

THE SECOND BRAIN

Gut is the centre of our well-being — and a key to both great health and good mood

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It turns out gut instinct is a much bigger deal than most of us knew. A central hub full of neurotransmitters and micro-organisms, we've been addressing our gut without actually using the word 'gut' for generations now. Feeling butterflies "inside" before an exam or a big interview; feeling so stressed that your stomach gives out; the feeling of "something is wrong" or instinctively avoiding certain foods — over the last couple of decades, science has revealed that all these feelings are most likely not triggered by the brain, but our gut, the second brain inside us.

The alimentary canal, or our gut, is a roughly a nine-metre-long tract from the esophagus to the anus, where a million complex processes take place. But most importantly, this tract is responsible for food to enter, be digested and exit our systems in a smooth, continuous process. To do this, the gut has a trillion micro-organisms, including many thousands of good bacteria that make up the gut flora.

According to Ayurveda, the gut, or *koshtha*, is the largest and longest channels in the body that can affect all the smaller channels like veins and arteries.

"A disease is manifested when the gut gets affected in one of three ways: Hyper-activity, blockage, or reverse activity in the channel," explains world-

renowned holistic health expert Dr Issac Mathai, who is also medical director of Soukya International Holistic Health Centre, Bangalore.

A healthy gut is populated by diverse bacteria derived from a wide range of wholesome foods. Traditional Indian food, irrespective of regions, is designed to keep a balance of the flora in our systems. With a combination of fibre, protein, tempering spices, minerals and vitamins, food has always been a way to



Curd is a traditional probiotic that helps boost gut health

keep us healthy, and not just satiated. Probiotics too, have been staple in our daily diets — whether it is home-churned curd in Punjab, or fermented yam leaves in Nagaland, or buttermilk in Kerala, we've been consuming healthy bacteria in the form of everyday food for generations.

However, with the world becoming a global village, and lives getting busier, over the years, certain foods have gone out of our daily diets, replaced by certain others mostly out of a packet. The United Nations recently noted that as high as 90 per cent of crop varieties have disappeared from the world in the last century as people have started consuming fewer, and increasingly similar, food items. An inevitable fallout of this homogenous diet is a negative impact on our gut health and hence our entire digestive system.

Now, instead of traditional probiotics, we eat prebiotics and probiotics out of bottles and packets to make up for the imbalanced diet. "One of the things that control the gut neural system is the kind of bacteria inside," says Dr Shobna Bhatia, head of medical gastroenterology at King Edward Memorial Hospital, Mumbai. "Gut bacteria varies with the kind of food we intake."

In fact, there is biochemical signaling, a kind of cross-talk, which occurs between the gut bacteria, the gut and the brain. Dr Michael D. Gershon's path-breaking book *The Second Brain* talks about how the gut is a mass of neural tissue, containing a "100 million neurons" that constantly transmit signals to our main brain about the body's well-being. His research reveals that our state of mind and our gut are inter-dependent,

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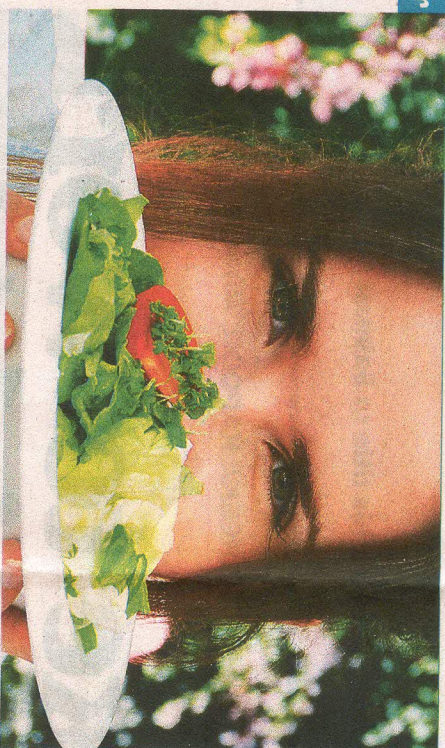
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both Dr Mathai and Dr Bhatta concur. "Neurotransmitters in the brain control our feelings, emotions and overall wellbeing," explains Dr Mathai. "For instance, the neurotransmitter serotonin contributes to feelings of happiness and also helps control our body clock. Interestingly, a large proportion of serotonin is produced in the gut."

