

The link between red meat and colon Cancer

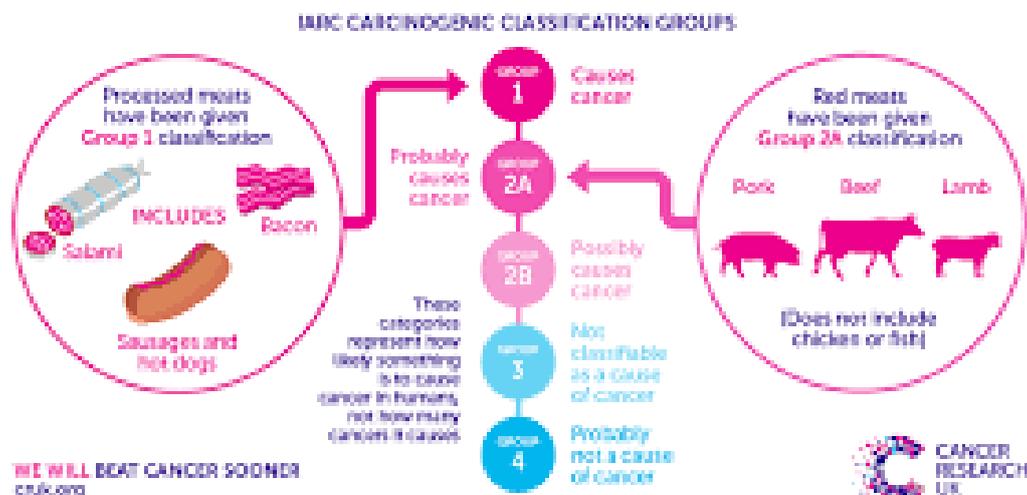
Dr. Daniela Capdepon, Consultant Oncologist and Oncohematologist
Medical Director, Campana Cancer Center
Australian Medical Council, Australia

Received: 28 September 2021: Accepted: 3 October 2021; Published: 10
October 2021

Citation: Daniela Capdepon, The link between red meat and colon Cancer 2021: 09-
11

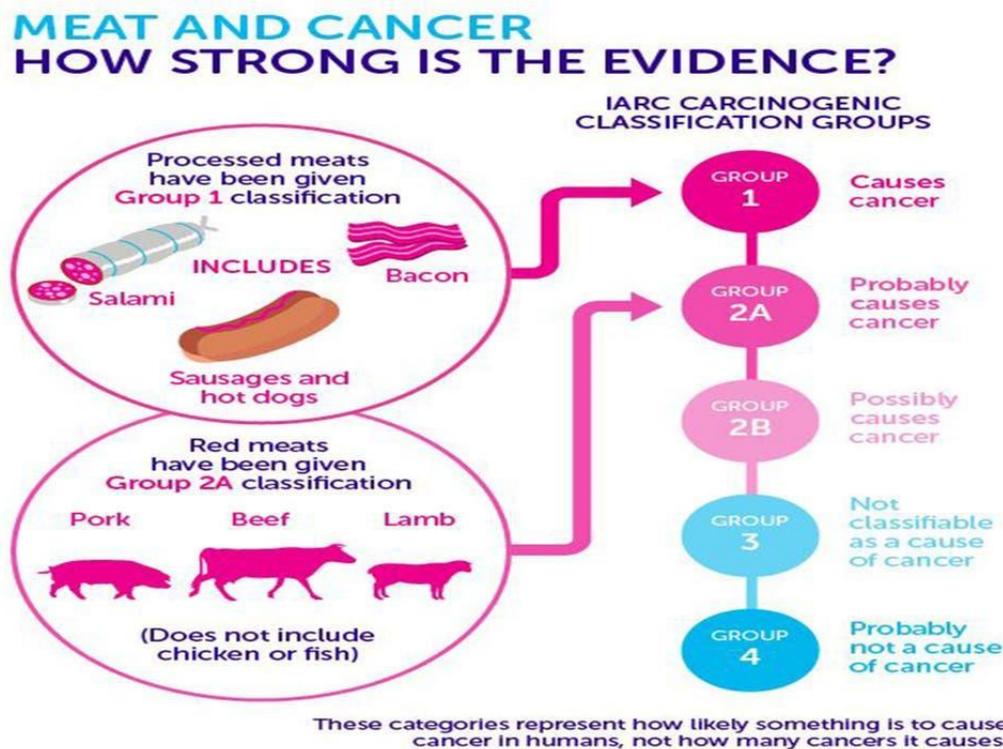
Evidence **implicating red and processed meat** in the development of colorectal cancer has been building for years. In 2015, based on data from 800 studies, IARC classified processed meat as a human carcinogen (Group 1), meaning that there is enough evidence to conclude that it can cause cancer in humans. Numerous studies have linked a diet high in red and processed meats with colorectal cancer, but it's been unclear how eating cheeseburgers, hot dogs, and lamb chops could fuel the development of this disease.

MEAT AND CANCER HOW STRONG IS THE EVIDENCE?



Researchers have identified a consistent pattern of DNA damage in the colorectal tumours of people with frequent consumption of red and processed meat.

