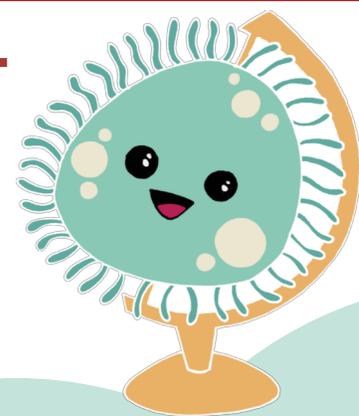


# IMMIGRANT MICROBIOME PROJECT

Findings from a research study on the gut microbiomes and obesity risk of Hmong and Karen women in the U.S.



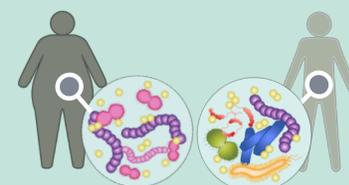
## WHAT WE ALREADY KNEW BEFORE THIS STUDY

We all have trillions of tiny bugs that live inside our intestines and they are called the "gut microbiome". Most of these bugs are "bacteria" and they are so small that you need a microscope to see them. These gut bacteria are very important for keeping our bodies healthy. People with fewer types of bacteria in their gut have more health problems.

## WHAT WE LEARNED IN THIS STUDY

### FATTER PEOPLE HAVE FEWER TYPES OF BACTERIA IN THEIR GUT

Thin people have more types of bacteria in their guts. This is true if a person is Hmong. This is true if a person is Karen. This is true if a person lives in the U.S. and it is true if a person lives in Thailand.



### PEOPLE WHO LIVE IN THE U.S. FOR A LONGER TIME HAVE FEWER TYPES OF BACTERIA IN THEIR GUT

Hmong and Karen people living in Thailand have the greatest number of types of bacteria in their gut. One reason could be that food in Thailand is different from food in the U.S. Other reasons could be the medicines they take or do not take, or how much they exercise or sweat.



### PEOPLE EAT MORE SUGARS, FAT, & PROTEIN AFTER MOVING TO THE U.S.

People who eat more vegetables and rice have gut microbiomes like Hmong and Karen people living in Thailand. People who eat more fruits, milk, soft drinks and fruit juices, cookies, and meats have gut microbiomes like White/Caucasian Americans.



### WHAT A PERSON EATS EXPLAINS THE TYPES OF BACTERIA IN THEIR GUT, BUT IT IS NOT THE ONLY EXPLANATION

Hmong and Karen people who move to the U.S. take years to get used to eating American foods, but their gut microbiomes starts changing right away. We think that the many life changes that a person goes through after moving to the U.S. are also important for explaining the changes in their types of gut bacteria.

There are many reasons why people gain weight, and we still have many important questions to answer. What we know is that Hmong and Karen in Thailand are thinner and have more types of gut bacteria than Hmong and Karen in the U.S. For these reasons, we think that:

**keeping traditions may be important for protecting health**

For animated videos about our results, please visit:

English: [z.umn.edu/IMP-English](http://z.umn.edu/IMP-English) · Hmong: [z.umn.edu/IMP-Hmong](http://z.umn.edu/IMP-Hmong) · Karen: [z.umn.edu/IMP-Karen](http://z.umn.edu/IMP-Karen)

Find out more about our project at: [www.knightslab.org/imp](http://www.knightslab.org/imp)