

May 2019

Background

Over the last four years, the Survey of the Health of Wisconsin collected information and samples from 892 participants in the Wisconsin Microbiome study. We have compiled the data and we can now start to see some of the results and overall trend.

What did we find?

Our study population included 58% female and 42% men, and the average age was 53 years old. We sampled participants in 18 Wisconsin counties for this study (Figure 1).

A large part of this study focused on collecting information about diet. One factor in maintaining a healthy microbiome in the gut is eating a balanced diet including fiber, fruits, and vegetables. As a state, we fall below the national guidelines in these areas.

Another factor contributing to our microbiome is the use of antibiotics. A little over one third of participants (36%) had taken an antibiotic in the last year (Figure 2). Finally, we analyzed all of the samples collected and found that just under one third of samples (31%) had a positive result for bacteria that are resistant to many antibiotics (Figure 3).

What does all of this mean?

It means that we still have a lot of exciting research questions to answer about connections between diet, antibiotic use, other factors, and the health of our microbiome. Thanks to your participation, we now have a wealth of data and biosamples to support this research.

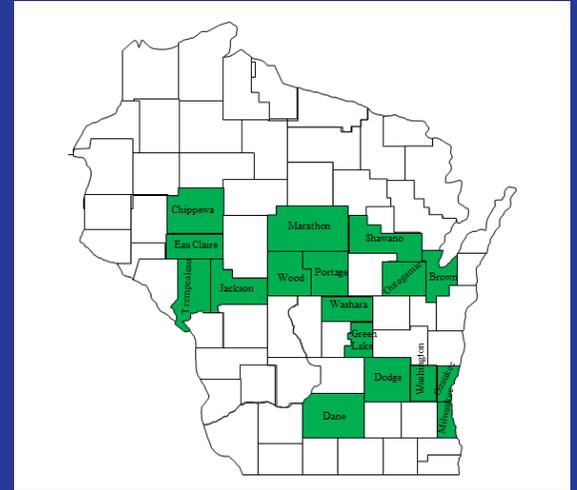


Figure 1. Wisconsin Microbiome study participants came from 17 counties across Wisconsin.

Antibiotics Taken in the Last Year



Figure 2. Over one third of participants disclosed taking an antibiotic in the last 12 months.

Bacteria resistant to many antibiotics are present in Microbiome Sample

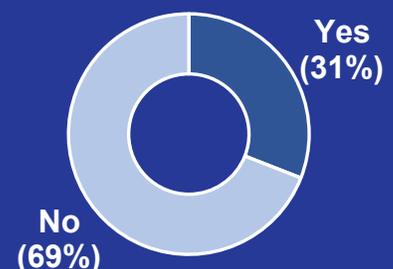


Figure 3. Almost one third of participant samples tested positive for bacteria that are resistant to many antibiotics.

What's Next?

SHOW is learning more about how the Human Microbiome, Human Genome, and our DNA influence our health.



Did you know that mice and humans have similar number of genes?

Fun facts about DNA and the Human Genome:

- DNA is what make us unique as individuals. However, only 0.1% genetic material is different from person to person (and this 0.1% makes us unique).
- Humans have 23 chromosomes and around 20,000 genes.
- We do not know the role or function of all human genes. We still have a lot to learn, which is why this research is so important.
- We share 92% of our genes with mice, 44% of our genes with fruit flies, and we even share 18% of our genes with plants!

Fun Facts about the Human Microbiome:

- Our bodies have about three times more bacteria cells than human cells. However, because bacteria are 10 times smaller than the average human cell, all of the bacteria in our body only weigh about five pounds total.
- Good bacteria in the gut help us to digest some foods like carbohydrates and others help us to fend off infections.
- In SHOW, we are learning which bacteria are beneficial, what they do for us, and which bacteria are harmful and associated with certain diseases.

On behalf of researchers, study staff, and students at SHOW, we thank you for participating in the Wisconsin Microbiome Study. Over the last four years, 892 of you agreed to provide us your valuable time, health information, and biosamples. We are analyzing the data to understand how the bacteria in the gut varies from person-to-person and to identify opportunities to use what we learn to promote the health of people in Wisconsin and beyond. That might be updating current recommendations and guidelines for diet and lifestyle, preventing or managing illnesses, or making new discoveries that lead to new lines of research.

The Wisconsin Microbiome Study was originally supported from a grant awarded by the Wisconsin Partnership Program. Thanks to your participation, the study was selected for expansion by the Microbiome Initiative at the University of Wisconsin-Madison. We are looking forward to continuing this important research and reporting back to you what we discover in the coming years.



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