

# Does eating processed meats cause colorectal cancer?

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They're integral to summer, as ubiquitous as a zinged-up nose or a

backyard cricket game. From December onward, walk into any gathering and processed meats are being served. It's the bacon sizzling on the barbecue, the cured ham at Christmas lunch and the salami on the grazing platter.

However, many of us have heard about a link between processed meats and [colorectal cancer](#), which kills more than 5,000 Australians each year. Is this just a myth, or are we putting ourselves at increased [cancer risk](#) by including processed meats in our diet?

Australians eat a lot of [meat](#), and a significant proportion of that is processed. According to data from the Organization for Economic Cooperation and Development (OECD), we consumed approximately 110 kilograms per person per year in 2018, second only to the United States. Based on the [last national diet survey in 2011–12](#), up to a quarter of the meat consumed has been salted, cured, fermented, smoked or otherwise processed.

## **Processed meat as a carcinogen**

In 2015, the International Agency for Research on Cancer (IARC) at the World Health Organization (WHO) assessed more than 800 studies to understand the link between processed meats and [cancer](#). The studies excluded other cancer-causing factors like obesity, so that the effect of processed meats could be isolated.

The IARC's Working Group was chaired by Professor Bernard Stewart from UNSW Medicine & Health, who is an internationally recognized expert in environmental carcinogenesis (cancer causation).

Ultimately the IARC classified processed meat as a carcinogen, meaning they found sufficient evidence that eating processed meats causes colorectal cancer.

So, how does this work? There are several explanations, the first and foremost being nitrites found in processed meat products.

"Processed meat, at least historically, has been processed using sodium nitrite," Prof. Stewart said. "That nitrite can react with molecules in the body to form N-nitroso compounds, which are cancer-causing substances."

Cooking processed meat, particularly over [high heat](#) or an open flame, can also be part of the problem.

"There are also carcinogens that are not inherently present in the meat but are generated during cooking. For example, [polycyclic aromatic hydrocarbons](#) (PAHs) and heterocyclic amines (HCAs)," Prof. Stewart said.

## **Should processed meat carry a warning label?**

If processed meat is a carcinogen, should packets of sausages and bacon carry warning labels, like cigarettes? According to Prof. Stewart, it's not that simple.

"On the one hand, the evidence concerning cancer causation by consumption of processed meats is as definitive as the evidence that tobacco smoke and asbestos cause [lung cancer](#). On the other hand, the same level of preventative action is in no way warranted."

Different carcinogens have [different levels of impact](#) on cancer risk. For [tobacco smoke](#), the impact is high: the lifetime risk of lung cancer in a non-smoker is 1% and in a heavy smoker it is 25%. However, for someone who consumes processed meat frequently rather than moderately, their lifetime risk of colorectal cancer increases from 5% to 6%.

This means that while there is strong evidence that eating processed meats causes colorectal cancer, the actual impact on cancer risk is relatively small.

## Reducing colorectal cancer risk

Although eating salami may not be as dangerous as smoking cigarettes or breathing in asbestos particles, it does contribute to cancer. But there may be ways to counteract the effects of processed meats in your gut—at least partially. This includes eating foods like fruits, vegetables and [whole grains](#).

Associate Professor Sara Grafenauer from UNSW Medicine & Health, who is an Accredited Practicing Dietitian, is researching how eating whole grains may protect against colorectal cancer. Whole grains can have an indirect effect by combating obesity, but also directly prevent carcinogenic activity inside the gut. Importantly, [dietary patterns](#) with whole grains could mean prevention of disease, saving millions in health care costs.

"The whole grain is a bundle of nutrients that has anti-carcinogenic properties," A/Prof. Grafenauer said. "It contains many compounds that are stimulating anti-oxidant activity in the gut and are being protective.

"Also, because whole grains are fibrous, they can also bind carcinogens and remove them from the gut."

So, after considering the risks of eating processed meat, is it "safe" to nibble on salami or order a BLT? The answer is "yes" because a nibble is not the problem. Increased risk of cancer is measurable among people who eat processed meat on a regular and daily basis. With this knowledge, what's on the menu this summer is for you to decide.

Provided by University of New South Wales

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