
*Happy Tummy:
Taking Care of Digestive Health*



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White Paper on

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Taking Care of Digestive Health

Prepared by PFNDAI in collaboration with ITC Limited

What is Digestive Health? [\(1\)](#)

Digestive system is extremely important as it helps convert food into carbs, fats, proteins and micronutrients which body can absorb as nutrients and use them for energy or to build or repair cells and tissues. The system keeps working efficiently as long as it is healthy. The health of the digestive system will depend on immunity as well as on what we eat. There are several ailments that can affect the working of digestive system including the following: GERD (Gastro-esophageal reflux disease), peptic ulcer, diverticular disease, IBS (irritable bowel syndrome), gallstones, celiac disease, constipation and diarrhea. Eating a balanced and healthy diet, keeping healthy weight, exercising and reducing stress are some of the ways of maintaining digestive health.

Importance of Digestive Health [\(2, 3\)](#)

Digestive system is made up of gastrointestinal (GI) tract and the liver, pancreas and gallbladder. Thus all the organs connected to digestion, including mouth, esophagus, stomach, small & large intestines and anus besides the above three, liver, pancreas and gallbladder, are involved in the health of digestive system.

Digestion is important as our body needs nutrition from food to stay healthy and properly work so there would be a continuous supply of macro and micronutrients needed that is required for energy, growth and maintenance.

Sometimes, some of the parts involved in digestive system do not work efficiently. This can create some minor problems or major health issues depending on the situation.

Constipation occurs when bowel movements take place less frequently than normal. This condition can cause painful and difficult defecation.

Diarrhea is when one has loose motion and is also too frequent. The most common cause can be bacteria.

Acid Reflux (GERD) occurs when acid or bile from stomach flows back into the esophagus. This causes heartburn and other symptoms. Many people get acid reflux occasionally after having heavy meal or spicy food. When this happens too often it is called GERD, which may pose serious health issues.

Gallstones can form in gallbladder, which sometimes need surgery as they can be painful. Irritable bowel syndrome affects large intestine. It causes extreme abdominal discomfort and pain and needs long-term treatment.

Some of the other problems include haemorrhoids or piles, which affects large intestine and again can become very painful and serious problem requiring surgery.

Stomach flu or gastroenteritis is infection of stomach usually caused by virus. Many people get infected by it every year and is usually lasts less than a week.

Ulcers are sores on the lining of esophagus, stomach or small intestine and caused most commonly by H. pylori bacterial infection.

Lactose intolerance is caused by inability to digest milk sugar lactose. This leads to gut microbes using it in colon producing large amount of gas causing bloating, vomiting, diarrhea etc.

Thus it is necessary to maintain digestive health not just for our overall health but also to stay away from some of the ailments which are quite serious, some needing long-term treatments.

Factors Affecting Digestive Health (4)

There are many different factors, some being genetic, which are difficult to correct. Some are habits such as inactive lifestyle which can adversely affect digestive health, while regular exercise has a positive effect. Most factors affecting the digestive health are diet related and with some discipline can be controlled and thus maintain a good digestive health.

High-fibre Diet: Consuming diet rich in whole grains, fruits, vegetables and legumes can improve digestive health. High fibre diet helps bowel movement, with less likelihood of getting constipated. High fibre also helps prevent or treat certain conditions like diverticulosis and haemorrhoids. It also helps maintain a lower weight.

It is important to have both insoluble and soluble fibre in diet. Insoluble fibre or roughage, helps add to bulk of stool and bowel movement. Soluble fibre absorbs water keeping the stool soft but not watery. Wheat bran, vegetables and whole grains provide insoluble fibre while oats, nuts, seeds, legumes and fruits contain soluble fibre.

Foods high in fat tend to slow down the digestion process which causes constipation. Fatty foods should be combined with high-fibre foods to move things rapidly.

Proteins are very important for a healthy diet so in non-veg diet, lean cuts of meat and skinless poultry will provide proteins with less fat.

