

Microbial link between Western-style diet and incidence of colorectal cancer uncovered

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New research, published in *Gastroenterology*, builds the case that a Western-style diet—rich in red and processed meat, sugar and refined grains/carbohydrates—is tied to higher risk of colorectal cancer through

the intestinal microbiota.

Investigators from Brigham and Women's Hospital with collaborators looked at data from more than 134,000 participants from two U.S.-wide prospective cohort studies. The team analyzed dietary patterns as well as DNA from *Escherichia coli* strains found in more than 1,000 colorectal tumors. The team looked for [bacterial strains](#) carrying a distinct genetic island known as polyketide synthase (pks). Pks encodes an enzyme that has been shown to cause mutations in human cells. Overall, the team found that Western diet was associated with colorectal tumors containing high amounts of pks+ *E. coli* but not with tumors containing little to no amount of pks+ *E. coli*.

"These findings support our hypothesis that Western-style diets increase colorectal cancer risk through its effect on pks+ *E. coli*," said corresponding author Shuji Ogino, MD, Ph.D., MS, of the Program in Molecular Pathological Epidemiology in the Department of Pathology at the Brigham. "This is the first study to link Western diet with specific pathogenic bacteria in cancer. Our next question is which component of Western-style diet and lifestyle relates to colorectal cancer containing this bacterial species."

More information: Kota Arima et al, Western-style Diet, pks Island-Carrying *Escherichia coli*, and Colorectal Cancer: Analyses from Two Large Prospective Cohort Studies, *Gastroenterology* (2022). [DOI: 10.1053/j.gastro.2022.06.054](#)

Provided by Brigham and Women's Hospital

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