

agMOOCs

Diet in GI disorders - constipation

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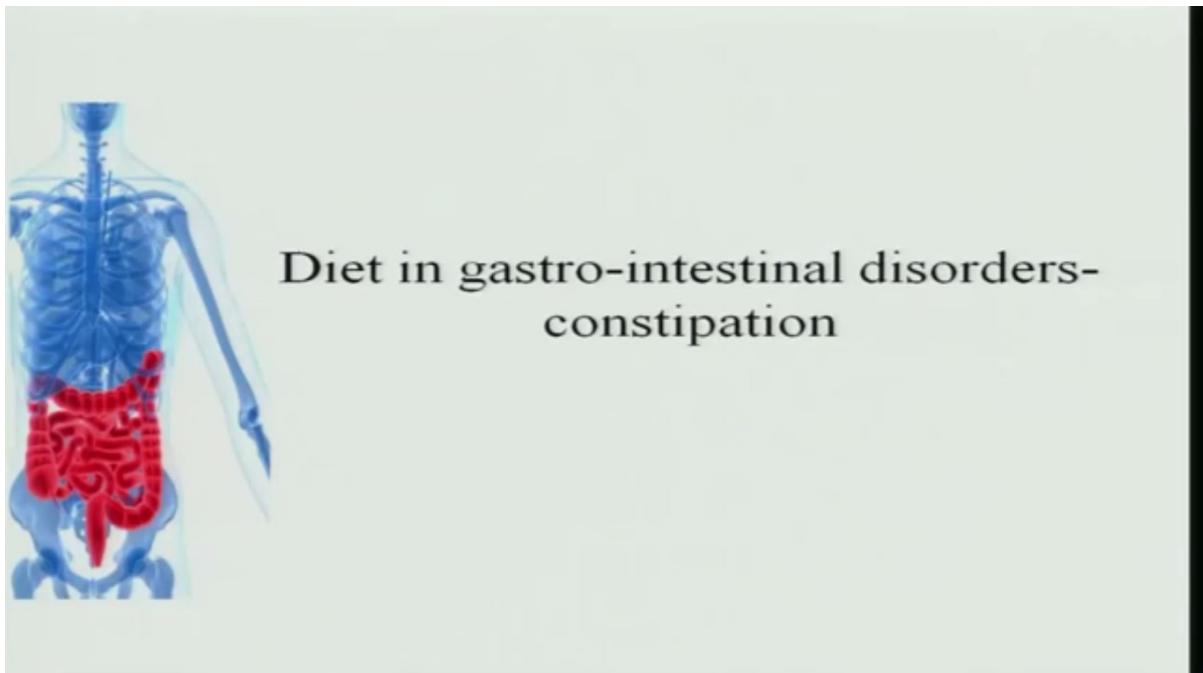
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Diet in GI disorders – constipation

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Welcome back to the today's class.