Probiotics and prebiotics are very important in the diet. Healthy microbes help enhance nutrient absorption and help digest lactose, strengthen immune system. Probiotics utilise soluble dietary fibre or prebiotics to produce short chain fatty acids maintaining gut environment healthy discouraging growth of pathogens.

FODMAP diet has been recommended for those with digestive issues. These consist of fermentable oligosaccharides, disaccharides, monosaccharides and polyols (FODMAP) carbs which are difficult for some people to digest especially with IBS. Low FODMAP diet offers relief to people with IBS.

Some of the other factors affecting the digestive health are eating on schedule as irregular eating can cause digestive disturbance. Drinking plenty of water is also very important to keep hydrated and for good digestive health as constipation will be avoided. Eating in bigger portions is often one of a common leading causes of a disturbed digestive system which may potentially give rise to ulcers and heartburn. Regular exercise is important for a good digestive system. Maintaining a healthy weight is also extremely critical to maintain a flourishing digestive health. Managing daily stress is also a crucial factor in the overall digestive health ecosystem.

Digestive Health of Indians

Indians have many digestive issues. Urban population is more commonly afflicted with digestive problems. In a survey conducted by Indian Dietetic Association, Mumbai (5) in association with Country Delight, it was found that seven persons out of 10 people suffer from some digestive issues. Almost sixty percent of those surveyed claimed that they experienced digestive health problems every week. About twelve per cent informed that

they suffered every day. This survey was conducted online and over 2000 persons between the ages 25 and 50 years residing in Delhi, Mumbai and Bengaluru were approached for this 'Gut Health Survey'.

It was noted that prevalence of digestive health issues among urban Indians is mostly due to poor eating habits or lack of proper nutritional knowledge. The survey emphasised that by making simple changes like increasing physical activity, changing diet, consisting of natural whole foods and appropriate dairy products can protect gut health.

A survey on Digestive Health of Indian Families (6) commissioned by ITC revealed that 56% families reported digestive health problems. Mothers aged 25-45 years from Delhi, Mumbai, Kolkata, Bengaluru, Hyderabad and Chennai were surveyed. About 77% of them considered digestive health to be extremely important but 56% thought that their families suffered from digestive health problems. Gas, acidity and indigestion were the top three problems for over half the respondents' families. Majority of them thought that digestive health affects weight management, energy levels and bowel movement. Major factors affecting their digestive health were lifestyle and dietary choices while others like irregular sleep cycle, spicy, oily & fried food, low water intake and lack of physical activity also contributed to the problems.

Improving Digestive Health of Indians

Indian diets have undergone multiple changes over the last few years given multiple socio-economic factors that drive affordability, accessibility & sustainability of the food chains. As per the latest NFHS-5, on one hand while we still have a huge burden of hunger, anaemia & undernourishment, certain pockets are also experiencing a rise in overweight and obesity especially in adult population, which is potentially linked to increases in chronic diseases including diabetes, cardiovascular disease, and respiratory illnesses, as one of a contributing factor. This has resulted in lower quality of life, lesser work productivity and very high health care costs(7). Growth and changing diets of middle class living in urban areas in India show how social and cultural practices have altered food habits. Thus focus on improving the availability & accessibility of nutritious foods (fresh fruits, vegetables, whole grains, dairy, fiber rich foods etc) along with improved consumer knowledge about including such foods in a daily, diversified, balanced diets is extremely critical. Increasing the knowledge about the importance of consuming only

safe, high quality foods is also important as foods cooked/consumed in an unhygienic condition/situations are actually one of the most common causes (in India) of multiple issues of digestive system like diarrhoea, acidity, poor microflora balance of the gut etc.

Over decades Indians have been consuming more of popular grains, wheat and rice and their consumption of other traditional (whole) grains including millets has gone down drastically (8). With the current year being celebrated as the “International Year of Millets 2023” , it has provided a unique opportunity to promote this ‘super grain’. Millets are not just sustainable but have many health benefits and with high fibre contents, they would be most useful for digestive health. However, there are many obstacles that need to be overcome before Indians increase consumption of millets. Taste, price, availability, and unfamiliarity are some of the hurdles holding back urban housewives from using millets (9).

