

CANCER DECODED

Lemons

Lemons & Cancer – CancerDecoded.net

This is free guide from CancerDecoded.net. For a free Mini Course on Foods and Cancer including three powerful foods that can help you fight cancer, please visit CancerDecoded.net

Lemons

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Introduction

To understand how nutrition impacts your fight, you need to understand the roles that food and nutrition play in your fight against cancer.

Food forms the building blocks of the body. You need to understand the role of the various building blocks so you can include all of the building blocks you need to build a healthy new body.

Food also plays a medical role. Hippocrates said, “Let food be thy medicine and medicine thy food.” This was never truer than in the fight against cancer. There are foods that can be powerful allies in the fight against the cancer itself as well as the

factors that cause cancer. Foods are also powerful fighters against the side effects and symptoms you experience because of the cancer and the treatments for the disease.

To apply the knowledge in this section, you don't need to become a nutritionist. In fact it is good to work with a nutritionist to help you make sure you are getting the building blocks you need, but that is not essential. This guide will teach you about what you need to make sure is included in your diet, both from a dietary point of view, as well as from the point of view of fighting cancer and the symptoms of cancer. So let's get started.

Foods as Building Blocks of the Body

If you've ever built a house or know how a house is built, you will know you need bricks and cement and you will also need some chemicals in the cement to make sure it's a good, solid house.

The body is no different. Nutrition provides the bricks, mortar and other chemicals – like vitamins and minerals – to build a solid, healthy body.

The essential building blocks of the body are proteins, fats and carbohydrates. So you need a healthy diet with a good balance of proteins, fats and carbohydrates. The Cancer Decoded Guide has more information on these building blocks and what they do and how much of each you need for a healthy diet, but for the free guide, we can't include all of the information – there is just too much information. So for the free guide – just make sure you get a healthy balanced diet of proteins, fats and some limited carbs and also make sure you take a really good multi-vitamin to provide your body with the vitamins it needs.

Food as Medicine

As mentioned above, food has two vital functions in terms of helping you fight cancer. Food provides the building blocks you need to replace all the cancer cells with new healthy cells.

But food is also an important ally in actually helping you to fight the disease itself. Here are some of the functions that food can help you with:

- Food can help you kill the cancer cells.
- Food can help you create or eliminate the inflammation that goes along with cancer.
- Food can help you boost the immune system to help you fight the disease.
- Food can help you keep the body clean by supporting detoxification of the body.
- Food can help you regulate blood sugar levels or foods can cause insulin spikes, which help the cancer to grow and spread.

- Food can help you create an alkaline pH in the body that stops cancer or foods can create an acidic environment in the body, which causes cancer to grow and spread.
- Food can help you improve your sleep and thus improve your chances of fighting the disease.
- Food can help you reduce the side effects of the treatments for cancer, which in turn will help you keep a positive mental attitude and a positive mental attitude gives you so much more chance of beating the disease.

A Quick Note about Food as Medicine

Modern drugs all have their roots and their start as the foods that we eat. Every drug on the market today comes from some ingredient that was extracted from the foods, herbs and plants that we eat. But our drugs are highly concentrated versions of those foods. Our drugs may even be new compounds that are based on those foods.

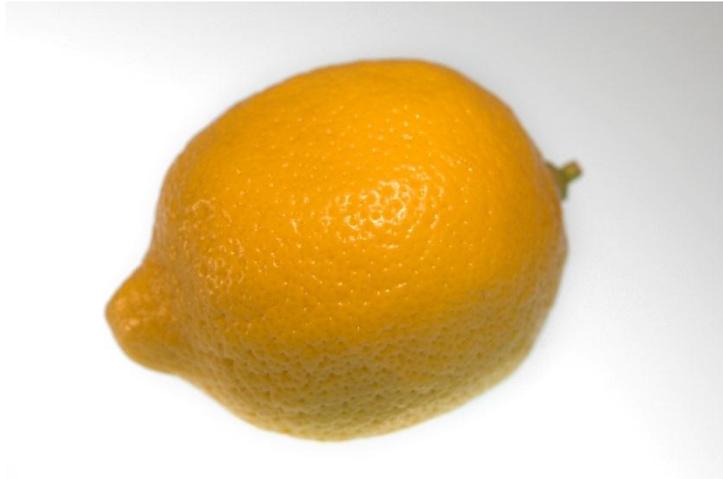
The important thing to realize is that, unlike drugs, foods don't always have an immediate result on the body. When you have a headache for example, and you take a headache pill, the drug normally acts within an hour or two. If you had taken a herb, it may not work in an hour or two but it, depending on the herb or food, stops you from having headaches in the future. That is only if you continue to include these foods/herbs in your diet over long periods.

