



# News

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NORTH CAROLINA AGRICULTURAL AND TECHNICAL STATE UNIVERSITY

## Dr. Marc Cook Teaches “Love Your Gut”

**Greensboro, NC – September, 2018** – Dr. Marc Cook is an assistant professor in the Department of Human Performance and Leisure Studies in the College of Health and Human Sciences. He is studying how exercise and dietary choices impact specific gut bacteria, resulting in better cardiovascular health outcomes.



Unless you’ve been living under a rock the last few years, you have probably heard the discussions surrounding gut bacteria. Clinically known as “microbiota”, these terms reference the microbe population which lives in the human intestine. Now supported by a stocked shelf of over-the-counter pro-biotics, ensuring the health and survival of gut microbiota is big business, and big science for researchers like exercise physiologist and immunologist Dr. Marc Cook.

Gut microbiota is comprised of trillions of microorganisms; over 1000 different species of known bacteria with more than three million genes! If you took out the average adult’s gut microbiota and put it on a scale, it would weigh over four pounds! About a third of your gut microbiota is common to most people, but two thirds are unique to you. While each of us has a unique microbiota profile, it fulfills the same physiological functions: it aids in digestion, helps with the production of vitamins, helps us combat harmful microorganisms, and plays an important role in the development and maintenance of our immune system.

Healthy and balanced gut microbiota is key to good health, and Dr. Marc Cook is working to give N.C. A&T athletes and individuals with high blood pressure a glimpse into the inner-workings of their bellies. “African Americans experience hypertension at a higher rate than people of other races,” explains Dr. Cook. “This racial health disparity, and the role of specific gut bacteria have in cardiovascular health, is the subject of my research. We can utilize exercise to better understand which gut microbes are associated with better blood pressure.”

Some beneficial bacteria in the human gut produce what are called short-chain fatty acids. These have been shown to aid in maintaining a health blood pressure and a host of other immune responses with anti-inflammatory benefits. By examining factors affecting the amount of



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bacteria, and the number of short-chain fatty acids present in the blood and a person's blood pressure readings, Dr. Cook is starting to understand how different populations of microbes can take active measures to improve their health.

“Here's what we know so far. Exercise increases bacteria that produce short-chain fatty acids in the gut. A diet high in fiber energizes short-chain fatty acid bacteria. The more active our beneficial gut bacteria are, the more short-chain fatty acids are produced, resulting in lower blood pressure and therefore decreased risks for cardiovascular disease, various cancers, and other ailments. An active short-chain fatty acid producing gut translates into better health, so I am engaging populations that are intentionally and unintentionally impacting their gut bacteria.”

Dr. Cook has secured research funding from the American Heart Association, the United States Department of Defense and the North Carolina Translational and Clinical Sciences Institute. He is working with populations of athletes (who are energizing their gut bacteria through exercise) as well as a group of adults 18-50, whom have normal and high blood pressure. Each study uses a combination of exercise techniques, a diary of food intake, as well as gut microbial bioinformatics achieved through different tests and measurements.

Dr. Cook's research will help us understand how different populations, particularly African Americans, can take active steps toward energizing gut bacteria to benefit their cardiovascular health. “Your gut is unique to you, and how well you understand it and support it will play an enormous role in your health and ability to both avoid and fight disease.”



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