As more people demand whole grains and millets there will be greater availability at reasonable price. However, it is necessary for health professionals to create awareness about how to utilise millets and other whole grains with proper pre-treatments like soaking, germination, fermentation etc. to reduce the antinutritional factors.

Role of Dietary Fibre

Health benefits of dietary fibre on gastrointestinal health have been shown adequately. These benefits are derived through consumption of unrefined whole foods including whole grains, legumes, fruits and vegetables among other things. Fibres have regulatory effects on gut including digestion and absorption of nutrients, transit time and stool formation. They also change gut microbes and their metabolites. Both have effect on gastrointestinal health. Properties of different fibres including solubility etc. depend on their origin and processing and greatly affect their benefits (10).

As seen earlier, Indians have been changing their diet to include less of foods containing dietary fibre which affects the digestive health and consequently invites many diseases. This must be reversed and there is need to include more of whole grains especially the multigrain, millets along with legumes and fruits and vegetables, all of which have good contents of dietary fibre.

Role of Multigrain and Millets (8), (9), (11)

Indians used to consume millets, multi-grains and whole grains to a good extent. As some of the western foods made from refined wheat flour became available, there was increasing consumption of such foods with the consequent decrease in multi grain, whole grains and millets. Even rice used to be brown rice or parboiled rice, but slowly people got used to the tasty white polished rice with low dietary fibre the overall consumption of dietary fibre decreased. Even the consumption of fruits and vegetables decreased which further affected the dietary fibre intake.

Whole-wheat flour or atta is often used to make chapatti and roti but bread and similar products are generally made from maida. These foods became common and the dietary fibre consumption decreased, as/when, they become the main source of cereals in the daily diets.

Millets are high in fibre, micronutrients and protein. However, their taste needs to be acquired and people used to eating wheat and rice will find it difficult to accept millets. However, because of their nutritional value especially dietary fibre, health professionals are recommending intake of these cereals, called nutri-cereals. Some of the products have appeared in market made from millets as part of ingredients and many millet flours and even combination of multi millet flours are becoming available. Such changes would certainly go a long way in protecting dietary system and keeping it healthy, as dietary fibres are known to provide many health benefits.

Consumer Study

7/10 Indians lack daily fibre requirements, reveals Happy Tummy from Aashirvaad Atta with Multigrains

