

Palm Oil Promotes Metastasis in Your Mouth

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✓ Fact Checked

STORY AT-A-GLANCE

- › An animal study demonstrates palmitic acid, one of the most commonly used vegetable oils, triggers epigenetic changes that fuel metastatic cancer growth, even when used for a short time
- › The palm oil industry imposes far-reaching detrimental effects on human health and the environment. Land clearing practices lead to air pollution that have resulted in premature death, cardiovascular disease and respiratory illnesses in Southeast Asia
- › Vegetable oils raise your level of omega-6 fatty acid. This imbalance leads to inflammation and harm health having been linked to heart disease and higher rates of mortality
- › It is vital to dramatically reduce your vegetable oil intake and recognize the evidence-based link between your diet and cancer development and metastasis

The type of fat you eat has an impact on your health and can affect your risk of certain diseases. An animal study published in *Nature*¹ in November 2021 found a link between palmitic acid from palm oil and cancer metastasis. Another compelling report published in the journal *Gastroenterology*² offers a radically novel, yet logically sound, explanation as to why unsaturated fat intake is associated with increased mortality from COVID-19.

According to the *Gastroenterology* study, data indicate that mortality rates are heavily influenced by the amount of unsaturated fats you eat. On the bright side, they believe

early treatment with inexpensive calcium and egg albumin could reduce rates of organ failure and ICU admissions.

Although no clinical studies have been done yet, the authors believe it's time as it appears that early albumin and calcium supplementation may bind unsaturated fats and reduce injury to vital organs. They also point out that saturated fats are protective by reducing lipolysis.³

The argument over what constitutes a healthy diet is highly influenced by processed food manufacturers who liberally use omega-6 fats in their products and promote seed oils as a “healthy” alternative to lard and butter. However, the evidence against unsaturated fats continues to mount and this time it's been linked to the spread of cancer.

Palmitic Acid Promoted Metastasis in an Animal Study

The Institute for Research in Biomedicine in Barcelona conducted the study published in Nature.⁴ In this experiment, the researchers demonstrated that palmitic acid promoted metastasis of melanoma and oral cancers in mice.⁵ Some of the hallmarks of metastasis are fatty acid uptake and altered metabolism.

In this study, oral tumor cells and skin cancer melanomas were exposed to palmitic acid and then transplanted into mice. The researchers watched how quickly the cells spread and found even when they were exposed to the palmitic acid for a short period there was a greater capacity to metastasize. There appeared to be permanent alterations in the genome of the metastatic cells.⁶

Subsequently, these cells had the most aggressive properties, which the authors described as a “stable memory.” The researchers believe that the results favor the development of malignant cancer when cells are exposed to palmitic acid, even in the very early stages when a tumor may not have been detected. When palmitic acid was removed, cancer cells that had already been exposed remained highly metastatic.⁷

The cells appeared to have a colonizing capacity as a result of palmitic acid but not after exposure to oleic acid or linoleic acid.⁸ This suggested that the aggressive nature of the cells was linked to epigenetic modifications that occurred in response to palmitic acid. One of the pathways identified in this study was a neural network that forms around a tumor after the cells are exposed to palmitic acid.

Tumor cells with the greatest capacity to metastasize worked with the animals' neural network to produce a regenerative environment where the cells could grow and spread. The researchers' cellular analysis indicated that the genetic influence of palmitic acid affected Schwann cells,⁹ which are a primary part of the peripheral nervous system.¹⁰

These Schwann cells secreted an extracellular matrix that triggered metastasis. The researchers concluded the evidence suggested palmitic acid induced changes that "lead to a long-term stimulation of metastasis, and that this is related to a pro regenerative state of tumor-activated Schwann cells."¹¹

The researchers believe blocking the epigenetic changes that occur with exposure to palmitic acid could effectively stop metastasis for these tumor cells. The idea was to identify how the process could be blocked to interfere with a tumor response. Salvador Aznar-Benitah, Ph.D., said in a press release:¹²

"In 2017, we published a study indicating that palmitic acid correlates with increased risk of metastasis, but we didn't know the mechanism responsible for this. In this study, we detail the process and reveal the involvement of a metastatic capacity "memory" factor and we point to a therapeutic approach to reverse it. This is promising."

He believes that using medication to block the process is a realistic approach, which "doesn't depend on whether a patient likes Nutella or pizza. Playing with diets is so complicated," he says.¹³

Far-Reaching Effect of the Palm Oil Industry

Greg Hannon, Ph.D., is director of the Cancer Research U.K. Cambridge Institute. He was not part of the study, but spoke with The Guardian about the potential implications of the data, saying:¹⁴

“This is a rigorous and comprehensive study that suggests that exposure to a major constituent of palm oil durably changes the behaviour of cancer cells, making them more prone to progress from local to potentially lethal metastatic disease. Given the prevalence of palm oil as an ingredient in processed foods, this study provides strong motivation for further study on how dietary choices influence the risk of tumour progression.”

