agMOOCs

Diet during diarrhoea

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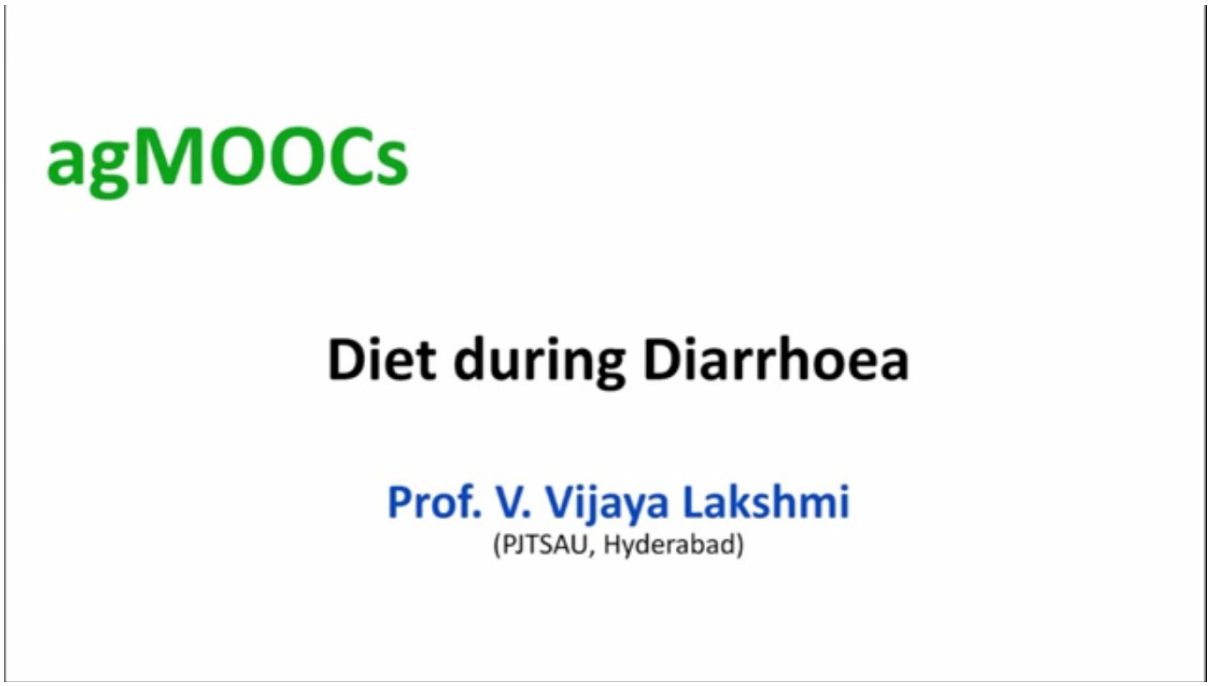

Welcome back. Last class we were seeing about the gastrointestinal tract disorders beginning from the constipation. So constipation becomes a very big problem. At the same time, the opposite diarrhoea also becomes a very big problem. So let us see what is diarrhoea? There are different types of diarrhoea and what type of diet we have to take?