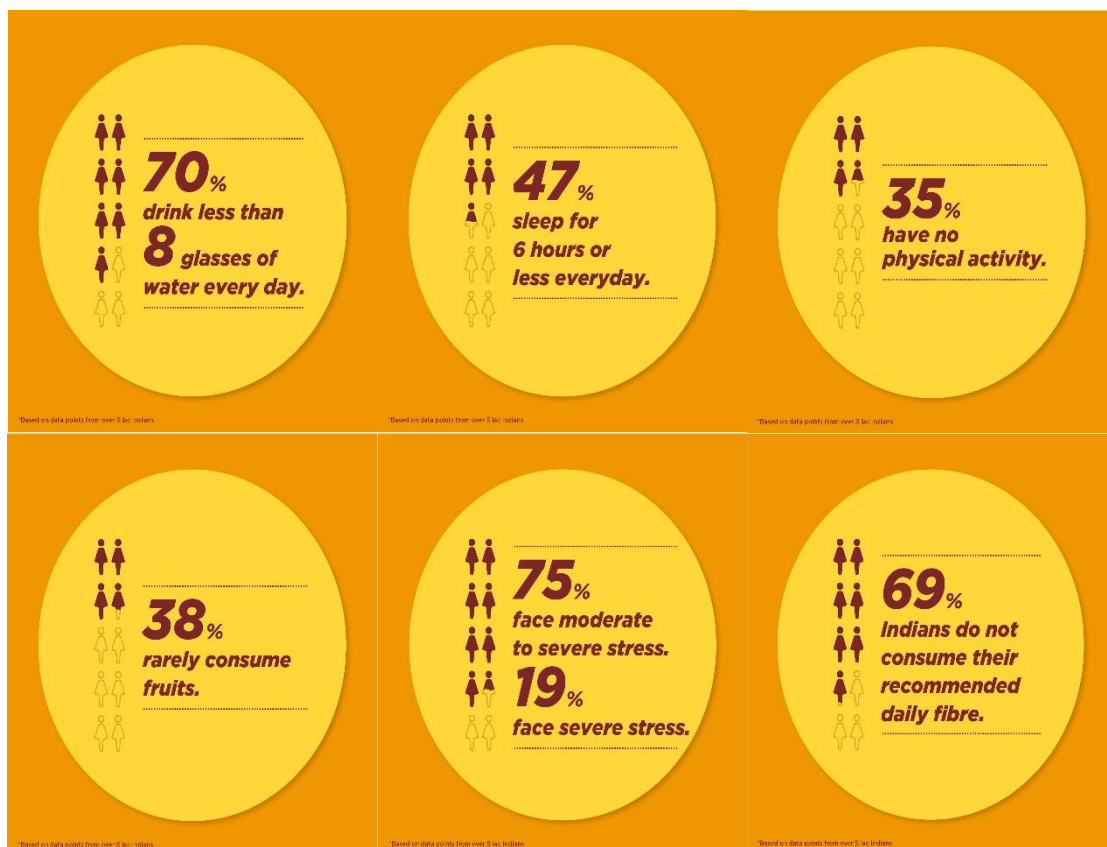
- *The study sheds light upon the country's digestion and highlights the need to address the prevailing gaps*
- *The analysis has been gathered from Aashirvaad Atta with Multigrains' website called happy tummy*
- *The Digestive Quotient Test has been taken by more than 5.7 lac users while the Fibre Meter test has been taken by more than 69,000 users*

**data based on self- assessment*

**the intent is to promote inclusion of dietary fibre as a critical part of a diversified, daily, balanced Indian diet (from various sources)*

The data shows that among 69,000+ consumers who were part of **Aashirvaad Atta with Multigrains'** Fibre Meter Test on their website **Happy Tummy**, a staggering **69%+ Indians consume less fibre** than their recommended daily allowance. Dietary fibre is an essential component as it aids in maintenance of normal digestion, keeps you fuller for longer and facilitates regular bowel movements.

Furthermore, **amongst 5.6 lac+ consumers** who have been a part of **Happy Tummy's Digestive Quotient test**, 70% Indians drink less than 8 glasses of water every day, 47% Indians sleep for 6 hours or less everyday, 35% do not engage in any physical activity and only 40% engage in some physical activity daily. Additionally, 75% Indians reported facing moderate to severe stress.



Launched in 2021, Aashirvaad Atta with Multigrains' **Happy Tummy website** is a content hub that offers different ways to assess one's digestive health ecosystem. The

website also has certified content, including blogs and videos by experts in the field of nutrition, as well as high-fibre recipes. Further, consumers can also book a **free consultation** with dieticians for a personalized session and try the **Ask an Expert** feature to get answer to their queries regarding nutrition and food-related topics. **The Fibre Meter** and **My Meal Plan** tools help individuals track and meet their recommended daily fibre intake based on their gender and age, as per Indian Council of Medical Research (ICMR) guidelines.

Fibre-rich foods such as wheat-based products, multigrains, cereals, fruits, leafy vegetables, etc., aid digestion, offering a wide range of nutrients, vitamins, and minerals contributing to the overall digestive well-being. Surprisingly, as per the responses to Digestive Quotient test, only **26% of individuals consume multigrain daily, while 19% do not consume it at all.**

In line with ITC's nutrition-first approach to '**Help India Eat Better**', Aashirvaad Atta endeavours to support consumers with products such as **Aashirvaad Atta with Multigrains**, which has a wholesome mix of six different grains making it an everyday source of high fibre. This high fibre atta aids in maintenance of normal digestion and through Happy Tummy, the brand aims to empower consumers by providing essential information on digestive well-being.