One paper published in 2019 in the Bulletin of the World Health Organization¹⁵ looked at the large-scale industrial use of pal palm oil in food processing, which they acknowledge as “one of the world’s most commonly used vegetable oils.”¹⁶ The researchers found a mutually profitable relationship between agriculture and the processed food industry.

The review also showed the detrimental practices in the industry that are linked to environmental and human health damage. They believe their analysis demonstrated there were parallels between the practices in the palm oil and vegetable oil industries and the actions adopted by the tobacco and alcohol industries.¹⁷

Palm oil is found in roughly half of frequently consumed foods and consumer products such as cosmetics. Production has risen from 15 million tons in 1995 to 66 million tons in 2017. The rise in production is related to the clear advantages the oil has in the processed food industry, including a high smoke point and being semi-solid at room temperature.

One meta-analysis¹⁸ pulling data from across 23 countries demonstrated that with an increased use of palm oil there was a significantly higher mortality rate from ischemic heart disease in the population. Another review¹⁹ demonstrated populations with high palm oil consumption had higher levels of atherogenic low density lipoprotein cholesterol.

Across the world, oil-palm plantations cover an area totaling approximately the size of New Zealand. Experts estimate the industry in 2019 was worth \$60 billion and directly employed 6 million people.²⁰ The industry is expected to reach a value of \$88 billion by 2022.

In the meta-analysis, writers did a rapid review of the literature in 2018. They identified 40 review and research articles published from 2002 to 2018. From the literature, they found consistent environmental concerns linked to the industry, including biodiversity loss, greenhouse gas emissions, pollution and habitat fragmentation.

They also found mixed reports linking palm oil to health. However, four of the nine studies that demonstrated positive health associations were composed by the Malaysian Palm Oil board.

Not to mention the environmental damage the land-clearing practices for cultivation of palms has caused, they also have affected the health of people in Southeast Asia, leading to premature death, cardiovascular disease and respiratory illness from air pollution.²¹ A major concern of the air pollution resulting from land clearing practices is on child mortality and cognitive impairment.

Processed Vegetable Oils Raise Inflammation and Harm Health

It has become increasingly clear that one of the most damaging factors in the modern diet is processed vegetable oil. These oils contain excessive amounts of omega-6 linoleic acid (LA). This is a polyunsaturated fat (PUFA) that triggers damage even worse than that caused by refined sugar and high-fructose corn syrup, as it incites mitochondrial dysfunction that drives the disease process.^{22,23,24}

In this action, the resulting higher proportion of LA causes proinflammatory conditions that can lead to thrombus, atheroma, allergic reactions and inflammatory diseases.²⁵ However, the good news is that replacing these dangerous oils can go a long way toward boosting your health and reducing your risk of chronic disease.

Humans used to eat a diet with an omega-6 to omega-3 ratio of approximately 1-to-1.²⁶ Both fatty acids are essential to human health. However, in the current Western diet, that ratio is at least 16.7-to-1 or greater, with a deficiency of omega-3 fatty acids.

In those consuming a diet where the ratio is 4-to-1, there is an associated 70% decrease in mortality.²⁷ In addition to understanding the dangers associated with consuming higher levels of omega 6, it's important to remember that the LA²⁸ and palmitic acid²⁹ found in processed foods and seed oil degrade when heated.

It is the missing hydrogen atoms³⁰ that make PUFAs highly susceptible to oxidation. This means the fat breaks down into harmful metabolites called OXLAMS (oxidized LA metabolites). These have a profoundly negative impact on human health.³¹ While excess sugar is certainly bad for your health and should be limited to 25 grams per day or less, it doesn't oxidize like LA does, so it's nowhere near as damaging.

If you think the answer is to just consume more omega 3s, I have found it's nearly impossible to correct the imbalance of omega-6 to omega 3 by simply consuming more omega-3 fat. In an interview with Tucker Goodrich,³² we discuss the damage omega-6 triggers in the body.

While it is important to increase your intake of omega-3, it is crucial that you also eliminate vegetable oils and processed foods that are loaded with omega-6 PUFA. Even foods we generally think of as healthy, such as olive oil and chicken (fed LA rich grains) are high in omega-6 fat. Goodrich explains:³³

"The ratio is not really what's important. What's important is avoiding the omega-6 fats. There are disease models, like age-related macular degeneration (AMD), where that's starting to be clearly understood, and you can find papers saying explicitly that the important intervention that prevents AMD from progressing is reduction of omega-6 fats, and you can't prevent it by increasing your omega-3 fats.

