

Cancer Prevention & Risk: What the Evidence Says

What actually raises or lowers cancer risk — alcohol, weight, sun exposure, HPV vaccination — separated from the claims that don't hold up.

8 chapters · assembled from our reviewed articles · last assembled 2026-09-13

Educational information, not medical advice. Not a substitute for your own care team.

WHAT'S INSIDE

1	Cancer Prevention: An Overview	Chapter 1
2	Can Cancer Always Be Prevented?	Chapter 2
3	Alcohol and Cancer Risk: Ethanol and Acetaldehyde	Chapter 3
4	Obesity and Cancer: A Link to 13 Cancers	Chapter 4
5	Sun Safety: Simple Ways to Protect Your Skin	Chapter 5
6	The HPV Vaccine: Preventing Cancer Before It Starts	Chapter 6
7	Fruits, vegetables and cancer risk: how strong is the evidence?	Chapter 7
8	Cancer-Prevention Claims: Evidence, Uncertainty, or Myth?	Chapter 8

Cancer prevention advice is everywhere, and a lot of it oversimplifies or overstates what the evidence actually supports. This guide sticks to what's well established — the effects of alcohol, excess weight, UV exposure, and HPV vaccination on cancer risk — and is honest about the limits: no combination of habits eliminates cancer risk, and a diagnosis is never a sign someone did something wrong. It ends with a direct look at prevention claims that circulate widely but don't hold up to scrutiny.

CHAPTER 1

Cancer Prevention: An Overview

7 min read · last reviewed 2026-08-05

Cancer prevention is action taken to lower the chance of getting cancer. Some risk factors, like smoking, can be avoided, while others, like inheriting certain genes, cannot. Ways to help prevent cancer include avoiding known causes, healthy lifestyle changes, finding precancerous conditions early, and, for some people, medicines or surgery.

KEY TAKEAWAYS

- Cancer prevention is action taken to lower the chance of getting cancer.
- Cancer forms through a process called carcinogenesis, when changes in genes let cells grow out of control.
- Some risk factors can be avoided, such as smoking; others cannot, such as inheriting certain genes.
- Known causes of cancer include tobacco use, certain infections, radiation, and immunosuppressive medicines.
- Some medicines and surgeries can lower cancer risk in people at high risk.
- Vitamin and dietary supplements have not been shown to prevent cancer.

Read the full article: cancerexplained.org/prevention/cancer-prevention-overview

CHAPTER 2

Can Cancer Always Be Prevented?

8 min read · last reviewed 2026-08-18

WHO estimates that about 37% of new cancer cases worldwide in 2022 were linked to preventable causes, but random cellular mutations mean cancer cannot always be prevented. Understanding this eliminates misplaced guilt.

KEY TAKEAWAYS

- WHO links about 37% of new cancer cases worldwide in 2022 to preventable causes, tobacco being the largest single one.
- The rest cannot be prevented, because random copying errors occur among billions of daily DNA replications.
- Someone who does everything right can still develop cancer, so guilt after a diagnosis is misplaced.

Read the full article: cancerexplained.org/prevention/can-cancer-always-be-prevented

CHAPTER 3

Alcohol and Cancer Risk: Ethanol and Acetaldehyde

8 min read · last reviewed 2026-08-11

Alcohol is a classified Group 1 carcinogen linked to seven cancer types, including breast, colorectal, esophageal, and liver cancers.

KEY TAKEAWAYS

- Alcohol is classified as a Group 1 carcinogen and is linked to seven different cancer types.
- Those types include breast, colorectal, esophageal and liver cancer.
- Breaking alcohol down produces acetaldehyde, a toxin that damages DNA and stops cells repairing that damage.

Read the full article: cancerexplained.org/prevention/alcohol-and-cancer-risk

CHAPTER 4

Obesity and Cancer: A Link to 13 Cancers

7 min read · last reviewed 2026-07-04

Having overweight or obesity raises the risk of at least 13 types of cancer. Extra body fat can change hormones, insulin levels, and inflammation in ways that may help cancer grow. Reaching and keeping a healthy weight may lower risk, and any step toward a healthier weight can help.

KEY TAKEAWAYS

- Overweight and obesity are linked to at least 13 types of cancer.
- The links are strongest for cancers of the uterus (endometrium) and esophagus.
- Extra body fat can raise hormone and insulin levels and cause inflammation, which may help cancer grow.
- Losing weight may lower the risk of some cancers, though more research is still being done.
- Body mass index (BMI) is a common measure of body fat, but it is only one part of the picture.

Read the full article: cancerexplained.org/prevention/obesity-and-cancer

CHAPTER 5

Sun Safety: Simple Ways to Protect Your Skin

7 min read · last reviewed 2026-07-04

Most of the sun's damage to skin comes from ultraviolet (UV) rays. You can lower that exposure with shade, clothing, a hat, sunglasses, and sunscreen, and by avoiding the strongest midday sun. Protecting children matters because sunburns early in life raise skin cancer risk later.