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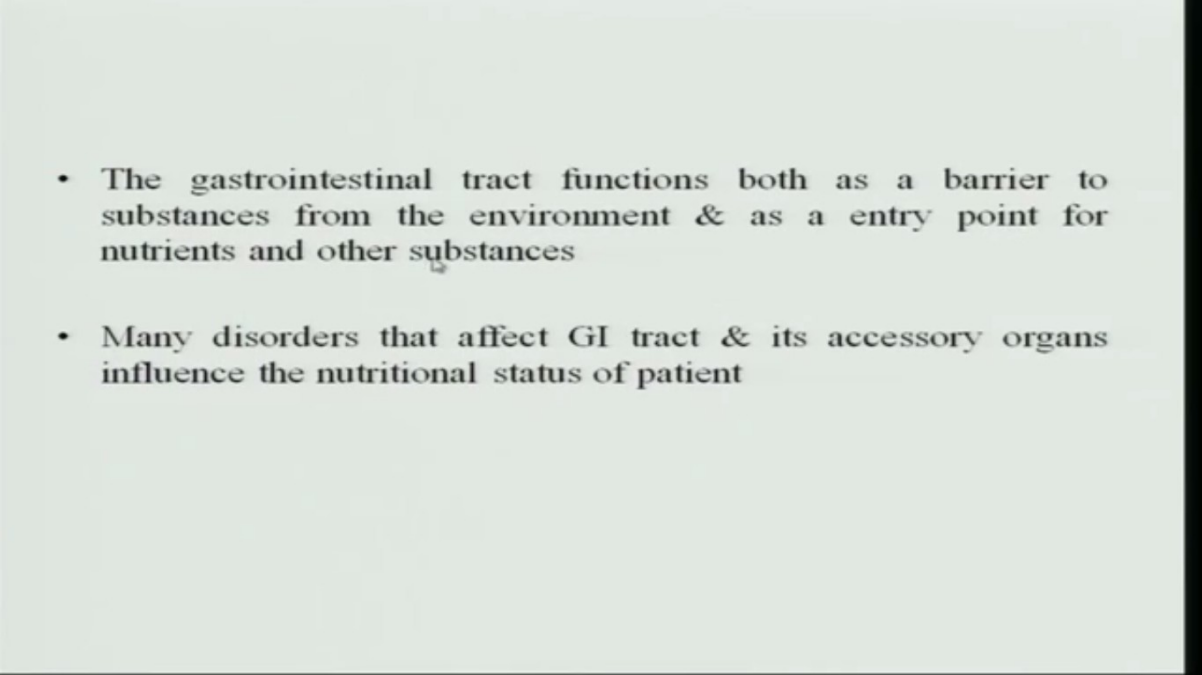


And diet therapy as we know is such an important area of study where we can modify the diets depending upon the type of disorder the body has, and a little modification in the diet

will relieve the symptoms of the various diseases. And last two classes, we have seen the disorders of lung, and also how the diet can be modified during fevers.

And today, let us see the diet that has to be taken in gastrointestinal disorders, especially, we will talk about pre-constipation and diarrhoea. So let us start with the constipation today.

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- The gastrointestinal tract functions both as a barrier to substances from the environment & as a entry point for nutrients and other substances
 - Many disorders that affect GI tract & its accessory organs influence the nutritional status of patient

So, generally, the gastrointestinal tract functions both as a barrier to the substances from the environment and as an entry point for the nutrients and other substances. So many disorders that affect the gastrointestinal tract and its accessory organs influence the nutritional status of the subject.

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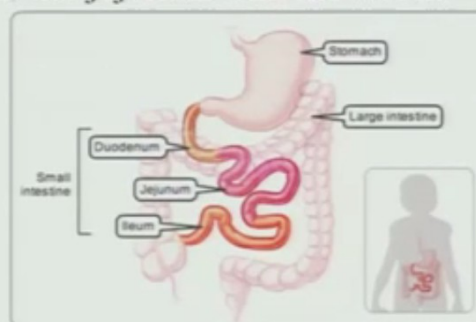
Parts of GI tract

Esophagus

Stomach

Small intestine including duodenum, the jejunum and the ileum

Large intestine includes cecum, colon, rectum & anal canal



Now parts of the gastrointestinal tract, of course, we have seen in the digestive tract what are the parts. Let us revise again. It has esophagus, stomach, then small intestine including the three parts of the small intestine that is duodenum, jejunum and ileum, and large intestine including cecum, colon, rectum and anal canal.

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Digestive action

- **Mechanical digestion is the physical breaking down of food into smaller pieces**
- **Chemical digestion involves the splitting of complex molecules into simpler form**

Now the digestive action also we have seen that it is a mechanical digestion and where we chew the foods and break it down into different small, smaller pieces and chemical digestion, which involves the splitting of the complex molecules into simpler form.

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Dietary factors associated with ailment of G.I tract

- Acidity
- Inadequate fiber
- Fat
- Gluten substances
- Lactose

Now dietary factors that are associated with ailments of gastrointestinal tract. One is acidity, inadequate fiber, fat, gluten substances and lactose. Any of these can cause disorder in the gastrointestinal tract. If there is acidity, the higher acidity will cause the ulcers in the parts of the stomach or it can be in the duodenum. And if there is inadequate fiber, then the result, it results in constipation. Then fat also may result in fatty stools or increase in the obesity.

