

Women's antibiotic use linked to higher risk of death from heart disease, other causes

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Women who take antibiotics for long periods, especially in late adulthood, appear to have a higher risk of death from heart disease and in general, according to preliminary research presented at the American Heart Association's Epidemiology and Prevention | Lifestyle and Cardiometabolic Health Scientific Sessions 2018, a premier global exchange of the latest advances in population-based cardiovascular science for researchers and clinicians.

While previous studies have found antibiotic use is associated with long-lasting changes to microorganisms that live in the human gut, known as [gut microbiota](#), researchers had yet to examine relatively healthy populations of people to determine how duration of antibiotic use at different times during adulthood might be related to all-cause and cause-specific risk of death, according to study author Lu Qi, M.D., Ph.D., professor of epidemiology at Tulane University in New Orleans.

"Gut microbiota alterations have been associated with a variety of life-threatening disorders, such as cardiovascular diseases and certain types of cancer," Qi said. "Antibiotic exposure affects balance and composition of the gut microbiome, even after one stops taking antibiotics; so, it is important to better understand how taking antibiotics might impact risks for chronic diseases and death."

In a collaborative research study between Tulane University School of Public Health and Tropical Medicine and Harvard T.H. Chan School of Public Health, Qi and colleagues studied 37,510 [women](#), aged 60 years

and older, who reported their antibiotic use and were free of heart disease and cancer at the study's start. They classified the women based on how long they had used antibiotics: not at all, less than 15 days, 15 days to less than two months or two or more months. Then, the researchers followed the study population from 2004 until June 2012.

They found:

- Women who took antibiotics for two months or longer in late adulthood were 27 percent more likely to die from all causes during the study period than women who did not take antibiotics.
- Taking antibiotics two or more months was associated with a 58 percent higher risk of cardiovascular death, compared to no antibiotic use.
- These associations existed regardless of traditional risk factors for death, including lifestyle factors, dietary habits, obesity, medication use and more.
- The association between long-term antibiotic use in late adulthood and increased risk of death from all causes was more evident among women who reported also using antibiotics in middle adulthood, from ages 40 to 59 years, than women who didn't use antibiotics in middle adulthood.
- There was no notable association between antibiotic use and death from cancer.

"Although we observed a notable association between long-term antibiotic use and risk of death, it isn't yet clear whether long-term antibiotic use is the specific cause of the association. For example, women who reported antibiotic use might be sicker in other unmeasured ways," Qi said. "These results, however, contribute to a better understanding of risk factors for all-cause and cardiovascular death. We now have good evidence that people who take [antibiotics](#) for long periods during [adulthood](#) may be a high-risk group to target for risk-

factor modification to prevent [heart disease](#) and [death](#)."

Provided by American Heart Association

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