

Research Reports Link Between Higher Dietary Inflammatory Index and Prostate Enlargement

Analysis by [Dr. Joseph Mercola](#)

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STORY AT-A-GLANCE

- › Benign prostatic hyperplasia (BPH), a noncancerous enlargement of the prostate that causes urinary problems such as frequent urination and weak urine flow, now affects millions of men worldwide and continues to rise as populations age
- › Research published in *Frontiers* suggests diets that promote inflammation may be associated with a significantly higher risk of prostate enlargement, with each one-point increase in the dietary inflammation score linked to approximately 7% higher BPH risk in an observational study
- › The relationship between diet and prostate enlargement followed a clear pattern – the more inflammatory the diet, the greater the likelihood of developing BPH
- › In animal experiments, rats fed inflammatory diets developed larger prostates, elevated inflammatory signals, and structural tissue changes consistent with prostate overgrowth
- › Reducing inflammatory foods like seed oils, supporting gut health, and improving metabolic function may help address underlying biological factors associated with prostate enlargement

Benign prostatic hyperplasia (BPH), commonly known as enlarged prostate, affects millions of aging men and steadily interferes with everyday life. This condition means the prostate gland enlarges and presses against the urethra, the tube that carries urine out of your body. Once that narrowing begins, urination becomes difficult.

Common symptoms include frequent urination, urgency, waking repeatedly at night to urinate, weak urine flow, and a persistent feeling that your bladder never fully empties. When left untreated, the pressure can damage your bladder, increase infection risk, and strain your kidneys. Researchers have long known that inflammation, obesity, and metabolic syndrome contribute to prostate tissue growth.

But a key question remained – do the foods you eat every day actually drive that inflammatory process enough to change your prostate? A recent study combined population data, genetic analysis, and animal experiments to find out, and the results point clearly toward your plate as a major factor in whether your prostate stays healthy or begins to enlarge.¹

Inflammatory Diets Are Linked to Prostate Enlargement

A study published in the journal *Frontiers in Nutrition* examined whether diets that promote inflammation increase the risk of an **enlarged prostate**.² The researchers analyzed health data from a large U.S. survey called the National Health and Nutrition Examination Survey (NHANES), studied genetic data, and ran laboratory experiments in rats to see how different diets affect prostate tissue.

The results showed a clear pattern: men with higher scores – meaning more inflammatory diets – had a greater chance of having an enlarged prostate. Even after researchers accounted for factors such as age, body weight, smoking, alcohol use, and metabolic disease, the link stayed strong. In fact, every one-point increase in the inflammatory diet score was associated with approximately 7% higher BPH risk.

- **Risk increased steadily as diets became more inflammatory** – As dietary inflammation increased, the likelihood of prostate enlargement also increased. This dose-response pattern suggests the body may respond gradually to dietary inflammation rather than reaching a sudden tipping point.

The analysis showed that genetic markers associated with healthier dietary patterns were linked to a lower risk of BPH. Overall, these results indicated that healthier diets were associated with about a 20% lower risk of prostate enlargement.

Researchers also looked at whether factors like age, income, smoking, or health conditions changed the relationship between diet and prostate enlargement. The connection stayed similar across most groups. For example:

- Men with and without metabolic syndrome showed the same diet-related risk pattern.
 - Smokers and nonsmokers both showed higher BPH risk with inflammatory diets.
 - Men with heart disease or high blood pressure still showed the same trend. This suggests that inflammatory diets affect prostate health broadly rather than only affecting certain types of people.
- **Animal experiments confirmed that diet changes the prostate** – The researchers then tested the idea in a laboratory using rats. The animals were fed different diets for 12 weeks:
 - A normal, balanced diet
 - A pro-inflammatory diet high in fat and sugar
 - An anti-inflammatory diet designed to reduce inflammation

Rats eating the inflammatory diet developed noticeably larger prostates than those eating the other diets. Blood tests also showed that rats on inflammatory diets had much higher levels of inflammatory chemicals called cytokines. These included substances the immune system releases during inflammation.

Higher levels of these signals appeared both in the blood and inside prostate tissue. Researchers also saw increased levels of a marker that indicates rapid cell growth. When this marker rises in the prostate, it means the cells in the gland are multiplying faster than normal.

