

TOMATO FOODS

and Lycopene

Should I eat tomato products or take lycopene supplements?

RECOMMENDATION: Include tomato products in your balanced diet - don't rely on taking lycopene supplements until more research is done.

What's the evidence?

For Prostate Cancer *Prevention*?

Tomato products and lycopene might prevent prostate cancer:

- Many studies have suggested that there is a small decrease in prostate cancer risk for men with the most tomato products and lycopene in their diets.¹

For Prostate Cancer *Treatment*?

Tomato products and lycopene might prevent progression or recurrence of prostate cancer:

- Lycopene might slow the growth of prostate cancer cells for men who have been diagnosed with prostate cancer
 - In the 'Health Professionals Follow-up Study', men diagnosed with prostate cancer who ate the most tomato products had a lowered risk for prostate cancer growth or return.¹
 - However, we don't know if this was from lycopene or other nutrients found in tomato foods.
- Other research has shown some benefits from eating tomato products or taking lycopene supplements, but the results are mixed.
 - A research review found that some studies showed lowered Prostate Specific Antigen (PSA) for some men after taking lycopene pills, while other studies showed no effects.²
 - Without enough proof, there are no recommendations for taking lycopene supplements.³

Much of this benefit is thought to be from lycopene found in tomato products

Lycopene facts:

- Lycopene is a carotenoid that gives the red colour to tomatoes, but is also found in other plant foods including papayas, pink grapefruits and watermelons.
- Lycopene acts as an antioxidant that protects against cancer and heart disease by destroying harmful 'free radicals' ('oxidants') in the body.
 - Although free radicals are natural, they can be destructive - damaging cells and causing cancer.
- Lycopene is just one of many healthy plant antioxidants so be sure to eat lots of different fruit and vegetables.
- Leafy green vegetables (spinach and broccoli) as well as deep orange fruits (apricots, cantaloupes) and vegetables (squash, sweet potatoes) are excellent sources of other disease-fighting carotenoids like beta-carotene and lutein.

Eating balanced diets that include lots of cooked tomato products rich in natural lycopene, might help prevent prostate cancer in healthy men and might also reduce cancer progression or recurrence for men already diagnosed with prostate cancer.



The bottom line: Eat food not supplements!

Mixed study results should not stop you from eating lycopene-rich foods, as they offer many additional nutrients important for overall health.

- For example, ½ cup of tomato sauce provides 2 grams of fibre, 3 milligrams (mg) of vitamin E, 17 mg of vitamin C and at only 48 calories per serving.
- If you decide to take lycopene supplements there is little information about possible side-effects, but large doses can cause bloating and gas.
 - 30mg per day is considered a safe amount with the most potential benefits.



Approximate lycopene content for various foods in milligrams (mg)

Food item (canned/processed)	Serving/amount		Lycopene content
Tomato puree	½ cup	125 ml	29 mg
Tomato paste	4 tbsp	60 ml	19 mg
Tomato sauce	½ cup	125 ml	18-25 mg
Spaghetti sauce	½ cup	125 ml	17 mg
Tomato soup	1 cup	250 ml	14-23 mg
Tomato juice	½ cup	125 ml	12 mg
Salsa	¼ cup	60 ml	7 mg
Tomatoes, stewed	½ cup	125 ml	5 mg
Tomato ketchup	1 tbsp	15 ml	3 mg
Chilli	¾ cup	175 ml	2-3 mg
Other foods			
Sundried tomatoes	¼ cup	60 ml	6 mg
Pizza with tomato sauce	1 slice	140 g	3-4 mg
Pink or red grapefruit	½ cup	125 ml	2 mg
Watermelon	½ cup	125 ml	4 mg

Health Canada, Canadian Nutrition File, 2010: www.healthcanada.gc.ca/cnf

Eat cooked tomato products! Add tomato paste to pasta dishes, stir-fries or fruit smoothies.

You can easily get the same amount of lycopene as in a supplement from eating cooked or canned tomato products.

- Most of our dietary lycopene comes from processed tomato products, adding up to about 8 mg per day of lycopene consumed by Canadian men.
- While raw tomatoes do contain lycopene (about 3 mg each), due to the plant structure, experts generally consider the available amount of this lycopene to be zero.
 - However, canning or cooking will break down tomato cell walls, releasing the lycopene, allowing it to be absorbed into our bodies.
 - But don't stop eating raw tomatoes based solely on lycopene content - they are still loaded with other vitamins, minerals and phytochemicals that also benefit your health.
- Tomato products require a little bit of fat for the lycopene to be absorbed.
 - No need to load your pasta dishes with cheese though; the little amount of fat that's needed can be provided by adding some olive oil, a small amount of meat, poultry or fish, or a sprinkling of cheese to your favourite recipes.

1. Chan J, et al. Diet after diagnosis and the risk of prostate cancer progression, recurrence, and death (United States). *Cancer Causes & Control*. 2006; 17:199-208
2. Haseen F et al. Is there a benefit from lycopene supplementation in men with prostate cancer? A systematic review. *Prostate Cancer & Prostatic Diseases*. 2009; 12:325-332
3. Kucuk O, et al. Effects of lycopene supplementation in patients with localized prostate cancer. *Experimental Biology & Medicine*. 2002; 227:881-885

This information is not meant to replace advice from your doctor or dietitian.



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