

Good Nutrition and Healthy Gastrointestinal Tract (GIT) for Sustainable Healthy Living

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ABSTRACT

All metabolic processes take place in the Gastrointestinal Tract (GIT) or digestive system of every human being and animal. Digestion, absorption and utilization of food nutrients is a natural phenomenon God the creator installed in the body system of every living organism to sustain life. This important phenomenon takes place in the GIT. The whole process usually starts from the oral cavity (chewing to reduce particle size of solid substances), through the oesophagus (passage) to the stomach for chemical degradation of ingested substance, absorption of nutrients takes place in the small intestine, the large intestine forms stool from undigested substances, store stool (waste) in the rectum and pushed out of the body through the anus. These organs performs specific functions to sustain life, disorder in any part affects the functioning of the other and the general well-being of the affected individual. Good nutrition is an aspect of healthy living but without a functioning GIT. For instance, if an individual consumes food regularly and is not able produce and excrete stool normally, it is a sign of poor health condition that requires urgent medical attention. Regular consumption of food substances couple with constant excretion of feces from the human body is a good sign of healthy living. Organs along the GIT, like the biliary organs (liver, pancreas, and gallbladder) perform detoxification function and also assist the GIT in digestive functions to sustain life. The role of the GIT in health maintenance cannot be overemphasized; therefore, there is need for more observational and clinical research in this area, and more urgently, a resident nutritionist and gastroenterologist in Primary Health Care (PHC) centers across the globe to ensure healthy GIT for a sustainable healthy living.

INTRODUCTION

The Gastro Intestinal Tract (GIT) plays a vital role in the physical and chemical breakdown of solid food substances and utilization of food nutrients in the body of every living organism. It is a very important system in the body, composed of several parts; mouth (oral cavity), oesophagus, stomach, small intestine, and large intestine (colon, rectus & anus). These human parts perform specific functions in nutrient catabolism (digestion and absorption) and anabolism (synthesis of non-essential nutrients). It is not an exaggeration that any disorder

affecting proper breakdown, absorption and utilization of food nutrients in the body will affect the general well-being of an individual. Naturally, all organisms must obtain nutrients from the environment (food intake), metabolize (digest and absorb) and utilize (make compounds and tissues) these food nutrients in the GIT in order to sustain life. However, the goal 3 of 2015 United Nations (UN) Sustainable Development Goals (SDGs) is targeted to 'Ensuring healthy lives and promoting well-being at all ages'. Unfortunately, the objectives of this goal is narrowed to only providing medical consumable and physical facilities (childhood immunization, access to health facilities & maternal care) and, there seems to be no consideration for engaging qualified gastroenterologist and Nutritionist in the primary health care (PHC) system across the globe to ensure a more sustainable well-being for all. Services of these professionals are highly needed in public and private health care facilities, especially those located in the developing countries. This is because, targeting to promote general well-being for all by 2030 will involve medical (physical & human facilities), lifestyle (nutrition and exercise) and environmental (boost in agricultural products) factors. The interconnectedness of the SDGs 2 'zero hunger' and 3 'good health' is obvious, when food is available, accessible and affordable to all, adequate utilization of food nutrients is ensured to prevent poor health status.

ORGANS OF THE GIT AND THEIR FUNCTIONS

Oral cavity/mouth

The oral cavity contains digestive enzymes that either facilitate the break-down of solid substances (foods and drug) or hinder the penetration of harmful substances, especially from drugs into the body. Every solid substance ingested into the body first undergo the process of chewing, this specific function is performed by the teeth. When there is tooth decay (dental caries), it will affect this process while restricting food intake. The gum holds the teeth, when the gum is inflamed (gingivitis), it will definitely affect the function of the teeth. The salivary gland is also found in the mouth that produces the moist substance (saliva) that aid in softening and swallowing of chewed solid substances. Any disorder effecting secretion of saliva in the oral cavity will directly affect food intake. The tongue helps to roll down solid food substances into the oesophagus, what if the tongue is inflamed (glossitis) and not able to perform this specific role, that means that the affected individual will remain only on liquid diet as long as the disorder is corrected.

Oesophagus

The oesophagus sphincter performs the function of a lift or transporter in the body by lifting/ transporting food and liquid substances from the oral cavity to the stomach. When inflamed (oesophagitis), and is not able to perform this specific function, this may result to 'hold-up' of food and liquid in the oral cavity, vomiting, or other health threatening disorders.

Stomach

The stomach releases gastric juices containing hydrochloric acid and specific enzymes that initiate the breakdown of food substances. Digestion is the chemical breakdown of food nutrients (carbohydrate, protein, and fat) that takes place in the stomach. There are disorders (dumping syndrome and gastritis) that can delay or hinder the stomach from performing this important function. This will eventually result to accumulation of undigested food substances in the body, when this occurs will definitely affect food intake.

Small intestine

This organ is made up three important sections the upper (duodenum), middle (jejunum) and the lower (ileum). The process of absorption (uptake) of food nutrients into the various part of the body for use and maintenance, takes place in the small intestine with the aid of body secretions, co-factors (minerals) or/and co-enzymes (vitamins). Disorders such as peptic ulcer and celiac disease can either disrupt or hinder the small intestine from performing this specific function in the body. This will definitely affect proper utilization of food nutrient in the body of the affected individual, resulting to weight loss, brain damage and other complications.

Large intestine (colon, rectum and anus)

Undigested food substances are converted to stool in the large intestine by the aid of microbes present in the colon. Certain disorders, like ulcerative colitis (UC), cancer and diverticulitis can affect this important process, resulting to accumulation of waste in the body. The rectum is the lower part of the large intestine. Waste generated from nutrient metabolism in the large intestine is stored in the rectum and excreted from the body in form of feces through the anus during bowel movement. Disorders, such as internal and external hemorrhoids, abscesses, incontinence and cancer can disrupt or delay this process resulting to poor health condition.

Biliary organs

The organs along the GIT (liver, pancreas and gall bladder), secretes certain important substances (insulin, trypsin, bile, chymotrypsin) into the stomach, that helps in proper digestion of food nutrients and also help in detoxification and excretion of waste from the body. Urea, a toxic substance in protein foods is detoxified in the liver and excreted in urine through the urinary organs. When the liver is inflamed (hepatitis) and is not able to perform this important functions, will result to several life threatening disorders including retention of nitrogen (Oedema). This is just a tip of the icebergs on the importance of the GIT and the organs along the GIT in sustaining health and life.

CONCLUSION

The role of the GIT and biliary organs in nutrient metabolism, utilization and maintenance of health cannot be overemphasized. People are encouraged to eat adequately, but be informed that right intake of food nutrients is incomplete without a healthy GIT. Healthy eating lifestyle can only be effective when people have healthy gastrointestinal tract. Targeting good health and well-being for all ages must definitely involve maintaining healthy GIT for all.

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