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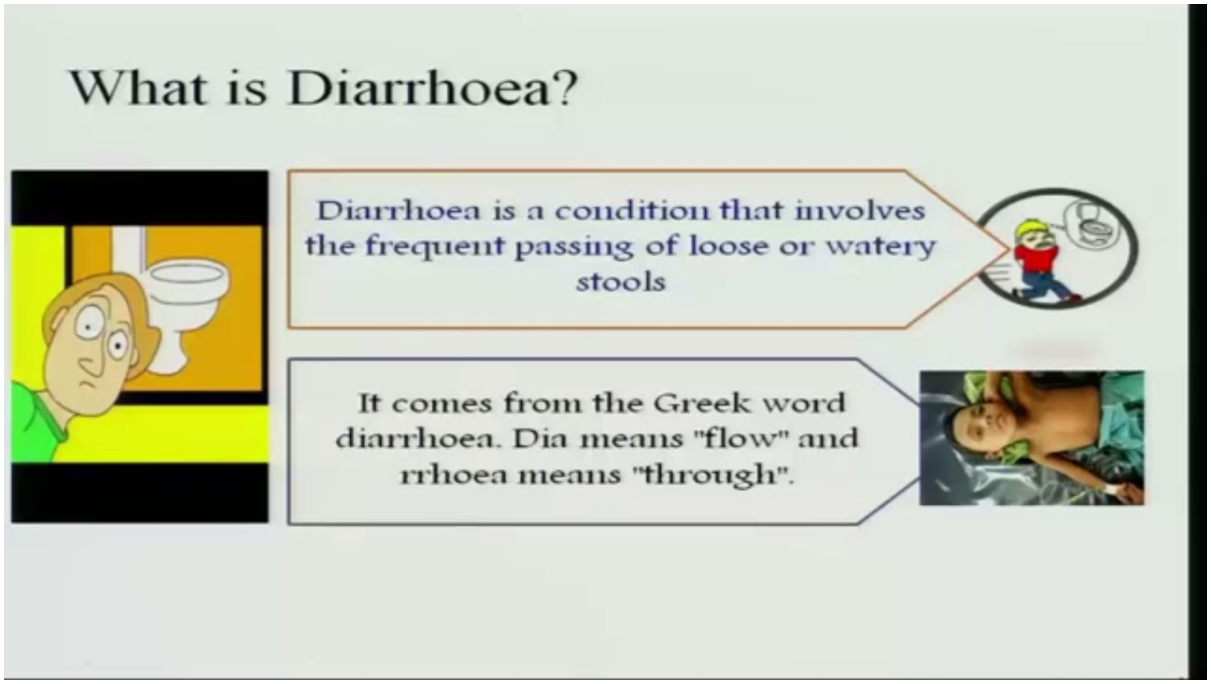

So diarrhoea is a condition, which involves frequent passing of loose and watery stools. You see it is just opposite to the constipation. It has come from the word diarrhoea means Dia means “flow” and rrhoea means “through.” So continuous, I mean, watery stools for more than three to four times is diarrhoea.

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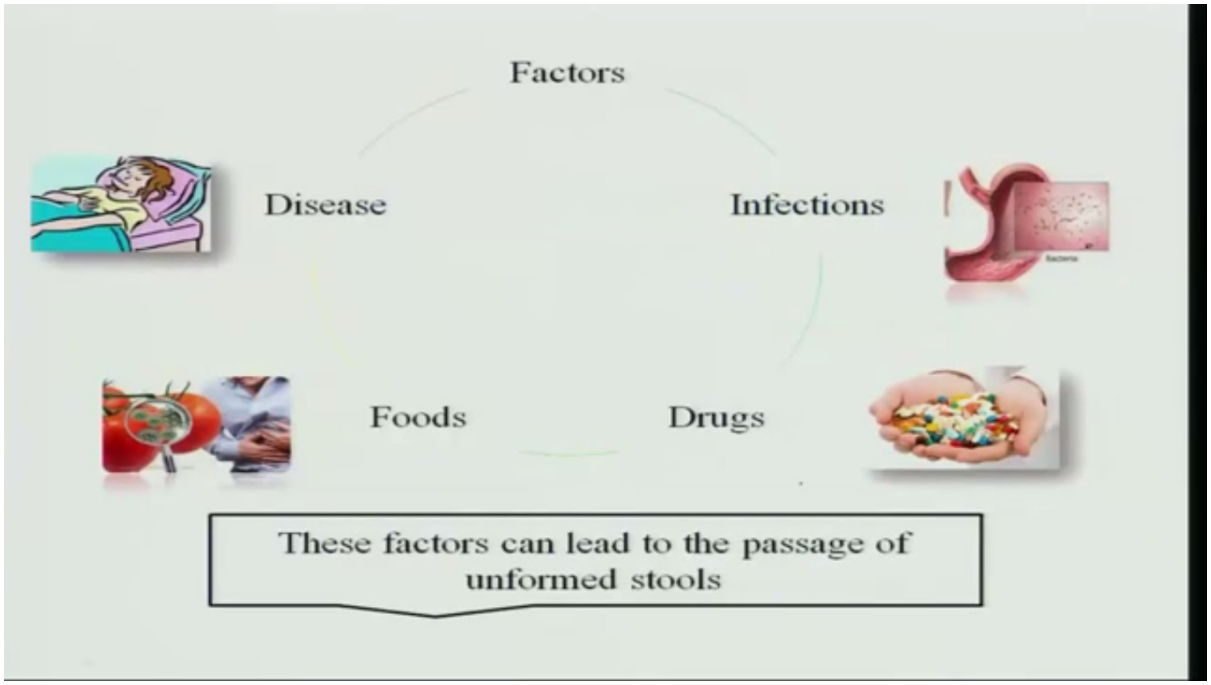

Now the factors are it may be because of infection. Any bacterial infection can cause diarrhoea or sometimes when we get antibiotics, the excess of antibiotics also leads to diarrhoea, and some of the foods when they are not, I mean, some if they are stale or some foods which we have the gastrointestinal tract is not able to tolerate, such foods also cause diarrhoea. And it is associated symptom along with some of the diseases. Sometimes fever.

