

## May/June 2012 Newsletter

Photo by Sebastien Guberti



Dr. Hassell teaching son Tor the basics of responsible red meat eating – which means lots of vegetables on the side.

## Boo! Scared of red meat?

Here is a headline you may have seen recently: “Red meat is blamed for one in ten early deaths.” Whoa! There’s something about that headline that makes the needle quiver on my common sense meter. It refers to a recent study (we’ll call it the Pan study) which concluded that one serving – about three ounces – of red meat daily was associated with a 13% increase in relative risk of death. While the barbecue is heating up, we will:

1. Review why we must be cautious when using observational data.
2. Look closer at the Pan study.<sup>1</sup>
3. Consider other evidence supporting red meat as part of a vegetable-rich Mediterranean-style diet.

## Cautions with observational data

Observational studies can’t identify cause and effect, just associations. This concept is summed up in a truism that is pounded into medical students: “Correlation does not prove causation.” Observational studies are an important part of research but their limitations need to be considered to avoid drawing wrong conclusions. For example, an earlier report from the Nurses’

Health Study showed significant health benefits for people taking vitamin E supplements. When these findings were studied more carefully in the form of randomized control trials, they found that vitamin E was associated with higher death rates.<sup>2</sup> Oops!

## Evaluating the Pan red meat study

The Pan study retrospectively reviewed combined data from the *Nurses’ Health Study* and the *Health Professionals Follow-Up Study*, both large studies. Although well done, they suffer from the inherent weakness of all observational studies – they can only be used to generate hypotheses, which in a perfect world would be tested with more rigorous methodology, like a randomized controlled trial.

In spite of the scary headline we mentioned, the Pan study can’t say red meat is to blame for the outcome, it can only say that there is an “association”. Hopefully, no one knows better than the researchers themselves that, well, association does not prove causation!

A few problems with the Pan study deserve mentioning. For one thing, it was not designed to study the effect of meat on health. The data were drawn from dietary habit surveys collected every two to four years. Recollections are often inaccurate, and processed meat (like deli meats) may be classified as red meat due to the nature of the survey. Other factors may have skewed the results – for example, an increased tendency of red meat eaters in the study to smoke, to be overweight, and to be more sedentary; or that the meat may have been part of a fast food meal with soda and fries. Even the best statistician cannot be sure of properly accounting for these kinds of confounding variables.

## The bottom line:

We do know this, however: populations eating a Mediterranean-style diet, including moderate amounts of red meat, have better health outcomes, whether measured by total mortality, heart disease risk, diabetes, cancer incidence, or dementia.<sup>3</sup>

<sup>1</sup> Pan, A. et al. Arch Intern Med epub 12 March 2012

<sup>2</sup> Bairati, I. et al. Int J Cancer 2006;119(9):221-4

<sup>3</sup> Sofi, F. et al. AJCN 2010;92:1189-96

## Dissenting data

Much can be learned by comparing observational studies with other observational studies that look at the same questions. In the largest analysis of this sort, drawn from twenty high-quality studies looking at the meat-eating behavior and overall health of more than 1,000,000 people from ten countries and studied for as long as eighteen years,<sup>4</sup> **unprocessed red meat consumption of a little over three ounces per day was not associated with an increase in heart disease, stroke or diabetes, whereas processed meat consumption of a little less than two ounces daily was associated with a 20% increase in diabetes risk and a 50% increase in heart disease risk.** (For more about why we recommend avoiding processed meat, see the August 2010 newsletter at [www.goodfoodgreatmedicine.com](http://www.goodfoodgreatmedicine.com) .)

## Randomized controlled trials and red meat

Randomized controlled trials, on the other hand, are the gold standard of health research. They compare outcomes between similar groups of people who are matched as well as possible for factors like age, sex, health history, and whether or not they are smokers. There are very few randomized controlled trials which compare healthy diets with and without red meat, and these are short-term studies. Here are two that we found helpful:

1. The BOLD study<sup>5</sup> compared healthy diets with and without lean red meat (up to 5 ounces/day). **The greatest improvements in cardiovascular risk factors, including total cholesterol, LDL cholesterol, and inflammatory markers, were found in those who ate the *most* red meat.**
2. Another randomized controlled trial that sheds some light on this issue studied the effects of a low-fat diet compared to a high-protein Atkin's diet and a Mediterranean diet in obese patients who were followed for two years. **Those people eating the Mediterranean and Atkin's diets, both of which have the highest amount of red meat, saturated fat, and cholesterol, had the best weight loss, insulin resistance and inflammatory markers, and cholesterol levels.**<sup>6</sup>

<sup>4</sup> Micha, R. et al. *Circulation* 2010;121:2271-83

<sup>5</sup> Roussell, M. et al. *Am J Clin Nutr* 2012;95:9-16

<sup>6</sup> Shai, I. et al. *NEJM* 2008;359:229-41

## What about saturated fat data?

Many people continue to assume that the saturated fat in red meat is a risk factor for heart disease, **yet there is solid data to indicate that there is no heart disease risk with eating saturated fats!**<sup>7</sup> Sugars and other refined carbohydrates, however, appear to be a significant risk for heart disease. If you are still concerned about the risk of saturated fat, please take the time to look at the evidence in the study we mention in footnote #7 at the bottom of this page.

## Summary

- Many studies have addressed the red meat issue with conclusions that fall on both sides. I believe the evidence supports including red meat as part of an omnivorous whole food Mediterranean-style diet – and I certainly eat red meat myself. As a personal observation, after taking care of patients for 17 years, I find it striking how often people are happier and more energetic after adding some red meat to their diet.
- Red meat is a nutrient-dense food and a rich source of protein, iron, zinc, and B vitamins that cannot be duplicated by supplements.
- We recommend no more than 1.5 pounds of red meat (raw weight) per week, as some studies suggest that cancer risk rises when consumption goes above that level.<sup>8</sup>
- Red meat should only take up about 1/4 – 1/3 of the real estate on your plate to leave lots of room for culinary heroes like vegetables and beans.
- Guilty as charged: processed (preserved or cured) meat such as lunch meats, cured sausages, bacon, ham, and hot dogs. Not eligible for parole.

## Speaking Events

**5/15/2012 – How a Greek Grandmother Would Solve the Health Care Crisis: Which Diet and Lifestyle Choices Really Matter?** Clackamas County Employee Services, Oregon City, Oregon. *For Clackamas County employees only.*

**6/2/2012 – How a Greek Grandmother Would Solve the Health Care Crisis: Which Diet and Lifestyle Choices Really Matter?** Oregon State Council of PeriOperative Nurses Mini Conference, Salishan Lodge: Gleneden Beach, Oregon. *Conference participants only.*

*“Prove all things; hold fast that which is good.”*

*1 Thessalonians. 5:21 (KJV)*

<sup>7</sup> Siri-Tarino, P.W. et al. *Am J Clin Nutr* 2010;91:502-9

<sup>8</sup> American Institute for Cancer Research 2007