

Could a high-fiber diet improve cancer immunotherapy performance?

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Credit: Foodie Factor from Pexels

It's no secret that a high-fiber diet is good for you—just ask Google. Lots of research suggests that eating a high-fiber diet can lower your risk for certain cancers, but less is known about whether fiber can also help

you fight a current cancer diagnosis.

Brendan Guercio, MD, assistant professor of Hematology/Oncology at UR Medicine's Wilmot Cancer Institute, is at the forefront of investigating whether a [high-fiber diet](#) can boost the effectiveness of cancer immunotherapies.

"Immunotherapy is often a pretty well-tolerated treatment," said Guercio. "And when it does work, it can help control cancer for a long time. But it doesn't work for everybody and we're not always good at predicting who it will work for."

Immunotherapies train the [immune system](#) to fight cancer, and the immune system is heavily influenced by the bacteria that live in the gut. Several previous studies show that gut bacteria influence how well patients respond to immunotherapy, and a study of patients with melanoma found that those who reported consuming more fiber responded better to immunotherapy.

"As you can imagine, the bacteria that live in our gut eat what we eat," said Guercio. "Feeding them the kinds of nutrients that they need to work well might have an effect on the immune system since they're interacting with the immune system."

As a [medical oncologist](#) who primarily treats cancers of the genitourinary tract, Guercio is particularly focused on whether a high-fiber diet can improve how patients with bladder or [kidney cancer](#) respond to immunotherapies.

Shortly before joining Wilmot in the fall of 2022, Guercio conducted a [pilot study](#) at Memorial Sloan Kettering that showed a link between a high-fiber diet and the survival of patients with [bladder cancer](#) who were being treated with immunotherapy. The study, [published](#) in the *Journal*

of *Clinical Oncology*, showed a similar trend for patients with [renal cell carcinoma](#) (RCC), a type of kidney cancer, but Guercio says he needed to do more research to see if that effect might also be significant.

In October, he received the Interdisciplinary RCC Focus Award from the Kidney Cancer Association to support this work. With this one-year grant, he will collect diet information as well as blood and stool samples from 120 patients with RCC from Wilmot and Memorial Sloan Kettering.

Comparing patients who have not yet started immunotherapy with those who have, he will examine whether the amount of fiber in patients' diets impacts the amount and type of bacteria in their gut. He will also look for beneficial factors like short chain [fatty acids](#), which are produced by bacteria when they consume fiber and may help prime the immune system to respond to [immunotherapy](#), according to previous research.

In other similar studies, Guercio will also look at patients' progression-free survival, overall survival, and whether consuming a high-fiber diet can help immunotherapies shrink tumors.

Though preliminary findings are promising, Guercio cautions that diet is not a substitute for standard therapies. "Even though we're trying to find out if diet is helpful to patients, standard therapies are still really, really important. We're just trying to help figure out how to make those therapies work even better," he said.

More information: Brendan John Guercio et al, Associations of diet with survival of patients (pts) with metastatic cancer of the urothelium (mUC) and renal cell carcinoma (mRCC) on immune checkpoint blockade (ICB)., *Journal of Clinical Oncology* (2023). [DOI: 10.1200/JCO.2023.41.16_suppl.4598](https://doi.org/10.1200/JCO.2023.41.16_suppl.4598)

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