In other words, foods and herbs are powerful helpers in removing the causes and not just treating the symptoms for an hour or two. There are some exceptions to this rule. Ginger for instance has an almost immediate impact on nausea and will take away nausea really quickly. However, the foods you add to your lifetime cancer plan will be foods you add for the rest of time because they are foods that will build a healthy body and then then will continue to ensure you remain healthy.

This guide contains excerpts from CancerDecoded.net. Sign up for the free mini course which includes Turmeric, Lemon and Cruciferous Vegetables.

Lemons

Lemons are one of those citrus fruits we tend to forget about but they are powerful additions to the diet and they make some dishes taste fantastic too. You may have seen the articles on the internet about lemons being the new cancer cure and being 10 000 times stronger than chemo, and while this is clearly not true, there are some amazing benefits that lemons offer the cancer patient and there is truth to the fact that lemons kill cancer cells too.



So what do lemons offer you in terms of health and medicinal benefits? By now you know the keys to cancer include fighting inflammation, boosting the immune system, alkalizing the body to neutralize pH and killing the cancer cells.

Lemons contain chemicals that fight inflammation. They contain chemicals that alkalize the body. They support the liver in detox. They cleanse the colon. They destroy intestinal worms. They contain a ton of vitamin C to support the immune system.

Lemons and Inflammation

Inflammation is a direct cause of cancer. Inflammation actually creates the environment for cancer to start by creating toxins within an area in the body. These toxins can damage DNA and create pre-cancerous cells that can grow into cancer. So inflammation is a vital key to fighting cancer now and eliminating cancer in future.

Lemons are well studied and well known for their anti-inflammatory properties. The limonoids in lemons are both powerful anti-oxidants and powerful anti-inflammatories which is why it's a good idea to start with warm lemon tea or warm lemon water first thing in the morning. There is also research to suggest that compounds in lemon last for hours in the body when taken with green tea.

Here are some studies and links on lemon and inflammation:

- **Lemon protects the liver from toxicity and inflammation in a lab study -** Hepatoprotective effect of limonin, a natural limonoid from the seed of *Citrus aurantium* var. *bigaradia*, on D-galactosamine-induced liver injury in rats. Limonin exerts protective effects on liver toxicity associated with inflammation

and tissue injury via attenuation of inflammation and reduction of oxidative stress.¹

- **Lemon regulated inflammatory chemicals in a lab study** - Amelioration of autoimmune arthritis by naringin through modulation of T regulatory cells and Th1/Th2 cytokines. the naringin-induced inhibition of the T cells, various pro-inflammatory cytokines and inflammatory mediators that facilitate cellular infiltration into the joints might have contributed to its anti-arthritis activity. Our data suggest that naringin diminished the AIA in mice and it could be a potential alternative/adjunct treatment for RA.²
- **Lemon reduced liver inflammation in rats** - Naringenin attenuates CCl4 -induced hepatic inflammation by the activation of an Nrf2-mediated pathway in rats. Together, the results suggest that naringenin can protect the liver against oxidative stress, presumably by activating the nuclear translocation of Nrf2 as well as attenuating the TNF- α pathway to elicit an anti-inflammatory response in liver tissue.³
- **Review of lemons and their anti-inflammatory effects** - Effect of Citrus Flavonoids, Naringin and Naringenin, on Metabolic Syndrome and Their Mechanisms of Action. This review aims to explore the biologic activities of these compounds, particularly on lipid metabolism in obesity, oxidative stress, and inflammation in context of metabolic syndrome.⁴

Lemons and Detox

Toxic build-up within the body is another direct cause of cancer. Toxins damage DNA which can create pre-cancerous cells or an environment that is perfect for cancer to grow and thrive. Toxins are also responsible for most of the symptoms you experience as a cancer patient – the pain, swelling, nausea and fatigue can all be exacerbated by the toxins within the body. This is why detox is vital for all cancer patients.

