

Is there any truth in the claims that Red Meat causes cancer?

A statement released by Prof Hettie Schönfeldt, Institute of Food, Nutrition and Well-being of the University of Pretoria on 27 Oct 2015.

The International Agency for Research on Cancer (IARC) published their evaluation of red and processed meat on October 26, 2015 in the British Medical journal *The Lancet Oncology*. It states that *“Red meat contains high biological value proteins and important micronutrients such as B vitamins, iron (both free iron and haem iron), and zinc.”*

In response, the Cancer Research UK pointed out that the IARC isn't saying that eating red and processed meat as part of a balanced diet causes cancer: no single food causes cancer. Nor is it saying it's as dangerous as smoking. The IARC itself has said that the risk from processed meat and red meat remains small.

A Working Group of 22 scientists from 10 countries was unable to reach a consensus agreement. However, based on majority agreement, the Working Group classified:

- *Consumption of red meat as “probably carcinogenic to humans” (Group 2A).*
- *Consumption of processed meat as “carcinogenic to humans” (Group 1).*

Notice should however be paid to the following scientific facts:

1. The IARC which released the report represents the opinion of a selected group of scientists, not consensus in the scientific community. Moreover, IARC conducts hazard analysis, not risk assessments. This distinction is important. It means they consider whether meat at some level, under some circumstance, could be a hazard.
2. This evaluation does not introduce any new evidence. It is based on existing scientific literature.
3. Cancer is a multi-complex problem that cannot be solved or blamed on one specific product or food group.
4. None of the 22 scientists from the 10 countries that participated in the study represented developing countries. This is a shortcoming in relation to South Africa as a developing country with an emerging economy.
5. Food culture of people differs around the world. The majority of South Africans consume mostly chicken, then beef, followed by pork, lamb or mutton and processed meat (BFAP, 2015).
6. On average South Africans eat notably less protein-source foods (11 to 18%) compared to recommended levels by the World Health Organisation (WHO) which state that 20% of total dietary energy should be from protein (Mchiza et al., 2015).
7. Food energy of South Africans are mainly derived from carbohydrates such as maize meal and bread (between 57% and 69%) (Mchiza et al., 2015), which is

significantly higher than the recommended 45%. This may be more linked to affordability than to choice.

8. Animal protein, such as red meat, is a favourite food in our diets but the portions at a population level still remain smaller than that recommended by the South African Food-Based Dietary Guidelines. A surprisingly high intake of eggs and sardines were reported in a recent study in Gauteng investigating meat consumption (Vermeulen et al., 2015), and the total intake of red meat, white meat, fish and eggs remained less than the recommended intake of up to 90g per day. South Africans furthermore consume approximately 4.2kg of processed meat per person per year, which equals to less than 1/3 sausage per day at 12g processed meat per day (SAMPA, 2015).
9. The national Food-Based Dietary Guidelines of the Department of Health recommends that South Africans “eat a variety of food” and that “fish, chicken, lean meat or eggs could be eaten daily”.
10. Red meat plays an important role in a balanced diet, as it contains high biological-value protein and important micronutrients such as B Vitamins, iron (both free iron and haem iron), and zinc. Some segments of the population, such as children, teen girls and women of childbearing age, may benefit from an additional serving of meat.
11. There is no evidence that removing meat from your diet protects you from cancer. In fact a major long term study by the Oxford University, UK (Key et al., 2014), has shown no difference in colorectal cancer rates between meat eaters and vegetarians.
12. South African red meat contains less fat than red meat in most first world countries, and the composition of red meat indicates a reduction in total fat content over time. For example research results found that the average fat content of target grade beef decreased from 32% in 1949 to 18% in 1981, and again to 13% in 1991 (Naude, 1994), and currently 11.3% according to a study performed at the University of Pretoria (UP) (Hall, 2015). The reduction in fat is directly linked to consumer demand for leaner products.
13. The best way to minimize your cancer risk is to live a healthy lifestyle, including:
 - Do not smoke
 - Maintain a healthy weight
 - Enjoy regular physical activity
 - Accompany red meat with plenty of vegetables and whole grains
 - If you do, drink alcohol responsibly.

Quoting from the article (The Lancet Oncology, 2015):

“The largest body of epidemiological data concerned colorectal cancer. Data on the association of red meat consumption with colorectal cancer were available from 14 cohort studies. Positive associations were seen with high versus low consumption of red meat in half of those studies, including a cohort from ten European countries

spanning a wide range of meat consumption and other large cohorts in Sweden and Australia. Of the 15 informative case-control studies considered, seven reported positive associations of colorectal cancer with high versus low consumption of red meat. Positive associations of colorectal cancer with consumption of processed meat were reported in 12 of the 18 cohort studies that provided relevant data, including studies in Europe, Japan, and the USA. Supporting evidence came from six of nine informative case-control studies. A meta-analysis of colorectal cancer in ten cohort studies reported a statistically significant dose–response relationship, with a 17% increased risk (95% CI 1.05–1.31) per 100 g per day of red meat and an 18% increase (95% CI 1.10–1.28) per 50 g per day of processed meat.”

The following key messages have been released by the International Meat Secretariat (IMS) (<http://factsaboutbeef.com/>)

1. Based on years of scientific evidence no one single food – including red and processed meat - can cause or cure any type of cancer.
 - Based on our understanding of the science there is no causal relationship between red and processed meat consumption and cancer.
 - In addition to providing high quality protein, red and processed meat are important sources of nutrients such as B-vitamins, iron and zinc which support growth, development, maintenance and repair of the body.
2. The best way to minimize your cancer risk is to live a healthy lifestyle.
 - Do not smoke, maintain a healthy weight, enjoy regular physical activity, accompany red and processed meat with plenty of vegetables and whole grains, and if you do, drink alcohol responsibly.
 - Genetics and aging are risk factors which we cannot control.
 - Cancer is a complex disease – there are a multitude of factors which may impact one’s risk.
3. Enjoy red and processed meat as recommended in your country’s dietary guidance.
 - Some segments of the population, such as children, teen girls and women of childbearing age, may benefit from an additional serving of red or processed meat.
 - Other people, particularly men, may benefit from keeping their meat portions in check and replacing some of their meat calories with additional vegetables, fruit and whole grains.
4. Be a conscientious cook.
 - Stay by the grill or barbecue and flip the meat more often to avoid overcooking and possible charring of the meat surface.
 - Avoid direct exposure of the meat to an open flame.
 - Panfry red and processed meat over medium versus high heat.
 - Marinate meat in marinades containing citrus juices like lemon or lime and add spices such as garlic or onion.