet picnics are where food safety strategies often break down. Foods sit out for far too long at the wrong temperature, and people can easily contaminate a dish by grabbing a serving with their hands or double-dipping.

Tell your audience to remember the "**two hour rule**." Any potentially-hazardous foods (dairy, meat, fish, cooked vegetables,

rice, or chopped/sliced fruits and vegetables) that have sat out at room temperature for more than two hours should not be eaten.

If the outside temperature is more than 90 degrees, make it a "**one hour rule**." Hot temperatures are just right for allowing the bacteria in food to multiply to numbers that could make people sick.

For cold foods, **highlight the joys of ice**. Make a point to remind people to use enough ice when they pack their picnics. If they're using coolers to keep food cold, they need to have enough ice to keep the foods below 40 degrees.

At a group picnic, encourage people to **label and describe their food items**. This will help keep people from smelling or touching the foods with their hands, or even taking just a little taste to see what it is. Plus,

labeling foods clearly is a great way to stave off any complications from food allergies.

It's also a good idea to have **tongs or other serving utensils** available. This will help people avoid using their fingers or "double dipping" at the picnic.

Finally, **don't take leftovers home**. This could be risky. Not only has the food sat out at room temperature or higher for a long time, but if you have shared dishes with other picnickers, there is potential contamination from the many people you've picnicked with.

Living can be easy in the summertime, but food safety takes a little more effort and planning. Have a wonderful and food-safe summer!

*By Cheryle Jones Syracuse, MS, Professor Emeritus at The Ohio State University*

### Communicating Food for Health

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