And gluten substances, sometimes the gluten allergy occurs in individuals who cannot tolerate gluten. Therefore, their gastrointestinal system is irritated, and they start having diarrhoea, and thereby the substances are not absorbed. The nutrients are not absorbed, and they go into various deficiency disorders of nutrients. Now lactose intolerance also occurs. Some children cannot tolerate milk. Whenever milk is given, they have gastric distension that is they have bloating, diarrhoea and so on. So that also causes a loss of nutrients.

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General aspects of digestion of food and gastric acidity

- Foods have a pH of 5-7
- pH of HCl in stomach is less than 2
- Citric foods have a pH of 3.5 or more
- Therefore no food is acidic enough to change the acidity of the contents of stomach
- Patients suffering from acidity should not avoid Vitamin C rich foods

Now general aspects of digestion of food. Foods have, generally, the pH of food is 5 to 7, whereas when you see the pH of HCl in the stomach, I told you it is 2. So citric acid have the pH of 3.5. Therefore, when you compare to the 2, acidity of two in the stomach, you will see the others have little acidity. That means no food is acidic enough to change the acidity of the contents of stomach. So patients suffering from acidity need not avoid foods rich in vitamin C and other foods.

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- Protein rich foods neutralize gastric acid
- Milk is the choice of food to treat acidity
- Fat reduces acid production and decreases motility
- Addition of cream to milk is used to treat peptic ulcer
- Use cream in moderate amounts to avoid atherosclerosis
- Stimulants which increase the production of gastric acid should be avoided

Now protein rich foods can neutralize the gastric acid, and milk is the choice for treating acidity, because it has enough amount of protein and the calcium. And fat reduces the acid

production because it can slow down the production of acid and decrease the motility of the gastrointestinal tract.


Now addition of cream to milk also is used to treat the peptic ulcer. Now you can use cream in moderate amounts because if you start using excess of cream, again, the fat from the cream can enter into the blood and cause atherosclerosis. So to avoid creamy foods, you can use creamy foods, but at moderate amounts.

Then stimulants, which increase the production of gastric acid, should be avoided. Whichever food when the moment the food enters into the stomach, there are certain foods which increase the production of acid. Such foods should be avoided.

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Constipation

- It refers to a decrease in a person's normal frequency of defecation, especially if the stool is hard, dry or difficult to expel



Now one important disorder of the gastrointestinal system is constipation. So it is a decrease in the person's normal frequency of defecation. So, generally, there are people who have defecation once in two days that becomes a normal, but if the stool defecation does not occur for more than three days, then you call it as a constipation. So the stool here becomes dry, hard, and it becomes very difficult to expel the stools.

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Infrequent or insufficient emptying of bowel leads to

- Malaise
- Headache
- Coated tongue
- Foul breath
- Lack of appetite

These symptoms disappear after evacuation

So this insufficient and infrequent emptying of the bowels, it leads to malaise. Malaise is there is muscle wastage and headache, coated tongue. You have a foul breath, lack of appetite. Because there is no normal excretion of the faeces, the residue remains in the large intestine, and it keeps on becoming the more and more water is absorbed from the residue that is in the large intestine, the stools become harder and harder, and they become pellet like, and they cannot be expelled. So you have all these symptoms when you have constipation. So once the stools are evacuated, then all these symptoms will disappear.