Stress can also have a direct impact on gut health. Dr Bhatta adds: "It can manifest in your gut in intangible feelings of 'queasiness' or something one can't put one's finger on. Diseases of the gut like irritable bowel syndrome are often related to stress."

Unsurprisingly, when such key central machinery is disturbed, our health goes for a toss. The first sign of an unhealthy gut is indigestion. Feeling bloated, gassy, constipated or irregular motions are signs that your gut isn't able to process foods well.

An unhealthy gut sets off a chain of reactions that can affect everything from your immune system to your skin. Scientists (such as G Vighi) have established that 70 per cent of the immune system is



Green leafy vegetables can help restore healthy bacteria in the gut

located in the gut. "In fact, the very strategy of Ayurveda to tackle any illness is to achieve *koshha shuddhi*, or cleansing of the gut," says Dr Mathai. "Ayurveda, more or less, dictates that if the gut is healthy, the individual is healthy."

There are other ways in which bad gut health can manifest itself. In the winter of 2017, Neha Kumar, who lives and works in Delhi, developed skin rashes out of nowhere. "From allopathy to homeopathy to eliminating common allergens from my diet, I tried many things on various doctors' advice," she says. What helped in the end was a strict 20-day Ayurvedic cleanse comprising "the

bitterest of concoctions". She went off processed foods and dairy products (except curd) and her recurring rashes "simply disappeared".

Allergy to foods start when the allergens irritate the gut, and manifest itself in the form of itching or breakouts. So a healthy gut is directly related to healthy skin.

An unhealthy gut can also affect one's fitness levels. "Certain inflammatory compounds called cytokines are increased by leaky gut syndrome and are directly associated with fatigue," says Dr Mathai.

Mumbai-based R Srinivasan used to feel tired and fatigued all the time until he went for a two-week Panchakarma programme that aims to reset the gut by prescribing a strict diet and lots of gut-cleansing enemas.

"Last year, I caught a bug and my gut flora got affected. As a result, I suddenly couldn't digest

gluten and used to feel bloated and constipated all the time. I also had no energy left," he says. The two-week regimen that included partaking ghee so as to oil the tract, helped to repopulate the gut with healthy flora and reset his system. "Slowly I was able to get back to a normal diet and was able to digest breads and other gluten products in moderation. I regained my energy soon after."

Clearly, the gut is too crucial a system to ignore, and keeping it healthy should be our top priority. However, beware of falling for easy solutions. The diet map and hence gut flora map of every person is different, and the solution must also be different.

"Each individual should have a customised meal plan based on various factors like their body constitution, geographical location, general strength, age, season of the year, climatic condition, mental state and more," says Dr Mathai. "A customised diet and stress-free mind are the two pre-requisites for a healthy gut."

If you don't have two weeks or 20 days to spare for the regimen of resetting your gut, try something simpler: Alternate fasting, or a 14 to 16-hour period of not eating in a day, has been known to aid gut health. "Our forefathers typically ate supper at sundown, rarely snacked, and then ate mid-morning the following day," says Dr Mathai. "Overnight fasting can def-

initely help." Probiotics like fermented foods and anti-inflammatory foods, and green leafy vegetables, can help heal the gut and restore healthy bacteria.

"One of the most useful bacteria in the gut is lactobacillus, founds in curds," says Dr Bhatta. "Foods like curd rice or just plain homemade curd can help."

Prebiotics are substances that allow the good bacteria to proliferate in the gut; common foods containing prebiotics are chicory (commonly added to south Indian filter coffee), flaxseed, onion and garlic.

Perhaps the biggest evil for the gut is refined flour. "If there was one thing to pick, I'd say avoid maida, as vitamins, fibre and other nutrients are removed from the wheat during its manufacture. The lack of fibre causes constipation and irritates the gut," says Dr Bhatta.

While a healthy gut will digest most foods, you may have particular allergy to foods like milk, soy, nuts, wheat, or shellfish, which may irritate the gut repeatedly. Testing against these foods will help you eliminate the wrong ones from your life and get a meal plan that suits your system best. And remember, even if you eat right, your mind can affect your gut nevertheless, so working on stress management goes hand in hand with the right meal plan to keep our second brain well-oiled and rocking.

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—Dr. Shobna Bhatia