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Ahmed N *

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Short Communication

Unveiling the Crosstalk of Gastrointestinal Tract and Body Organs

Ahmed N [1]*, Elgayar M [2], Mokhtar A [1], Maher M [1], Moharram M [1], Gomaa G [3], Omar A [1], Seif S [1], El-Saadany M [1], El-Etreby S [1], Awad M [1], ElDesoky A [1]

[1]Internal Medicine Department Hepatology and Gastroenterology unit, Faculty of Medicine, Mansoura University.

[2]Dermatology Department, Faculty of Medicine, Mansoura University.

[3]Cardiovascular Department, Faculty of Medicine, Mansoura University.

***Corresponding Author:** Ahmed N., Internal Medicine Department Hepatology and Gastroenterology unit, Faculty of Medicine, Mansoura University.

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Abstract

The organ systems of the body are all interconnected and inter-influential. In our current healthcare system, we have various specialists that are highly specialized in their field but for the most part, they don't communicate with other specialists outside of their field, even when it comes to mutual patients. No one else is allowed to talk about their specialty because they feel they are the specialist in that field. However, the body doesn't work like that. All the organs of the body communicate and influence other organs and the gut is no exception. In fact, the gut communicates with possibly every other organ in the body Our aim is to show the new generations that gastrointestinal tract deserves respect and awareness of importance and demonstrates its crosstalk with other body organs.

Keywords: digestion; disease; microbiome; effect; gut

Introduction

The organ systems of the body are all interconnected and inter-influential. In our current healthcare system, we have various specialists that are highly specialized in their field but for the most part, they don't communicate with other specialists outside of their field, even when it comes to mutual patients. No one else is allowed to talk about their specialty because they feel they are the specialist in that field. However, the body doesn't work like that. All the organs of the body communicate and influence other organs and the gut is no exception. In fact, the gut communicates with possibly every other organ in the body. [1]

Viewpoints:

As the first world known dentist is Hesy-Ra[2] we,ll begin with oral relations, the bacteria in your gut can contribute to gum disease, cavities, and even conditions like oral infections. On the other hand, a healthy gut environment helps maintain a strong immune system, which supports your body's ability to fight harmful bacteria in your mouth, gut health and oral health are closely connected, and maintaining a balanced diet, rich in probiotics and nutrient-dense foods, can support both. By nourishing your gut with healthy foods, you can promote a healthy mouth, fight oral infections, and improve your overall well-being. [3] While the connection between the gut and skin is still being explored, emerging research suggests that what's happening in your gut might show up in the bathroom mirror, as we have bacteria in our gut, we also have bacteria living on the surface of skin called skin microbiome, the two ecosystems are thought to be in constant communication through the gut-skin axis and there's a link between gut health and inflammatory skin conditions like eczema, psoriasis and even premature ageing. Poor gut health, especially when the gut leaks can allow toxins and harmful bacteria to enter the bloodstream. This can trigger systemic inflammation, which may worsen joint pain and conditions like arthritis studies have shown that people with certain forms of arthritis often have a slightly different gut microbiome profile compared to those without the condition. The gut-brain axis is a hot topic in wellness right now, and for good reason. "Your gut and brain communicate constantly through a two-way axis, with signals travelling back and forth between your digestive system and your central nervous system, potentially influencing everything from mood and memory to stress levels. Also, a healthy gut microbiome produces neurotransmitters like serotonin (about 90% of which comes from your gut) which regulate mood, anxiety and stress. Clinical trials showed