KEY TAKEAWAYS

- UV rays from the sun are the main preventable cause of skin cancer.
- Shade, clothing, a wide-brimmed hat, and sunglasses are your first line of protection.
- The sun is usually strongest between about 10 a.m. and 4 p.m.
- Sunscreen adds protection but works best alongside shade and clothing, not instead of them.
- People of every skin color can get skin cancer and benefit from sun protection.
- Protecting children is especially important, since early sunburns raise later risk.

Read the full article: cancerexplained.org/prevention/sun-safety

CHAPTER 6

The HPV Vaccine: Preventing Cancer Before It Starts

8 min read · last reviewed 2026-07-04

The HPV vaccine protects against the human papillomavirus types that cause most cervical cancers and several other cancers. It is routinely recommended at ages 11 to 12 and through age 26, with a shared decision for some adults 27 to 45. It has a strong safety record.

KEY TAKEAWAYS

- The HPV vaccine protects against HPV types that cause most cervical and several other cancers.
- It is routinely recommended for children at age 11 or 12 and can start at age 9.
- Catch-up vaccination is recommended through age 26 for those not vaccinated earlier.
- Some adults 27 to 45 may benefit after a shared decision with their provider.
- The vaccine has a strong safety record after more than two decades of monitoring.

Read the full article: cancerexplained.org/prevention/hpv-vaccine

CHAPTER 7

Fruits, vegetables and cancer risk: how strong is the evidence?

5 min read · last reviewed 2026-08-17

The five-a-day message is good general nutrition advice, but the cancer evidence behind it is weaker than most people assume. NCI's prevention summary states it is not known whether a diet low in fat and high in fiber, fruits and vegetables lowers colorectal cancer risk. NCI places diet among factors that may affect risk rather than among known causes.

KEY TAKEAWAYS

- NCI says it is not known if a diet low in fat and high in fiber, fruits and vegetables lowers colorectal cancer risk.
- NCI explains that diet is hard to study because a person's diet contains foods that may protect and foods that may raise risk.
- Diet appears on NCI's list of factors that may affect cancer risk, not on its list of known causes.
- NCI's list of known risk factors includes tobacco, certain infections, radiation and immunosuppressive medicines.
- Some studies link a diet high in fat, protein, calories and red meat to colorectal cancer, and other studies do not.
- Weak cancer-prevention evidence is not a reason to stop eating vegetables. Federal dietary guidance still recommends a variety of vegetables every day.

Read the full article: cancerexplained.org/prevention/5-a-day-fruit-vegetable-cancer-prevention

CHAPTER 8

Cancer-Prevention Claims: Evidence, Uncertainty, or Myth?

9 min read · last reviewed 2026-08-13

Evaluating online cancer prevention claims requires separating biological plausibility in a lab dish from verified human clinical trials. Learn how to identify red flags and make safe choices.

KEY TAKEAWAYS

- Laboratory dish or animal cell studies do not automatically equal proven human benefits.
- No single food, diet, or supplement can 'guarantee' cancer prevention or replace medical care.
- Proven risk-reduction habits (tobacco cessation, UV protection, exercise, vaccines, screening) carry the strongest evidence base.
- High-dose supplements can interact dangerously with active chemotherapy, radiation, or prescription medications.
- Always discuss new diets or supplements with your care team before starting them.

Read the full article: cancerexplained.org/claim-check/cancer-prevention-claims-evidence-uncertainty-or-myth

SOURCES & WHERE TO READ MORE

None of this is a guarantee, in either direction — people who do everything 'right' still get cancer, and people who don't often never do. The value of this evidence is in shifting the odds, not controlling the outcome, and it's worth discussing your own risk factors with a doctor rather than trying to interpret population-level evidence as personal advice.

FULL SOURCE LIST

1. Cancer Prevention: An Overview — cancerexplained.org/prevention/cancer-prevention-overview (last reviewed 2026-08-05)
2. Can Cancer Always Be Prevented? — cancerexplained.org/prevention/can-cancer-always-be-prevented (last reviewed 2026-08-18)
3. Alcohol and Cancer Risk: Ethanol and Acetaldehyde — cancerexplained.org/prevention/alcohol-and-cancer-risk (last reviewed 2026-08-11)
4. Obesity and Cancer: A Link to 13 Cancers — cancerexplained.org/prevention/obesity-and-cancer (last reviewed 2026-07-04)
5. Sun Safety: Simple Ways to Protect Your Skin — cancerexplained.org/prevention/sun-safety (last reviewed 2026-07-04)
6. The HPV Vaccine: Preventing Cancer Before It Starts — cancerexplained.org/prevention/hpv-vaccine (last reviewed 2026-07-04)
7. Fruits, vegetables and cancer risk: how strong is the evidence? — cancerexplained.org/prevention/5-a-day-fruit-vegetable-cancer-prevention (last reviewed 2026-08-17)
8. Cancer-Prevention Claims: Evidence, Uncertainty, or Myth? — cancerexplained.org/claim-check/cancer-prevention-claims-evidence-uncertainty-or-myth (last reviewed 2026-08-13)

This guide is educational information assembled from cancerexplained.org's reviewed articles. It is not medical advice and does not replace care from a qualified health professional. Bring any questions it raises to your own care team. Each article listed above carries its own review date; visit the linked page on cancerexplained.org for the current version and any updates made since this guide was assembled.