Lemons play a huge role in helping the body to detoxify. Lemons aid digestion and help to cleanse the colon which is essential for the detoxification process. Lemons also encourage the liver to produce phase I and phase II enzymes which supports the liver in removing toxins from the body. And lemons protect the liver – so the liver can function properly.

Here are some the studies on how lemon aids detoxification:

¹ <http://www.ncbi.nlm.nih.gov/pubmed/24258286>

² <http://www.ncbi.nlm.nih.gov/pubmed/24487035>

³ <http://www.ncbi.nlm.nih.gov/pubmed/24684352>

⁴ <http://www.ncbi.nlm.nih.gov/pubmed/25022990>

- **Lemon protects the liver in a study on rats** - Hepatoprotective effect of limonin, a natural limonoid from the seed of *Citrus aurantium* var. *bigaradia*, on D-galactosamine-induced liver injury in rats. Limonin exerts protective effects on liver toxicity associated with inflammation and tissue injury via attenuation of inflammation and reduction of oxidative stress.⁵
- **In a lab study lemons stimulated digestion and prolonged the effects of green tea** - A study found that citrus juices enable more of green tea's unique antioxidants to remain after simulated digestion, making the pairing even healthier than previously thought.⁶
- **Lemons kill bacteria and help to cleanse the colon** - Part of sluggish bowels is often due to an overgrowth of bacteria or *Candida albicans* that produce toxic metabolites that slow down your colon. D-Limonene is designed by plants to kill pathogens. It has antibacterial and anti-fungal properties.⁷
- **Lemons encourage the liver to produce phase I and phase II enzymes to help with toxin removal** - D-Limonene activates several of the Phase I and Phase II liver detox enzymes responsible for clearing toxins.⁸

Lemons and Cancer

Lemons have amazing power to fight cancer and to inhibit the spread of cancer cells. Although not a cure on its own, lemon offers huge benefits as part of a cancer fighting diet due to its anti-inflammatory, digestive and detoxification effects, along with killing cancer cells and stopping the spread of cancer.

Here are some of the studies relating to lemons and their anti-cancer effects:

- **Lemons stopped breast cancer from multiplying in a lab study** - Limonoids and their anti-proliferative and anti-aromatase properties in human breast cancer cells. Among the tested limonoids, 11 limonoids exhibited cytotoxicity on MCF-7 whereas 8 limonoids showed cytotoxicity against the MDA-MB-231 cell lines. Although most of the limonoids showed anti-aromatase activity, the inhibition of proliferation was not related to the anti-aromatase activity. On the other hand, the anti-proliferative activity was significantly correlated with caspase-7 activation by limonoids. Our findings indicated that the citrus limonoids may have potential for the prevention of estrogen-responsive breast cancer (MCF-7) via caspase-7 dependent pathways.⁹

⁵ <http://www.ncbi.nlm.nih.gov/pubmed/24258286>

⁶ <http://www.purdue.edu/uns/x/2007b/071113FerruzziTea.html>

⁷ http://www.wellnessresources.com/health/articles/d-limonene_help_for_digestion_metabolism_detoxification_anxiety_breast_canc/

⁸ http://www.wellnessresources.com/health/articles/d-limonene_help_for_digestion_metabolism_detoxification_anxiety_breast_canc/