- **Inflammatory diets changed the structure of the prostate** – When researchers looked at the prostate tissue under a microscope, they saw clear physical changes in the animals eating inflammatory diets. The prostate glands showed abnormal layers of growing cells and distorted gland structures.

The tissue also contained excess collagen, which indicates thickening and scarring caused by chronic inflammation. Collagen is normally a healthy structural protein, but when too much accumulates inside organs, it forms stiff scar tissue that thickens and enlarges the gland. In contrast, rats eating the anti-inflammatory diet kept a normal prostate structure with very little tissue thickening.

- **Inflammatory diets set off a chain reaction inside the body** – The researchers noted that inflammatory diets are associated with increased oxidative stress – a buildup of harmful molecules called reactive oxygen species (ROS).

In animal models, these molecules were found to activate inflammatory pathways linked to growth signals in prostate tissue. This process appears to encourage fibroblasts – cells that produce connective tissue – to produce excess collagen, which has been linked to thickening and enlargement of the prostate.

Fibroblasts are repair cells that produce collagen, the structural protein in connective tissue. Normally, they help maintain healthy organs, but chronic inflammation may put them into overdrive, contributing to collagen accumulation linked to prostate stiffening.

- **Changes in gut bacteria also play a role** – The study also showed that inflammatory diets affect the [gut microbiome](#) – the community of bacteria living in your digestive system. Diets that promote inflammation were associated with lower levels of beneficial bacteria and higher levels of bacteria linked to disease.

These shifts weaken the intestinal barrier – sometimes called "leaky gut" – allowing bacterial toxins to slip into your bloodstream and trigger immune reactions far from your digestive tract. Once these toxins circulate through your body, they trigger inflammatory signals in many organs, including the prostate. This gut-driven inflammation forms a link between diet, whole-body inflammation, and prostate enlargement.

Note that these findings include data from laboratory or animal research and may not directly apply to human health.

Reduce Dietary Inflammation to Protect Your Prostate

Prostate enlargement doesn't appear overnight. It grows out of years of chronic inflammation, metabolic stress, and dietary patterns that constantly trigger immune signals inside your body. Inflammatory diets may contribute to prostate tissue growth, collagen buildup, and immune activation. When that cycle continues long enough, the prostate may expand and begin to press against the urethra.

That means the most powerful strategy focuses on removing the triggers that keep inflammation active. Lowering dietary inflammation, improving metabolic health, and supporting **cellular energy production** may help reduce conditions associated with prostate tissue overgrowth. If you already struggle with urinary symptoms, these steps help reduce the biological pressure driving that enlargement.

- 1. Remove inflammatory foods that drive chronic immune activation** – Your first move involves removing the foods that push your body into an inflammatory state.

Highly processed foods, seed oils, ultraprocessed snacks, and restaurant foods cooked in **vegetable oils** deliver large amounts of **linoleic acid** (LA), a polyunsaturated fat that disrupts mitochondrial energy production when consumed in excess. These fats accumulate in your tissues and trigger inflammatory signaling throughout your body.

Replace seed oils, including canola, corn, soybean, safflower, sunflower, and grapeseed oils, with stable fats such as grass fed butter, ghee, and tallow. If you frequently eat packaged snacks, granola bars, vegetable chips, or premade frozen meals, begin eliminating them because those products almost always contain inflammatory seed oils that worsen metabolic stress.

- 2. Increase carbohydrate intake to restore cellular energy production** – Your cells rely on carbohydrates to generate energy efficiently. When carbohydrate intake stays too low for long periods, your body enters **reductive stress**, a state where mitochondrial energy production slows – like an engine starved of the right octane – and inflammatory signaling increases.

Most adults perform best with 250 grams of carbohydrates per day, though highly active individuals often need more. Start with easily digested carbs like fruit and white rice, especially if your gut health is compromised. Then, gradually add in root vegetables, non-starchy vegetables, starchy vegetables like squash or sweet potatoes, beans and legumes, and finally minimally processed whole grains – only if your gut can handle them.

- 3. Support a healthy gut microbiome to reduce inflammatory toxins** – The research highlighted a powerful connection between the gut and the prostate. When your microbiome becomes imbalanced, harmful bacteria release endotoxins – toxic fragments from bacterial cell walls – that leak into circulation and trigger immune responses throughout your body, including inside the prostate. Improving gut health reduces those inflammatory signals.