Sometimes any other diseases may accompany with diarrhoea. So these factor can lead to passage of unformed stools. That means the transit time in the intestine is very low. The food passes very fast through the intestinal tract and it is thrown out.

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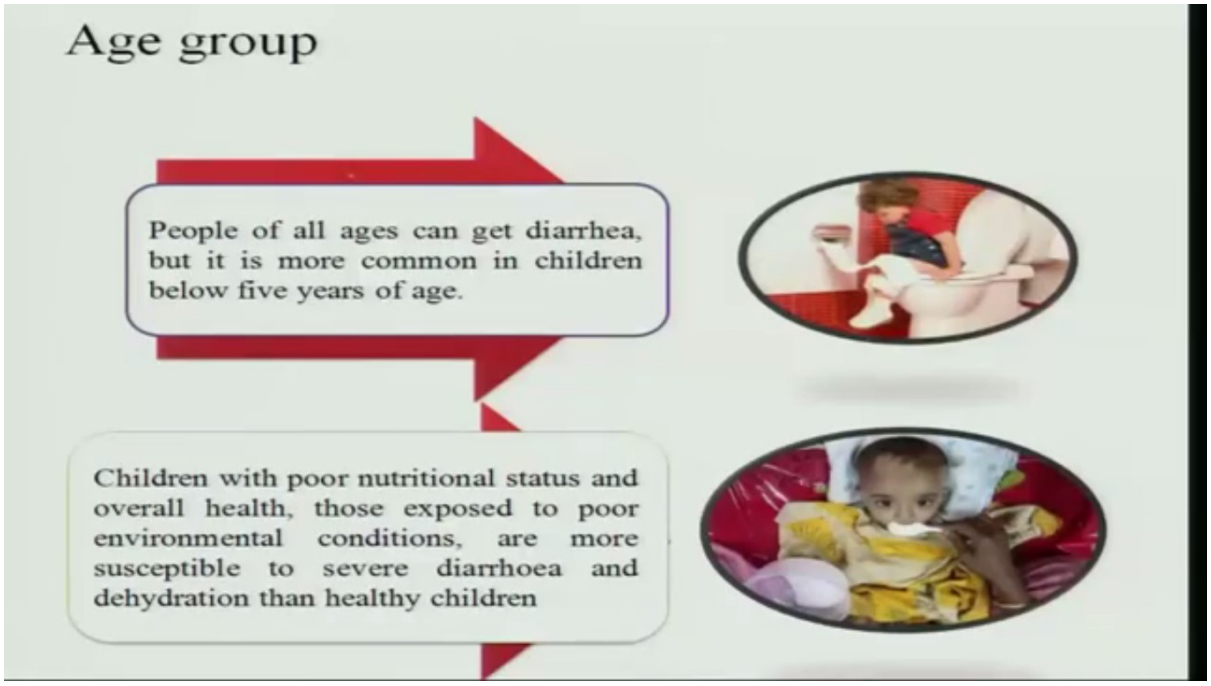

Now people of all ages can get diarrhoea, but it is most common in children of below five years of age. Now children with poor nutritional status and overall health which is poor, they are exposed to poor environmental conditions and are more susceptible to severe diarrhoea and it leads to dehydration. So poor environmental condition, poor sanitation, poor hygiene is the main cause for diarrhoea, which leads to infectious diarrhoea.