I've got papers that show, in animal models, very nasty outcomes, such as liver failure, with a lower omega-6 to omega-3 ratio, but high absolute levels of both fats still allows pathology to progress."

Diet and Cancer Are Inextricably Linked

Helen Rippon, Ph.D., is chief executive of Worldwide Cancer Research, one of the featured study's funding sources³⁴ and a charity that funds "visionary, pioneering researchers to develop groundbreaking treatments that will help end cancer."³⁵ She spoke with The Guardian about the results of the research demonstrating the effect palmitic acid has on cancer metastasis, saying:³⁶

"This discovery is a huge breakthrough in our understanding of how diet and cancer are linked and, perhaps more importantly, how we can use this knowledge to start new cures for cancer. Metastasis is estimated to be responsible for 90% of all cancer deaths – that's around 9 million deaths a year globally. Learning more about what makes cancer spread and – importantly – how to stop it is the way forward to reduce these numbers."

Thomas Seyfried, Ph.D., has long been a proponent of classifying cancer as a metabolic disease that is a result of following a poor diet. Seyfried also has been one of the pioneers in the application of nutritional ketosis for cancer therapy.³⁷

This stems from the work of Dr. Otto Warburg, who was undoubtedly one of the most brilliant biochemists of the 20th century and who received the Nobel Prize for Physiology or Medicine in 1931 for the discovery of metabolism of metal malignant cells.³⁸ Seyfried has followed in these giant scientific footsteps, conducting important research to advance the science and shedding light on the metabolic underpinnings of cancer.^{39,40,41}

His book, "Cancer as a Metabolic Disease,"⁴² has made important contributions to the field of study. By setting aside the traditionally held view or dogma that cancer is a genetic disease, Seyfried discovered how defective cellular energy metabolism in the mitochondria contributes in large part to the development and progression of cancer.

Together with further research into the dangers associated with seed oils and palmitic acid, science is moving closer to understanding the development and metastasis of cancer cells. This has offered strong evidence of the lifestyle choices that may reduce

your risk of cancer and may contribute to developing choices that can successfully treat the disease.

Sources and References

- ^{1, 9, 11} [Nature, 2021; doi.org/10.1038/s41586-021-04075-0](#)
- ² [Gastroenterology 2020 Sep; 159\(3\): 1015–1018.e4](#)
- ³ [Gastroenterology 2020 Sep; 159\(3\): 1015–1018.e4 Figure 1 F & G](#)
- ⁴ [Nature, 2021; doi.org/10.1038/s41586-021-04075-0 line 1](#)
- ^{5, 12, 34} [EurekAlert! November 10, 2021](#)
- ^{6, 8} [EurekAlert! November 10, 2021, para 4](#)
- ⁷ [Irish Times, November 11, 2021, para 10](#)
- ¹⁰ [Science Direct 2015](#)
- ^{13, 14, 36} [The Guardian, November 10, 2021](#)
- ^{15, 16, 17, 20} [Bulletin of the World Health Organization, 2019;97\(2\)](#)
- ¹⁸ [Globalization and Health, 2011;7\(45\)](#)
- ¹⁹ [The Journal of Nutrition, 2015;145\(7\)](#)
- ²¹ [Bulletin of the World Health Organization, 2019;97\(2\) Drivers para 1](#)
- ²² [Scientific American, April 19, 2017](#)
- ²³ [Arteriosclerosis, Thrombosis, and Vascular Biology, 2004;24\(3\)](#)
- ^{24, 25} [Journal of Lipids, 2021; 8848161](#)
- ^{26, 27} [Biomedicine and Pharmacotherapy, 2002;56\(8\)](#)
- ²⁸ [Procedia Engineering, 2015;100](#)
- ²⁹ [Food Chemistry, 2017;234](#)
- ³⁰ [UC Davis DRINC, Trans Fatty Acids](#)
- ³¹ [Prostaglandins, Leukotrienes, and Essential Fatty Acids, 2012;87\(4-5\)](#)
- ³² [Bitchute, December 11, 2020](#)
- ³³ [Bitchute, December 11, 2020, Minute 17:40](#)
- ³⁵ [Worldwide Cancer Research](#)
- ³⁷ [YouTube, September 22, 2020](#)
- ³⁸ [Nobel Prize, Otto Warburg](#)
- ³⁹ [Communications Biology, 2019;200\(2\)](#)
- ⁴⁰ [Frontiers in Nutrition, 2020; doi.org/10.3389/fnut.2020.00021](#)
- ⁴¹ [Frontiers in Cell and Developmental Biology, 2015; doi.org/10.3389/fcell.2015.00043](#)
- ⁴² [Carcinogenesis 2014 Mar; 35\(3\): 515–527](#)