⁹ <http://www.ncbi.nlm.nih.gov/pubmed/23117440>

- **Lemons stopped the multiplication of and killed colon cancer cells in a lab study** - Citrus limonoids and curcumin additively inhibit human colon cancer cells. In the current study, we examined the ability of limonoids, including limonin, limonin glucoside (LG) and curcumin, to inhibit proliferation of human colon cancer (SW480) cells. Additionally, we studied the effect of combining these two classes of natural compounds on inhibition of proliferation and the possible mode of cytotoxicity. For the first time, this study provides compelling evidence of the pharmacodynamic additive effect of limonoids and curcumin in inhibiting human colon cancer cells. The above results were also confirmed by fluorescence microscopy of SW480 cells treated with limonoids, curcumin and combination, after tagging with fluorescent probes. These results suggest that consumption of curcumin and limonoids together may offer greater protection against colon cancer.¹⁰
- **Lemons killed pancreatic cancer cells in a lab study** - Flavonoid apigenin modified gene expression associated with inflammation and cancer and induced apoptosis in human pancreatic cancer cells through inhibition of GSK-3 β /NF- κ B signaling cascade. The objective was to examine the inhibitory effects of citrus fruit bioactive compounds on BxPC-3 and PANC-1 human pancreatic cancer cells, focusing on the antiproliferative mechanism of action of the flavonoid apigenin related to the glycogen synthase kinase-3 β /nuclear factor kappa B signaling pathway. Apigenin highly upregulated the expression of cytokine genes IL17F (114.2-fold), LTA (33.1-fold), IL17C (23.2-fold), IL17A (11.3-fold), and IFNB1 (8.9-fold) in BxPC-3 cells, which potentially contributed to the anticancer properties. Flavonoids have a protective role in pancreatic cancer tumorigenesis.¹¹
- **Lemon killed leukemia lung, breast and stomach cancer cells in a lab study** - Three New and Other Limonoids from the Hexane Extract of Melia azedarach Fruits and Their Cytotoxic Activities. A defatted fraction obtained from the hexane extract of the fruits of Melia azedarach L. (chinaberry tree; Meliaceae) exhibited cytotoxic activities against leukemia (HL60), lung (A549), stomach (AZ521), and breast (SK-BR-3) cancer cell lines with IC50 values in the range of 2.9-21.9 μ g/ml.¹²
- **Lemon killed breast cancer cells in a lab study** - Obacunone exhibits anti-proliferative and anti-aromatase activity in vitro by inhibiting the p38 MAPK signaling pathway in MCF-7 human breast adenocarcinoma cells. This study demonstrated that obacunone may have the potential to prevent estrogen-

¹⁰ <http://www.ncbi.nlm.nih.gov/pubmed/23584140>

¹¹ <http://www.ncbi.nlm.nih.gov/pubmed/23943362>

¹² <http://www.ncbi.nlm.nih.gov/pubmed/25044585>

- responsive breast cancer through inhibition of the aromatase enzyme and inflammatory pathways, as well as activation of apoptosis.¹³
- **Lemon reduced bladder cancer risk in a lab study** - Citrus fruit intake and bladder cancer risk: a meta-analysis of observational studies. Our results suggest that citrus fruit intake is related to decreased bladder cancer risk. Subsequent well-designed, large prospective studies are needed to obtain better understanding of this relationship.¹⁴
 - **Lemon stopped chondrosarcome from spreading in a lab study** - Naringin suppress chondrosarcoma migration through inhibition vascular adhesion molecule-1 expression by modulating miR-126. Therefore, naringin inhibits migration and invasion of human chondrosarcoma via down-regulation of VCAM-1 by increasing miR-126. Thus, naringin may be a novel anti-migration agent for the treatment of migration in chondrosarcoma.¹⁵
 - **Lemon killed liver cancer cells in a lab study** - Hesperidin Induces Paraptosis Like Cell Death in Hepatoblastoma, HepG2 Cells: Involvement of ERK1/2 MAPK. Thus our finding suggests that hesperidin inducing paraptosis may offer an alternative tool in human liver carcinoma therapy.¹⁶
 - **Lemon stopped the spread of bladder cancer cells in a lab study** - Naringenin inhibits migration of bladder cancer cells through downregulation of AKT and MMP-2. In conclusion, the findings of the present study show that naringenin is capable of inhibiting bladder cancer cell migration through the downregulation of the AKT and MMP-2 pathways.¹⁷

Warning and Side Effects

There are no warning or side effects listed for adding lemon juice to tea or water, or the consumption of lemon as part of a natural diet.

¹³ <http://www.ncbi.nlm.nih.gov/pubmed/24927687>

¹⁴ <http://www.ncbi.nlm.nih.gov/pubmed/24932663>

¹⁵ <http://www.ncbi.nlm.nih.gov/pubmed/24975661>

¹⁶ <http://www.ncbi.nlm.nih.gov/pubmed/24977707>

¹⁷ <http://www.ncbi.nlm.nih.gov/pubmed/25017119>