Begin by prioritizing whole foods, gradually increasing fiber as your digestive system tolerates it, and avoiding ultraprocessed foods that damage your microbiome. Seed oils and ultraprocessed foods disrupt the thin protective layer inside your gut and increase oxidative stress. Your gut lining is made of tightly connected cells that act like a security wall.

When those connections loosen, bacterial toxins slip into your bloodstream and trigger inflammation throughout your body. Focus on giving your intestinal cells the energy they need to repair themselves by consuming easily digested carbohydrates. These foods provide glucose, which supports mitochondrial energy production inside gut cells and helps maintain the barrier that keeps harmful substances out of circulation.

Finally, support the bacteria that help maintain that barrier. Certain beneficial microbes produce compounds called short-chain fatty acids, including **butyrate**. Butyrate serves as the main fuel for the cells lining your colon and helps tighten the junctions between them.

As your digestion improves, slowly introducing small amounts of tolerable fiber encourages these bacteria to produce butyrate. That process may help strengthen your gut lining from the inside and reduce the inflammatory signals linked to prostate enlargement.

- 4. Build metabolic strength with daily movement and muscle maintenance** – Your metabolic health strongly influences inflammation and prostate disease risk. Regular movement improves mitochondrial function, increases insulin sensitivity, and supports energy production throughout the body.

Work your way up to one-hour daily walks and two resistance sessions per week to preserve muscle mass. Muscle is your body's largest metabolic organ – it pulls glucose out of your bloodstream, stabilizes blood sugar, and helps keep inflammatory signaling in check. If you spend long hours sitting during the day, break that pattern by standing, stretching, and walking regularly.

- 5. Prioritize high-quality protein and collagen to stabilize metabolism** – Your body relies on adequate protein intake to maintain muscle mass, regulate metabolism, and support tissue repair. Protein deficiency weakens metabolic resilience and worsens inflammatory signaling throughout the body.

Aim for 0.6 to 0.8 grams of protein per pound of ideal body weight (approximately 1.32 to 1.76 grams per kilogram) – and make one-third from [collagen-rich sources](#) like bone broth, slow-cooked meats with connective tissue, or a quality collagen supplement.

Unlike the excess collagen that inflammation forces into prostate tissue – causing stiffness and swelling – the collagen you eat is broken down into amino acids that your body uses to maintain healthy connective tissue wherever it's needed, without selectively building up in any one organ. This balance supports connective tissue health and helps maintain the metabolic stability that keeps inflammatory pathways under control.

FAQs About Prostate Enlargement and Inflammatory Diet

Q: What is BPH?

A: BPH is a noncancerous enlargement of the prostate gland. The prostate surrounds the urethra, the tube that carries urine out of your body. When the gland grows larger, it presses on the urethra and makes urination difficult. Common symptoms include frequent urination, weak urine flow, urgency, and waking at night to urinate.

Q: How does diet affect prostate enlargement?

A: Research suggests diets that promote inflammation are linked to an increased risk of prostate enlargement. Scientists measure this using the Dietary Inflammatory Index, which scores how strongly individual foods are associated with inflammatory markers in the body. Higher scores – meaning more inflammatory diets – are linked to greater risk of BPH.

Q: What did the study find about inflammatory diets and prostate health?

A: Researchers found that every increase in the inflammatory diet score was associated with a higher risk of prostate enlargement. Men who consumed more inflammatory foods had significantly higher odds of developing BPH. The relationship followed a steady pattern, meaning the risk increased as the diet became more inflammatory.

Q: What happens inside the body when diets trigger inflammation?

A: Inflammatory diets are associated with elevated immune signals and oxidative stress. In animal studies, these changes were linked to increased cell growth, excess collagen buildup, and tissue thickening inside the prostate. Over time, these processes may cause the gland to enlarge and interfere with normal urination.

Q: What lifestyle changes help lower the risk of prostate enlargement?

A: Helpful strategies focus on reducing chronic inflammation and improving metabolic health. This includes removing processed foods and seed oils, eating enough carbohydrates from whole foods such as fruit and cooked white rice, supporting gut health, and staying physically active to improve cellular energy production. These steps help reduce the inflammatory signals associated with prostate growth.

This article is for informational purposes only and does not constitute medical advice. Consult a qualified healthcare provider before making changes to your health regimen.

Sources and References

- [1, 2 Frontiers in Nutrition February 23, 2026](#)