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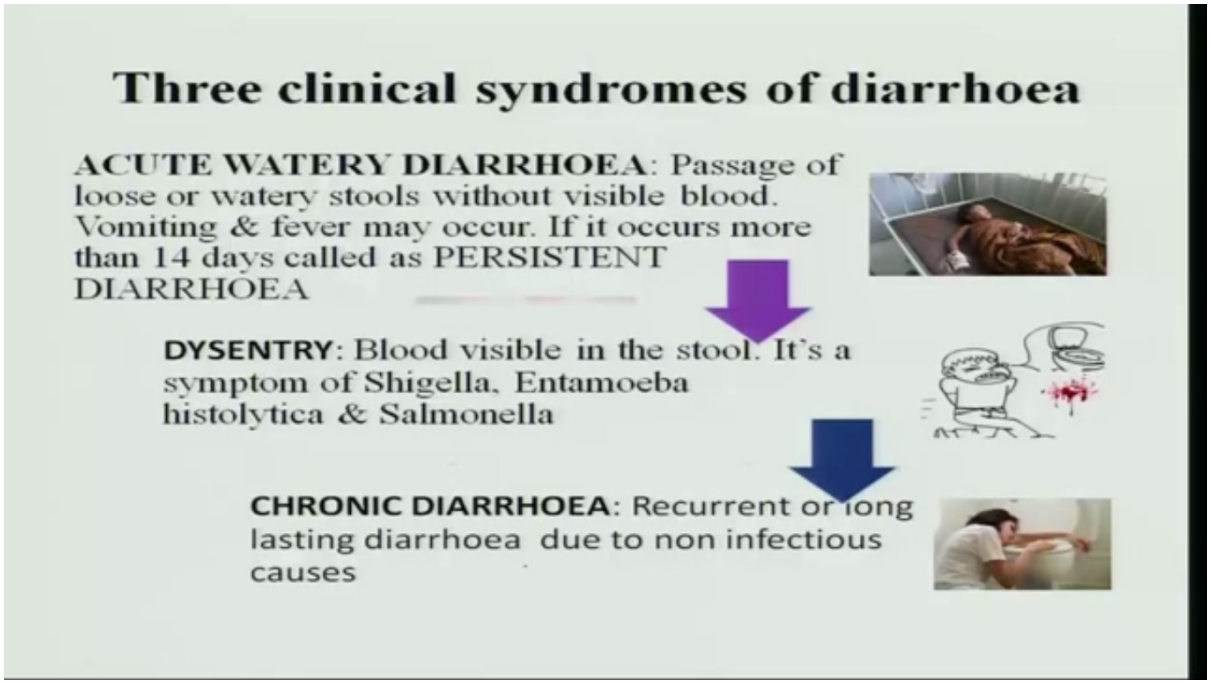

Now there are three clinical syndromes of diarrhoea. One is acute watery diarrhoea where the passage of loose and watery stools without any visible blood. So vomiting and fever also may occur, and if it occurs for more than 14 days, that is called as persistent diarrhoea. Then the person has to be hospitalized and given intravenous fluids.

Now dysentery is another type of diarrhoea where blood is visible along with the stool. It is a symptom of the Shigella, entamoeba histolytica and salmonella. These three organisms generally cause dysentery. And chronic diarrhoea, this is a recurrent and long lasting diarrhoea, and it is mostly non-infectious.

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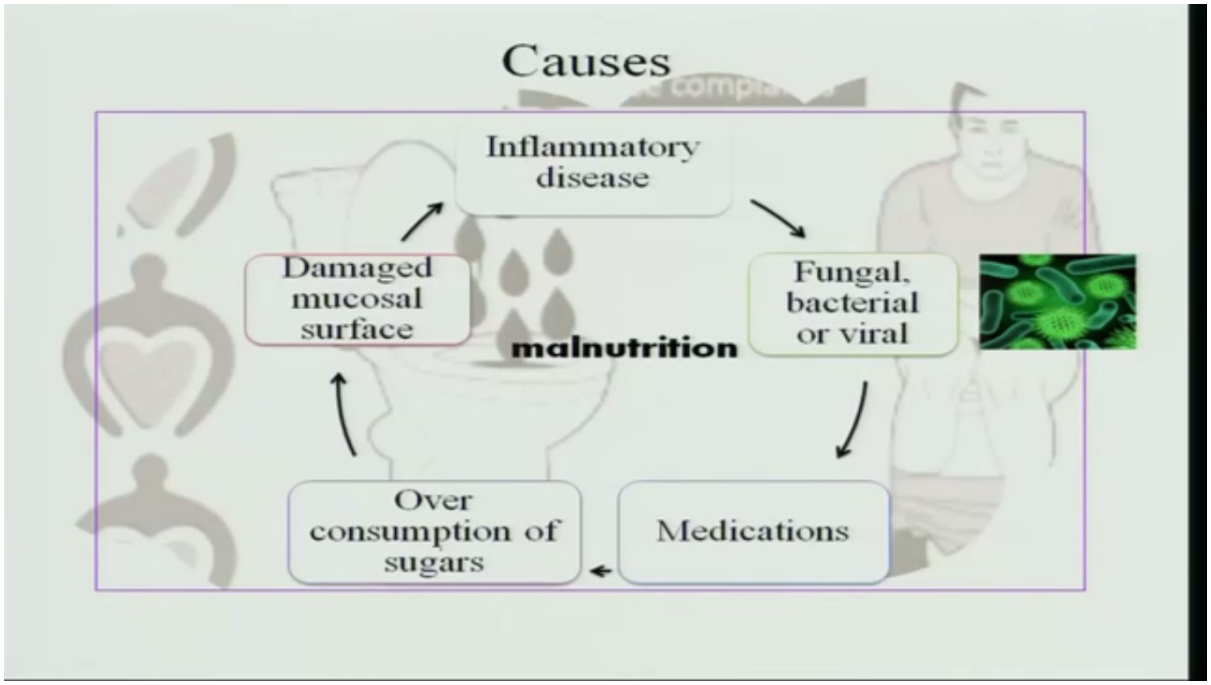

