

What is Processed Meat & What Meats are Processed?

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*Processed meats are classified as group 1 carcinogens and connected to a variety of diseases.
Explore why and if there is a safe amount to consume.*



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Introduction

In the United States, diet-related diseases are a leading cause of mortality. There has been an increased focus on research to understand the connection between specific foods and overall human health. In 2015, the World Health Organization classified processed meat as a carcinogen.

Additional studies revealed a link between processed meats and other chronic diseases like cardiovascular disease and diabetes. Given the prevalence of these diseases and their profound impact on public health, this information is a critical part of shaping our understanding and management of nutrition and well-being. In this article, we will explore the topic of processed meat and the impacts of its consumption.

What Is Processed Meat?

The definition of [processed meat](#) is not fixed and is best understood in the context of the methods used to produce it. This category of meat broadly encompasses a [range of treatments and processes](#), such as smoking, salting, curing, fermenting, or even the addition of chemicals, to

enhance flavor or extend shelf life. Some [examples of meats typically deemed processed](#) are ham, sausage, bacon, hot dogs, jerky, pepperoni, canned meats, and deli meat. These meats are classified as such because they have often undergone one or more of the aforementioned treatment processes.

A commonly held belief is that most processed meats are red meat like pork or beef, but they can include white meat such as turkey or chicken. For example, many chicken products are subjected to a salt bath for preservation and flavor enhancement, so they also fall under the processed meat category. Additionally, despite being associated with processed meat, not all red meat is considered processed. Nonetheless, studies showed that unprocessed red meat has adverse health effects as well.

Beyond these treatment methods, processed meats also have a commonality in that they have been classified as a Group 1 carcinogenic and associated with chronic diseases. This classification states that processed meats can increase the risk of cancer. Additionally, numerous studies have shown a link between processed meats overall and a variety of chronic diseases. The key contributors to these adverse health effects are the high levels of salt, saturated fats, damaging compounds, and additives.

Are Some Processed Meats Worse For You Than Others?

Assessing and ranking the health impacts of different types of processed meats is complex due to the challenges associated with distinguishing between various meat products in the available studies. Most studies do not differentiate between types of meat, so it is challenging to pinpoint specific health effects associated with individual types. There has not been a conclusive comparative study between processed red and white meat. However, there have been studies showing the detrimental effects of red meat consumption and how they may be potentially worse than white meat consumption. At this point, [ranking](#) one above the other would involve some degree of speculation. Processing methods and ingredients used can vary significantly, making it difficult to rank the entire category of processed meats. It remains crucial for individuals to make mindful choices and consider the overall nutritional value of the processed meat products they consume.

Why Processed Meat is Bad For You

Processed meats are often associated with an unhealthy lifestyle. For example, [smoking is more common](#) among those who consume high quantities of processed meat. The studies surrounding processed meat and health therefore had to correct other unhealthy lifestyle habits. Nonetheless, there was still a connection between processed meat and [chronic diseases](#).

What makes processed meat so unhealthy are the chemicals associated with the process, such as nitrate, n-nitroso compounds, and nitrosamines. Processed meats are often cured or preserved with nitrites that cause [N-nitroso](#) compounds like nitrosamines in the food they are treating. These compounds are carcinogenic and contribute to [cancer risk](#). [Nitrite](#) is added for several reasons, primarily to preserve the color and flavor of meat, and to prevent the growth of bacteria, which also helps with the preservation and flavor. As previously mentioned, nitrites give rise to nitrosamines. [Nitrosamines](#) can also be found in contaminated drinking water, tobacco, and smoke. However, processed meats are ultimately the main dietary source of [nitrosamines](#). Nitrosamines are typically formed when exposed to heat, such as when meat is cooked.

These nitrosamines have been shown to contribute to the formation of stomach and [bowel cancer](#). As a result, because consumers have become wary of nitrates, products have begun to be labeled as [nitrite-free](#). However, these nitrite-free processed meats still ultimately contain [nitrate](#), which converts to a natural form of nitrite. Studies have not definitively determined whether the source of nitrates, natural or synthetic, has a differential impact on health. Regardless of the source, it's the carcinogenic compounds they produce that remain a potential issue, even in "nitrite-free" processed meats.

Polycyclic aromatic hydrocarbons or [PAHs](#) are also commonly associated with processed meat. These [compounds form](#) when organic matter, typically meat, undergoes combustion during processes like smoking for preservation and flavor enhancement. While PAHs have been found throughout the environment, they are often exposed to us via our diet. Studies have shown that [PAHs](#) have roles in the carcinogenesis of colorectal cancer.

