A New Revolution in Medicine: What "Bacteria Type" Are You?

A recent scientific breakthrough may lead to a new way to classify and treat humans according to the types of bacteria found in their guts.

PRACTICAL SCIENCE WITH PHIL FREDA

A co-worker of mine handed me an article last week that was published on Thursday, April 21, in the *New York Times*.
Upon reading it, I knew it would be an interesting subject to cover.

A research group, led by Peer Bork of the European Molecular Biology Laboratory in Heidelberg, Germany, found that just three different bacterial populations were present in a survey of over 400 people.
The work was published in the scientific research journal *Nature* Wednesday, April 20.

There's bacteria living in me!?

Actually, there are 10 times more bacterial cells in and on your body than there are human cells.
In one of my previous articles on symbiosis, I illustrated how the bacteria living in our body help us digest foods by making enzymes that our body can't, and even help manufacture essential vitamins.
There are hundreds, maybe even thousands, of different bacteria species that live in your mouth and on your skin, but the majority actually live in your gut (intestines).
Once we leave our mother's womb, which is extremely sterile, we are literally invaded by many different kinds of bacteria.

The food you eat, the air you breathe and every surface you touch is inundated with various species of bacteria.

These bacteria invade and colonize our body soon after birth.

I know it must seem extremely gross to know that we are home to hundreds of trillions of bacteria, but the establishment of these "stowaways" actually benefits us quite nicely.

Aside from helping with food digestion and vitamin production, our gut bacteria help out our immune system by curbing and fighting off all the other bacteria out there that want to hurt us.

What did the researchers find?

The researchers studied European, American and Japanese individuals of various ages, degrees of health, body weights and from both sexes.

Regardless of these factors, each person was found to be placed in one of three different bacterial classifications.
There was no correlation between the distinguishing factors, meaning that people from Japan, for example, didn't show any significant differences in **enterotype** frequencies from people in Europe or America.

Think of enterotypes like blood types.
Each person on the planet can be categorized and classified into 1 of 4 blood types: *A*, *B*, *AB*, or *O*.

An enterotype is a certain type of bacterial population where bacterial species are seen in certain percentages.

In addition to this, each enterotype had species of bacteria that did not show up in one of the others, meaning that each enterotype has a few species that are unique to it.

Current research shows that certain types of bacteria randomly colonize infants. The bacterial species that enter first pave the way for other bacteria that "get along with" the original trailblazers.

Similar to many ecosystems found on the Earth, certain species of bacteria work well with certain others in the right proportions.
What the research found is that humans can be colonized in roughly three different distinct ways that remain the same throughout our entire lives.

The plethora of bacteria found in each person's body, and the biosphere within, is coined as **microbiomes**.
Think of these as microscopic biospheres that, according to the article, have similar diversity to that found in a tropical rainforest!

How can this research benefit me?

The researchers found that different enzymes and vitamins are found in different proportions depending on which enterotype the subject displayed. This means that a person may have more of one enzyme or vitamin than a person of another enterotype.

The opposite is also true, however, in that you may have very little of another enzyme or vitamin that a person of a different enterotype has in excess.

Just as the discovery of blood types revolutionized and improved our understanding of blood transfusions and organ transplants, this discovery may drastically change the way we think about diet and drug interaction.
This research may lead doctors and nutritionists to "tailor make" diets and drug regimens for patients and their respective enterotypes.

Certain foods and drugs may have different interactions in different people because of their enterotypes, and this research may help doctors select the best treatment approach.

Another possibility is that this research may help doctors find alternatives to antibiotics that are quickly losing their potency.
By looking at which bacterial species are found in each enterotypes and their respective proportions, doctors can find new ways to combat “bad” bacteria.

Antibiotics are a huge part of our daily lives. The soap we use, the food we eat, and the medicines we take are loaded with antibiotics.

This sounds like a good thing, but in actuality, too many antibiotics can make bad bacteria more resistant to them, and therefore harder to treat.
This happens as a result of natural selection.
Only the heartiest, drug resistant bacteria survive and multiply, passing their strength and resistance to future generations.

This research may help doctors strengthen the good bacteria in our body, which will help them combat foreign invaders.

The researchers acknowledge that more work is needed by surveying people of all the other races and ethnicities to solidify their claim.

Hopefully, this research will improve our current understanding of medicine and patient treatment. Think about it!

Think about it yet? Tell us in the comments.