Conclusions

Dietary health is very important for our wellbeing. It involves the entire digestive system including the GI tract and the liver, pancreas and gallbladder, which need to be healthy. Digestive system remains healthy when we eat a healthy & balanced diet in right portions, maintain a healthy weight, exercise regularly, stay hydrated and manage our daily stress levels. When the digestive system goes out of balance, we invite various illnesses including GERD, peptic ulcer, IBS, constipation & diarrhoea among others. These while may seem small issues initially but have a huge potential of not only disrupting the daily life but also can lead to serious health issues, if not managed in time. Among all factors, healthy diet may be most important as food provides essential nutrients to body for energy, growth and maintenance.

Healthy diet must consist of high fibre from various sources especially from whole grains millets, fruits, vegetables and legumes. Fibre, including insoluble and soluble, not only keeps the gut clean and healthy, it also provides food for healthy bacteria, which grow and boost health through their by-products but also create conditions unfavourable for pathogens. Probiotics can help in this by maintaining the good gut microbiota.

Indians used to have healthy diets rich in fiber, but due to multiple socio-economic reasons, it has led to changes in the overall diet quality with lower, overall intake of dietary fibre. The focus should be on making the daily diets healthier, by introducing fiber rich foods in various forms like whole & multi grain flours, multigrain products, foods rich in fruits & vegetable fibers, probiotics, millet based products etc. Improving the knowledge levels regarding the importance of including these foods is essential along with providing easy-to-make recipes. These small yet significant changes can prove to be powerful tools towards improving the digestive health of a common Indian consumer.

References:

1. Digestive Health, Harvard Health Publishing, Harvard Medical School (<https://www.health.harvard.edu/topics/digestive-health>)
2. Your Digestive System & How It Works, National Institute of Diabetes & Digestive & Kidney Diseases, Dec 2017, US Dept Health & Human Services (<https://www.niddk.nih.gov/health-information/digestive-diseases/digestive-system-how-it-works>)
3. Butler & Cirino, Digestive Health Basics, Nov 2017, Healthline (<https://www.healthline.com/health/digestive-health#problems>)
4. McCoy, 11 Tips for Better Digestive Health, May 2023, Everyday Health (<https://www.everydayhealth.com/digestive-health/tips-for-better-digestive-health/>)
5. Dineshwori, 7 Out of Every 10 Urban Indians Experience Digestive Issues: Survey, Mar 2023, HealthSite.com (<https://www.thehealthsite.com/diseases-conditions/7-out-of-every-10-urban-indians-experience-digestive-issues-survey-965760/>)

6. IANS, 56% of Indian Families Report Digestive Health Issues, Reveals Survey, National Herald, May 2021 (<https://www.nationalheraldindia.com/health/56-of-indian-families-report-digestive-health-issues-reveals-survey>)
7. Gargi S. Kumar et al. Evolving Food Choices Among the Urban Indian Middle-Class: A Qualitative Study, Frontiers in Nutrition 29 Mar 2022 Volume 9 (<https://www.frontiersin.org/articles/10.3389/fnut.2022.844413/full>)
8. Dayakar Rao et al. Nutricereals for Nutritional Security, ICAR – Indian Institute of Millets Research Feb 2018 ([https://www.millets.res.in/pub/2018/Nutricereals for Nutritional.pdf](https://www.millets.res.in/pub/2018/Nutricereals%20for%20Nutritional.pdf))
9. Kane-Potaka et al., Assessing Millets & Sorghum Consumption Behaviour in Urban India: A Large-Scale Survey, Frontiers in Sustainable Food Systems, Aug 2021 (<https://www.frontiersin.org/articles/10.3389/fsufs.2021.680777/full>)
10. Gill et al. Dietary Fibre in Gastrointestinal Health & Disease, Nature Reviews Gastroenterology & Hepatology 18, 101-116 (2021) (<https://www.nature.com/articles/s41575-020-00375-4>)
11. Pandey et al. Urbanization and Food Consumption in India, Scientific Reports, 10: 17241 (2020) (<https://www.nature.com/articles/s41598-020-73313-8/metrics>)