Now the causes of diarrhoea, these diarrhoea are inflammatory disease. If the intestines are inflamed, then also there is no proper assimilation and breakdown of the food. Therefore, it goes out. Then fungal, bacterial or viral. Medications.

Overconsumption of sugars also causes the diarrhoea because when you consume over amount of sugars, this because of the osmotic conditions, it pulls out all the water from the cells and diarrhoea occurs. Then whenever there is damaged mucosal surface in the intestine, this also causes diarrhoea.

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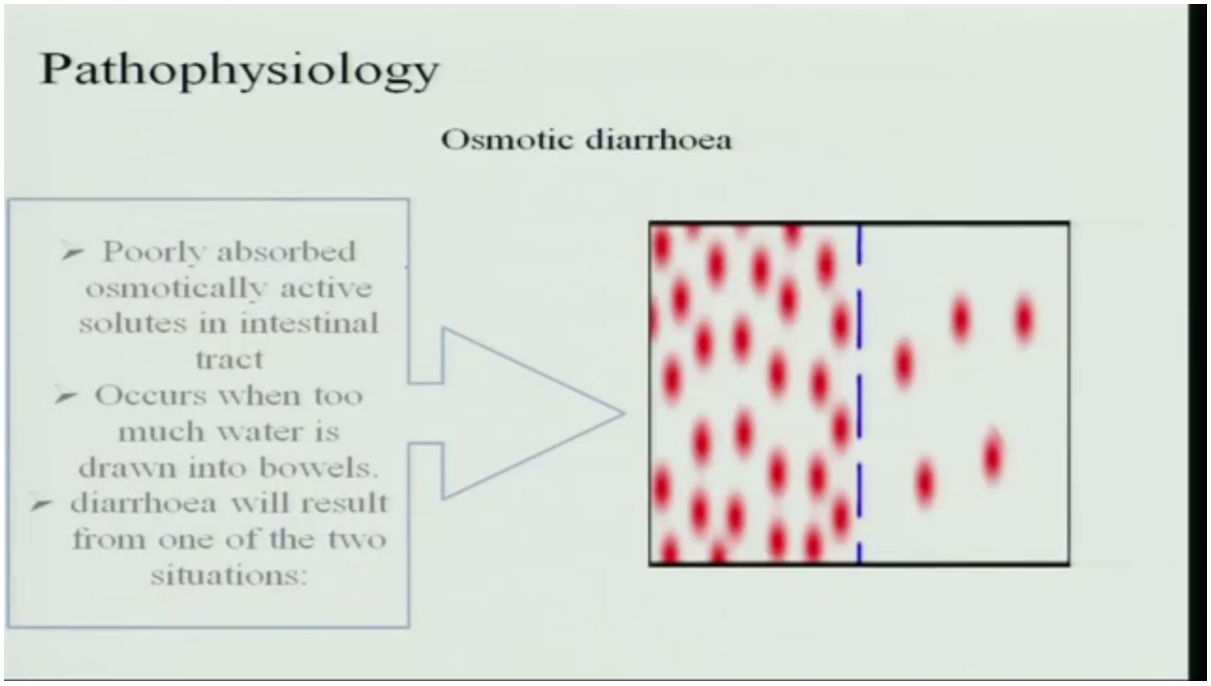

Now osmotic diarrhoea is poorly absorbed osmotically active solutions in the intestinal tract. So this occurs when too much of water is drawn into the intestinal lumen and diarrhoea will result with one or two situations.

