Gut bacteria could play key role in patient response to new cancer treatments

Does the quality and diversity of human gut bacteria determine whether people will successfully respond to cancer treatment?

“When we looked at stool from breast and lung cancer patients, we discovered that important bacteria were missing from the microbiome,” [chemical engineer Stephanie] Culler says. The absence of certain gut microbes, mostly Firmicutes bacteria, could explain why immune checkpoint inhibitors—drugs that block cancer-friendly proteins and help facilitate the immune system’s response to cancer cells—don’t work on some patients. “We believe that those bacteria are important for the immune system to be able to respond to those drugs,” Culler says.

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“Our goal is to create therapeutics to convert non-responders into responders,” Culler says, referring to patients who do or do not respond to checkpoint inhibitors. Her company hopes to engineer a mix of selected gut bacteria that can be taken in pill form to heal patients’ microbiomes, which can be damaged by antibiotics and poor diet.

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“Even healthy people might be missing these gut microbes, but cancer patients and people with compromised immune systems are more likely to be missing them,” Culler says. “We want to give them back.”

Read full, original post: How the Microbiome Could Be the Key to New Cancer Treatments