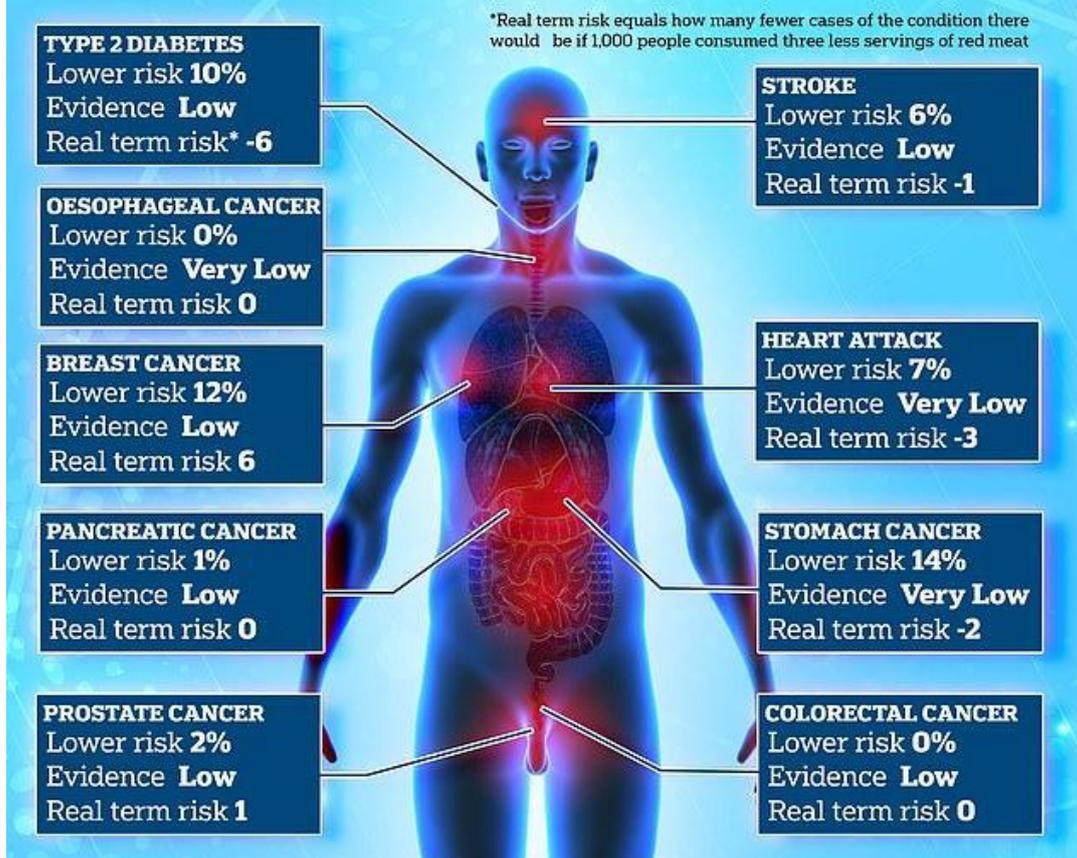
Evidence implicating red and processed meat in the development of colorectal cancer has been building for years. In 2015, based on data from 800 studies (Group 1), meaning that there is enough evidence to conclude that it can cause cancer in humans. The evidence for red meat was less definitive, so IARC classified it as a probable carcinogen (Group 2A). Researchers are still trying to tease out exactly how red and processed meat might cause cancer. Some studies have suggested that preservatives such as nitrates and nitrites that are added to processed meats can produce compounds that damage DNA. Other studies have looked into how chemicals that are formed when red meat is cooked at high temperatures, such as in grilling, cause the accumulation of mutations that lead to cancer. Using DNA analysis to identify mutational signatures can help scientists identify the origin of the DNA damage that initiated the growth of a given tumour. Mutational signatures are distinct patterns of DNA damage that reflect different mutational processes. Some mutational signatures arise from processes that happen within the body, such as DNA repair or oxidative stress, whereas others are indicative of environmental exposures, such as UV light or tobacco smoke.



This new study conducted whole-exome sequencing on samples of normal and tumour tissue from 900 people who were diagnosed with colorectal cancer.

The researchers identified several mutational signatures in the tumour tissue, including an alkylating signature that was associated with red meat consumption. People in the top 10% of red meat consumption — that is, those who consumed on average more than 150 grams, or roughly two servings, of processed or unprocessed red meat per day — had the highest levels of the alkylating signature.

HOW COULD CUTTING OUT THREE SERVINGS OF RED MEAT SLASH YOUR RISK OF SEVERAL CANCERS, HEART DISEASE AND TYPE 2 DIABETES?



Establishing a link

Although the results vary, studies from around the world have suggested that high consumption of meat is linked to an increased risk of colon cancer. In some studies, fresh meat appears culpable; in others, it's processed, cured, or salted meat — but in all cases, the worry is confined to red meat.

References:

- <https://www.cancer.gov>.
- <https://www.health.harvard.edu/staying-healthy/red-meat-and-colon-cancer>.
- Cancer Research UK.