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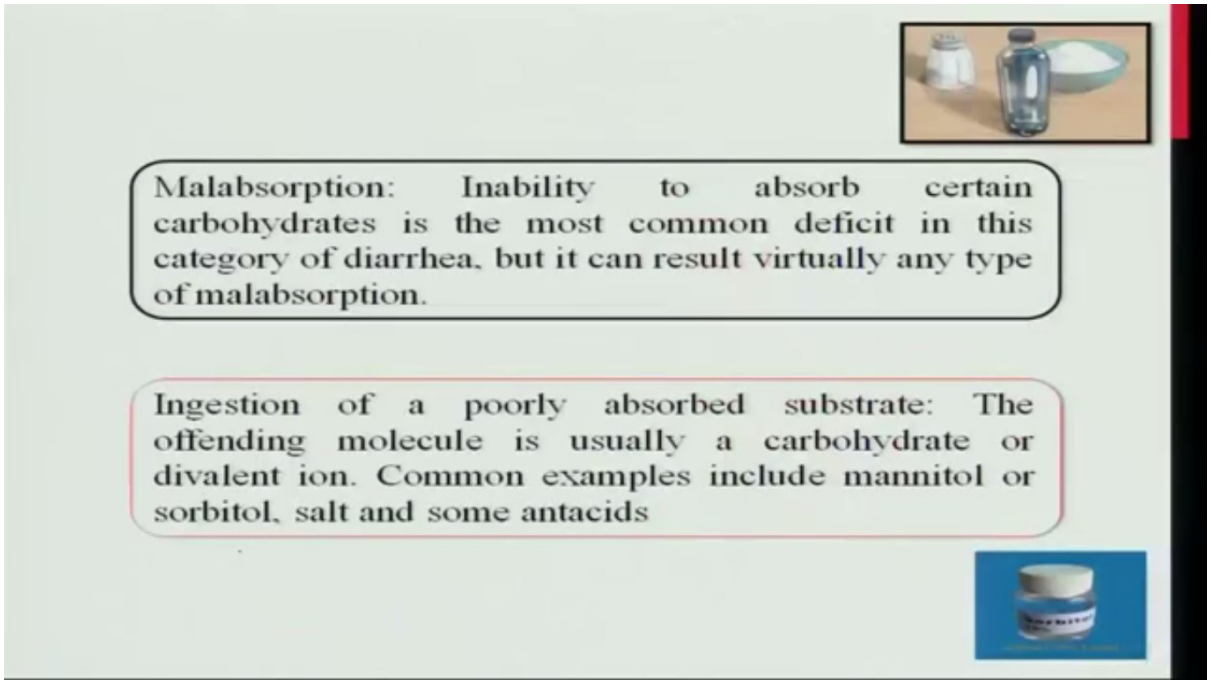

Malabsorption, so when there is some difficulty in the mucous membrane of the intestines, there is the nutrients will not be absorbed. So the -- especially malabsorption of carbohydrates, it is the most common deficit in category of diarrhoea. So it can result in malabsorption of carbohydrates.

Then ingestion of poor reabsorbed substrate. So usually a carbohydrate or a divalent ion, it is -- that is the mannitol, sorbitol, salt and some antacids, when they are poorly absorbed also they attract more water into the lumen and cause diarrhoea.