Furthermore, processed meats contain high levels of heterocyclic amines or HCAs. These chemical compounds can be found in most meat that is cooked at high temperatures. However, [HCAs](#) are significantly abundant in processed meats like sausages and bacon. HCAs are associated with many common cancers. For example, [cancers](#) of the colorectal, breast, prostate, pancreas, lung, stomach, and esophagus tissue.

Cancer is a major concern for processed meats, but it is not the only health issue that's been associated. Processed meats are often salted for both preservation and flavor. The added salt accumulates quickly, resulting in increased [blood pressure and risk of cardiovascular disease](#). Cancer is still a factor for these processed meats treated with sodium chloride. Studies have shown that high-salt diets can increase the risk of [stomach cancer](#).

Studies have demonstrated a connection between processed meats and type 2 [diabetes](#). A study found that individuals with higher nitrite intake from processed meats were 53% more likely to be diagnosed with [type 2 diabetes](#). Researchers note that nitrites in these foods can damage pancreatic cells responsible for insulin production, suggesting a potential association between processed meat consumption and an increased risk of [type 2 diabetes](#). There is also a link between processed meat and both Alzheimer's disease and dementia. A study demonstrated that for every additional 25 grams of processed meat in a person's daily intake, the risk of dementia increased by 44% and Alzheimer's by 52 percent.

An abundance of studies have focused on the links between cardiovascular disease and processed meat consumption. When meat consumption and rate of cardiovascular disease were tracked across a diverse range of people, results demonstrated that processed meat had the most significant effect on [cardiovascular disease](#). A [study](#) demonstrated that eating 150 grams or more of processed meat a week increased the risk of heart disease by 46% and death by 50%.

Overall, the evidence indicates that processed meats are associated with type 2 diabetes, Alzheimer's, dementia, cardiovascular disease, and cancer, all of which cause [mortality](#).

Why Are Processed Meats A Cancer Risk?

The World Health Organization has found sufficient evidence that processed meat is [carcinogenic](#) to humans. In this classification, red meat is categorized as a Group 2A carcinogen, indicating that it is likely to cause cancer, while processed meats are classified as [Group 1 carcinogens](#), signifying that

they are known to cause cancer. These classifications are the result of numerous studies that have revealed the carcinogenic properties of processed meat as a result of the compounds within them, both added and naturally occurring.

One significant factor contributing to the cancer risk associated with processed meats is the formation of carcinogens during the cooking process itself. High-temperature cooking methods can lead to the creation of harmful cancer-linked compounds such as [HCAs](#) and [PAHs](#).

The International Agency for Research on Cancer, a subsidiary of the World Health Organization, conducted a comprehensive evaluation of [800 studies](#), involving over twenty scientists from ten countries. The International Agency for Research on Cancer concluded that consumption of processed meats is associated with an increased risk of developing breast, colorectal, pancreatic, and prostate cancer. This further emphasizes the importance of limiting processed meat intake to reduce cancer risk.

How Much Processed Meat Is Safe To Eat?

While there is no way to eliminate the risk of cancer, The American Institute of Cancer Research strongly advises against the consumption of processed meats due to their well-established [carcinogenic](#) nature. The Dietary Guidelines for Americans recommends [dietary patterns](#) low in processed meats and high in plant foods. A safe level of consumption for processed meat has not been determined, however, several studies have indicated that a higher intake of processed meat is associated with an elevated risk of mortality and the development of [diseases](#) such as cancer, cardiovascular issues, and diabetes.

To enhance human health, dietary guidelines stress the importance of limiting, and potentially, completely avoiding processed meats. They advocate for the replacement of processed meats with plant-based protein sources such as legumes and nuts. These [plant-based alternatives](#) have demonstrated their potential to reduce the risk of chronic diseases and promote overall well-being.

Conclusion

Processed meat encompasses a broad category of meat products that undergo various treatments to enhance flavor and extend shelf life. Recent studies have shown that they also share a common classification as Group 1 carcinogens, due to their potential to increase the risk of cancer and association with chronic diseases. The compounds contributing to this classification can be synthetically or naturally added and are often released by the cooking process. The amount of evidence linking processed meats to health issues shows that our dietary choices play a critical role in our well-being. It stands to reason that because diet can have a negative impact on our health, it can also have a positive one. Embracing a plant-based diet can mitigate some of the risks associated with processed meats and also contribute to better health and a more sustainable food system.