



# Prevention

Prostate Cancer Awareness Month September 2025

## PROSTATE CANCER: INNOVATION IN DETECTION AND PREVENTION

### Note to Readers:

Innovation is essential for cancer prevention. New analytic, diagnostic, and treatment methods, including precision medicine and artificial intelligence, continue to transform early detection and risk reduction. Strang Cancer Prevention Institute, whose mission since 1933 has been to promote the cure of cancer through early detection and research, will continue to highlight important advances that improve patient outcomes and expand access to life-saving care.

### Summary:

Prostate cancer is the most common cancer among men after skin cancer and remains a leading cause of cancer death worldwide. Advances in genetic testing, imaging, artificial intelligence, and molecular testing help doctors detect prostate cancer earlier and more accurately, while reducing unnecessary biopsies and treatments. At the same time, prevention is becoming more personalized, guided by genetic risk factors, metabolic health, and markers of inflammation.

## PROSTATE CANCER: RECENT INNOVATION IN SCREENING:

### Genetic Risk Profiling

A 2025 study in *The New England Journal of Medicine* demonstrated how a person's genetic makeup can guide prostate cancer screening.<sup>1</sup> The BARCODE1 trial used a simple saliva test to measure a man's **polygenic risk score (PRS)**, which combines small DNA changes linked to prostate cancer. Men with higher scores were significantly more likely to develop aggressive disease. This approach could soon improve screening accuracy by using personal genetic risk along with age and family history to determine who should be tested and when.

### Liquid Biopsy: DNA Methylation and RNA Markers

Scientists are moving beyond traditional PSA blood tests to develop **liquid biopsies** that detect genetic and molecular traces of cancer in the bloodstream.<sup>2</sup> Recent studies highlight **cell-free DNA methylation patterns**, which are chemical changes to DNA that can signal early cancer activity. Other research shows that measuring **cell-free RNA** may reveal how a man's immune system and tumor cells interact, providing a fuller picture of disease risk and progression.<sup>3</sup> Together, these advances suggest that a simple blood test may soon help detect prostate cancer at its earliest stages, long before symptoms appear.

### Imaging Innovation Beyond MRI: PSMA-PET

A newer imaging method called **PSMA-PET/CT** is changing how doctors evaluate prostate cancer at diagnosis and recurrence.<sup>4</sup> This scan detects small cancer areas that ordinary CT or bone scans can miss, enabling earlier treatment and lowering the risk of undertreatment. Although not used for routine screening, PSMA-PET helps ensure men with prostate cancer get the right treatment at the proper stage of their disease.

## PROSTATE CANCER: RECENT INNOVATION IN PREVENTION:

### Targeted Chemoprevention

Scientists are exploring ways to prevent prostate cancer with safe, targeted medications. A recent study of a new oral compound, **MCS-8**, showed that it lowered the number of men who developed positive prostate biopsies or high-grade cancers compared to placebo.<sup>5</sup> The medication was well tolerated and did not affect hormone levels or sexual function. These findings suggest that chemoprevention could once again become a practical strategy for men at higher risk of prostate cancer.

# PROSTATE CANCER: INNOVATION IN DETECTION AND PREVENTION

## Inflammation and Metabolic Health

New research continues to link **chronic inflammation and metabolic health** with prostate cancer risk. Men with obesity, diabetes, or persistent inflammation are at higher risk of developing aggressive disease.<sup>6</sup> Current studies are examining whether anti-inflammatory medications, such as low-dose aspirin, and improvements in diet and physical activity can reduce this risk. Maintaining a healthy weight, exercising regularly, and eating a diet rich in fruits, vegetables, and whole grains remain the key elements of prevention.

## Precision Prevention Using Genetic and Molecular Risk

Advances in genetics and molecular testing are making prevention more personalized. Researchers are combining polygenic risk scores, blood biomarkers, and lifestyle data to identify men at higher risk years before diagnosis.<sup>7</sup> This approach could soon enable doctors to customize prevention strategies, such as earlier screening or targeted lifestyle interventions, for each person's biological profile. Precision prevention may help reduce both overtreatment and missed cases by directing efforts to where they are most needed.

### Editor:

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### REFERENCES:

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# The Strang Cancer Prevention Cookbook

## Reduce your Risk for Cancer by Eating a Healthy Diet!

### Tomato-Basil Sauce 4 Servings

2 pounds plum tomatoes (10-12)  
1 tablespoon olive oil  
2 garlic cloves, crushed  
1 small onion (about 1/4 pound), chopped  
½ cup fresh basil leaves cut into long strips  
Salt and freshly ground black pepper



Core the tomatoes and drop them into boiling water for 20 to 30 seconds. Slip off the skins and slice the tomatoes in half horizontally. Gently squeeze the halves over a bowl to squeeze out the seeds. Use your fingers to remove any remaining seeds. Discard the seeds, chop the tomatoes and reserve.

Heat the olive oil in a medium nonstick skillet over high heat. Add the crushed garlic and cook until lightly browned, then remove and discard. Add the onion to the skillet and cook over medium heat until soft, about 5 minutes, stirring often. Add the reserved tomatoes and bring to a simmer. Cook uncovered over medium heat, stirring occasionally for 30 minutes, until the sauce thickens. Stir in basil, season with salt and pepper, and simmer for 2 to 3 minutes.

Calories 93, protein 3g, carbs 14 g, fat 4 g, cholesterol 0 mg, dietary fiber 3 g, saturated fat 1 g

### MAJOR SOURCES OF POTENTIAL CANCER FIGHTERS

**Phytochemicals:** allium compounds, plant polyphenols (flavonoids, phenolic acids) plant sterols, phytic acids, terpenes, (carotenoids, monoterpenes)

Recipe by Laura Pensiero, R.D., **Strang** Nutrition Consultant  
Chef, Dietitian, Restaurateur, Author  
Owner, Gigi Hudson Valley Trattoria & Catering Rhinebeck, New York



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