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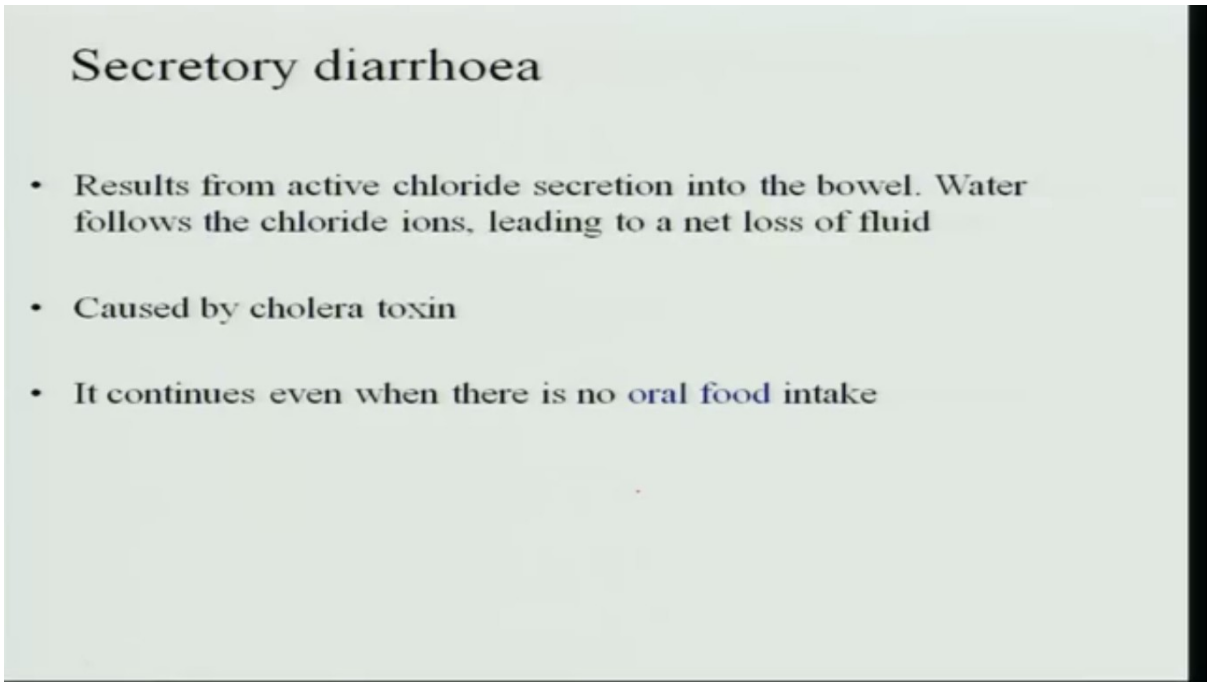

Then there is another diarrhoea called Secretory diarrhoea. This results from the active chloride secretion into the bowel. So this chloride secretion, it again it draws out more water and leading to a net loss of fluid. This generally happens in the disease which is called cholera. So when the toxins of cholera are produced, it pulls out all the waters from the cell and then it clears off from the intestines. So it continues even if there is no food intake during cholera, whatever water is present in the body cells is just drawn out and then evacuated from the body. So cholera leads to faster dehydration.

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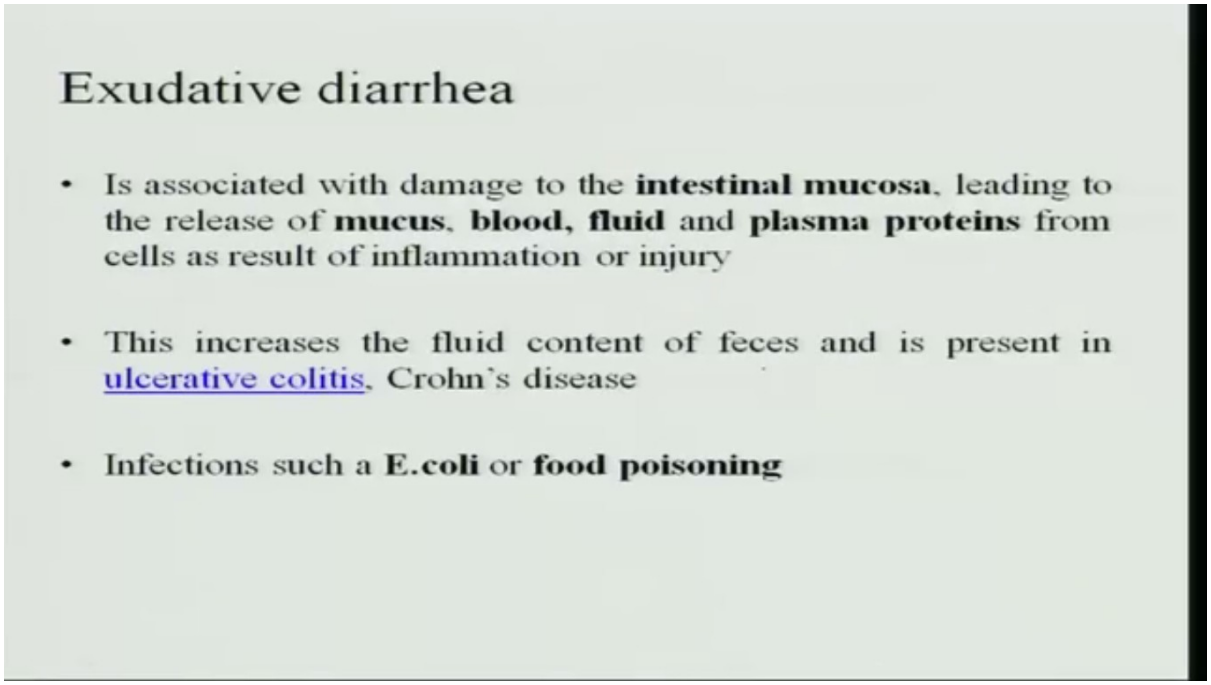