that a gut-supporting diet may have a significant improvement on people's depression scores. Most of your immune system is housed in your gut? As much as 70% lives along your nine meter digestive tract and if the bacteria there aren't well fed, they can activate the immune system which can create low grade inflammation that makes us more vulnerable to invaders. As well as your immunity, your gut microbes may also be quietly supporting, or sabotaging, your heart health efforts. "Our microbes are thought to play a role in metabolising things like cholesterol, But we also know that if we overfeed them with ultra-processed foods or lots of protein without enough fibre, they could start producing certain toxic compounds that have been linked to heart problems.If you're struggling with unexplained sleepless nights or constant fatigue right now look into your diet. lack of Sleep can negatively impact your gut, only 20% of your gut microbiome is genetically determined, the other 80% is shaped by lifestyle habits: diet, sleep, stress and lifestyle[4] Gut microbiome, the "good" bacteria do more than just help with digestion. They help keep your "bad" bacteria in check. They multiply so often that the unhealthy kind don't have space to grow. When you have a healthy balance of bacteria in your gut, it's called equilibrium. Studies have found that if you have too much of a certain kind of bad bacteria in your gut microbiome, you're more likely to have: Crohn's disease, ulcerative colitis and irritable bowel syndrome. Some kinds of gut bacteria may be part of the link cholesterol has to heart disease. When you eat foods like red meat or eggs, those bacteria make a chemical that your liver turns into something called TMAO (trimethylamine-N-oxide). TMAO may help cholesterol build up in your blood vessels. A natural substance called in olive and grapeseed oil is thought to keep your bacteria from making TMAO, too much TMAO might make you more likely to have chronic kidney disease in the first place. Your brain sends messages all over your body. Researchers believe your gut may talk back. Studies show that the balance of bacteria in the gut microbiome may affect your emotions and the way your brain processes information from your senses, like sights, sounds, flavors, or textures. Scientists suspect that changes in that balance may play a role in conditions like autism spectrum disorder, anxiety, and depression, as well as chronic pain, unhealthy balance in your gut microbiome may cause crossed signals from your brain when it comes to feeling hungry or full, there may be a link to the pituitary gland, which makes hormones that help set your appetite. That gland can affect the balance of bacteria in your gut, too. You get your gut microbiome at birth, and the world around you affects it as you grow up. It's also influenced by what you eat. That's why it can be different depending on where you live and why you may be able to tilt the balance a bit. Probiotics found in some foods, these are "good" bacteria like the ones already in your gut. They can add to the bacteria in your intestinal tract and help keep everything in balance. But they're not all the same. Each type works in its own way and can have different effects on your body. They can make your immune system stronger. They may boost gastrointestinal health, too, especially if you have something like irritable bowel syndrome. Some probiotics also may help ease allergy symptoms and help with lactose intolerance. But because our gut microbiomes are unique, if and how they work can be different for everyone. Look on the ingredients list for live cultures of bacteria like bifidobacteria and lactobacilli. They're in yoghurt, aged cheese, fermented vegetables, like kimchi and sauerkraut, and pickled vegetables, like onions and gherkins, think of these as a food source for probiotics. They may help your body take in calcium better and boost the growth of helpful bacteria in your gut. They're found in fruits and vegetables, like: bananas, onions, garlic, leeks, asparagus, artichokes, soybeans and whole wheat. Probiotics can boost the growth of good bacteria, and prebiotics are good for probiotics. When you combine the two, it's a synbiotic. The idea is to help probiotics live longer. You can make synbiotic combinations with things like bananas and yogurt or stir-fry asparagus with tempeh. Other ways to change your gut microbiome as fecal transplants change your gut bacteria to treat things like C. diff and ulcerative colitis. A device called deep transcranial magnetic stimulation (dTMS) uses a coil put on the scalp to stimulate the brain and change gut bacteria. It shows promise for treating obesity[5] There is a harmony between beneficial bacteria and potentially harmful pathogens in our gut, the gut is home to 70% of our immune tissue, which directly relates to how well our body fights infections and battles certain diseases. In this regard the gut is critical for our immunity. Gut health may also be connected with obesity, but not in a way one might think. It's not just caloric intake affecting our weight but the type of food that we eat, and how our gut "ferments" or breaks down that food. This then impacts how our body regulates blood glucose. Research is starting to show that obesity may be connected to a lack of certain microbes in our gut. Eating a diet exclusively focused on highly processed foods, we have less diversity of certain beneficial microbes in our gut. The past few decades have shown a huge increase in colon cancers and other serious GI-related diseases revolving around chronic-inflammation of the stomach. Many of these conditions may be explained by diets lacking in fiber and high in processed foods that can often lead to conditions such as chronic constipation. With much of the immune system in the gut and the majority of your body's serotonin produced in the gut, it's long been known that diet and mental health are linked, serotonin plays a key role in our sleep, mood, anxiety, wound healing, digestion, libido and more. New research also shows the correlation between how levels of certain bacteria are associated with the onset and progression of depression in certain patients, bacteria found in the gut may protect against Alzheimer's. [6] Five keys to a happy gut : normal weight, stay hydrate, manage stress, nough sleep, be physically active[7] Exercise helps people to function better in everyday life as it helps your muscles to use oxygen more efficiently. [8]

Conclusion and recommendations:

The digestive system is one of the most essential systems in the human body, responsible for breaking down food, absorbing nutrients, and eliminating waste. However, it does not function in isolation. It collaborates with various other systems to ensure that the body receives the energy and nutrients needed for optimal functioning. This interconnectedness between systems plays a crucial role in maintaining overall health and balance[9] The familiar adage "listen to your gut" is more than just paying attention to your intuition, but a smart and sound way to keep your body and mind functioning in peak condition.[6] We should care of our gut and listen to its crosstalk with other body organs.

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