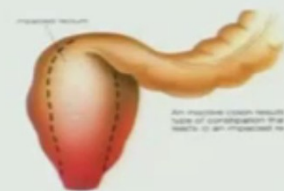
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Atonic constipation

- Often called as LAZY BOWEL
- Inactive colon which has loss of muscle tone in the intestinal walls
- Observed in very old people

Diet

- 800 gm of fruits & vegetable (for normal bowel)
- Vitamin B supplements
- Moderate amount of bran
- Avoid tea

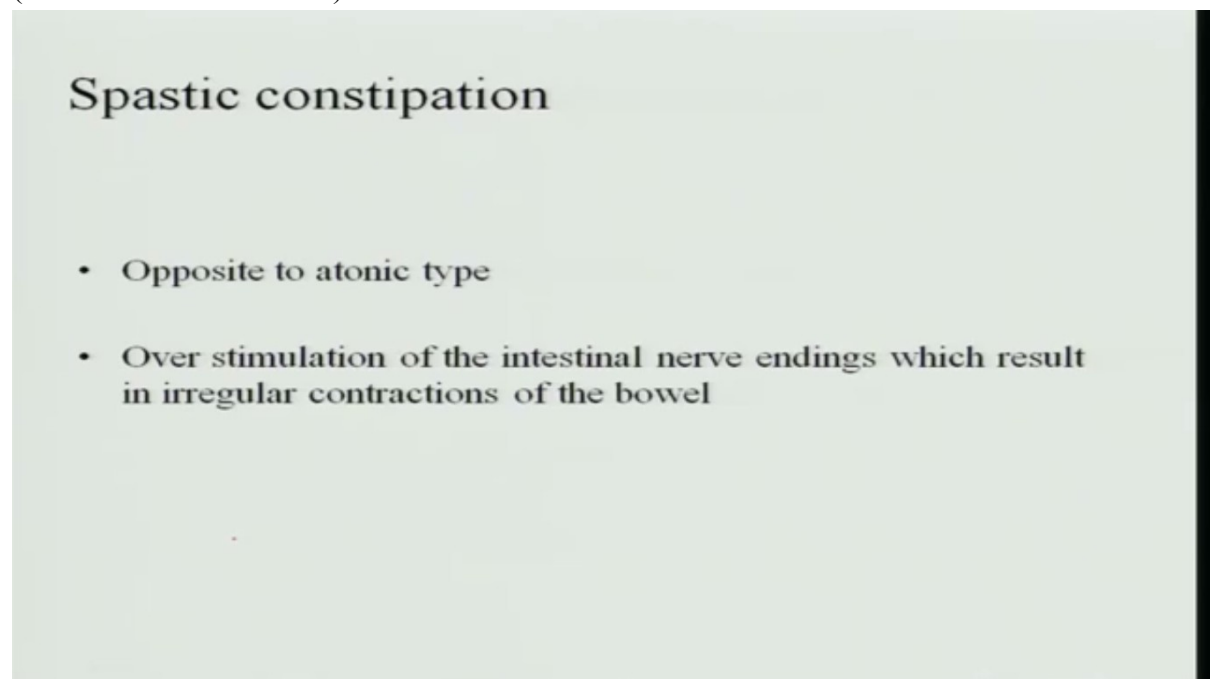


Now there are two types of constipation. One is Atonic constipation. The name itself says atonic. There is no tone or decreased muscle tone. So this is often called as lazy bowel. So the

colon becomes inactive that means there is loss of muscle tone in the intestinal walls. So this generally occurs in aged people because naturally as the aging occurs, the toning of the muscles decrease. So contraction and relaxation becomes much slower.

So diet for such disorder is you take 800 grams of fruits and vegetables for normal bowel because fruits and vegetables are rich in fiber and they contain pectin in it. So it makes the stool bulky and softer so that it evacuates. Then supplement B Complex vitamins because they start becoming deficient in B Complex vitamins, and moderate amount of bran should be given. Bran again is a fiber which will increase the bulk of the stool. Then tea and coffee should be avoided because they start increasing the acidity and they also suppress the appetite of an individual.

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There is another type of constipation called Spastic constipation. So this is just opposite to the atonic type. Here over stimulation of the intestinal nerve endings occur, which results in irregular contractions of the bowel. It's they are like spasms. There -- there is no regular contraction, but the contractions occur in spasms. Therefore, they become irregular. Again, there is insufficient evacuation of the bowels. This is spastic constipation.

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Causes

- Excessive use of cathartics
- Condiments & tobacco
- Eating very coarse foods
- Too much tea, coffee & alcohol



Diet

- Smooth, non-irritating foods, vegetables & fruit juices are allowed in limited amounts
- Low fiber diet

Now the causes of constipation are generally it is excessive use of cathartics. What are cathartics? They are substances which help in evacuating or they are otherwise called as laxatives. They loosen the bowels and help in evacuation of bowels, and if there is abuse of these cathartics, then the person gets used to the cathartics and whenever the person does not take cathartic, then they start having constipation.

Then excessive use of condiments and tobacco. Then here the muscle tone is changed when you use excess of condiments and tobacco. Then eating very coarse foods because it becomes very difficult for digestion. At the same time, the bulk becomes so much that evacuation become difficult. Then too much of coffee, alcohol and tea will cause the peristaltic moment change.

Now diet should be smooth, non-irritating, and it should be full of vegetables and fruit juices. So these will help in increasing the bulk as well as the softness of stool and help in evacuation. Then you should give low fiber diet.

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Keys to over come constipation

- Increasing the fiber in the diet
- Adequate amount of water
- Exercising regularly

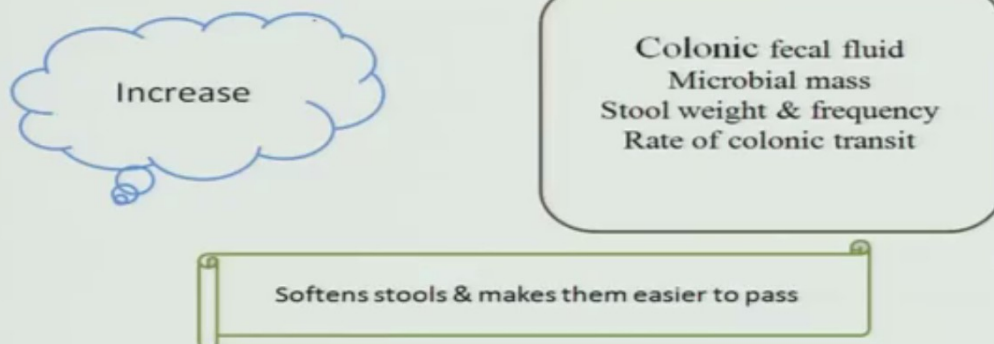
Now keys to overcome constipation. So increasing the fiber in the diet. Adequate amount of water has to be taken, and exercising regularly. And another important thing is attending to the nature's call. The moment the -- the body gives the signal of evacuation, some people have the habit of ignoring it because of some busy schedule or when there is no proper facility for evacuating. Under such times again constipation results.

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MNT

- Adequate soluble & insoluble fiber

Fiber:



Now Medical Nutrition Therapy is you give adequate amount of a soluble and insoluble fibers. So increase the fiber content, and this will help in increasing the colonic faecal fluid. The microbial mass also will increase. Stool weight and frequency, and rate of colonic transit will increase. So all these help in softening the stools and make them easier to pass.

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Diet

Recommended amount of fiber:

14g/ 1000kcal

Women- 25g/d

Men- 38g/d

Best: whole grains, fruits, vegetables legumes, seeds, nuts

brans & powdered fiber supplements when intake not sufficient

Now diet is the recommended amount of fiber, generally, the fiber is the most important nutrient to clear of the constipation. Recommended amount of fiber is 14 grams per 1,000 kilo calories and women require at least 25 grams per day and men 38 grams per day. So how do we get this fiber from the food? You generally use whole grains, fruits and vegetables, seeds, nuts, then powdered fiber supplements. We get supplements which are only fiber. So when we eat them, then the nutrition or the fiber is got from them.

So this is how we can relieve from constipation, and because constipation does not allow the person to concentrate on any work, and he can also lose different nutrients, the absorption power of the intestine also may change, therefore go into other deficiencies. Therefore, it is better to have a very good bowel evacuation every day.

Thank you.