Exudative diarrhoea is another type of diarrhoea. It is caused because of intestinal mucosal damage. So there is a release of mucus, blood, fluid, and plasma proteins from the cells of the lining of the mucosa and results in inflammation or injury. So this increases the content of feces because you have mucous, blood, fluid, and plasma proteins and leads to ulcerative colitis whenever there is a disease called Crohn's disease. So this Crohn's disease is again the inflammation of the entire intestinal wall. So ulcerative colitis is wherever the intestine some places there is ulcers. So all these are lost through the faeces. So infections such as E.coli or whenever there is food poisoning, all these type cause exudative diarrhoea.

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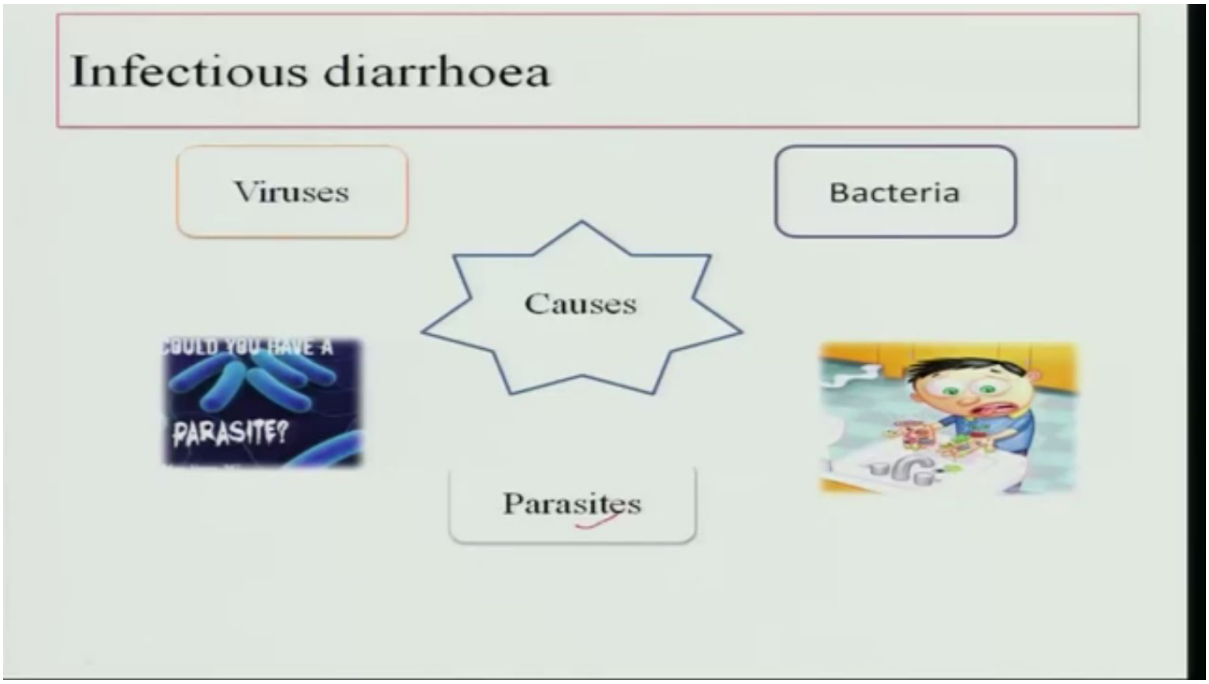

Then infectious diarrhoea is generally caused either by virus, bacteria or sometimes parasites.

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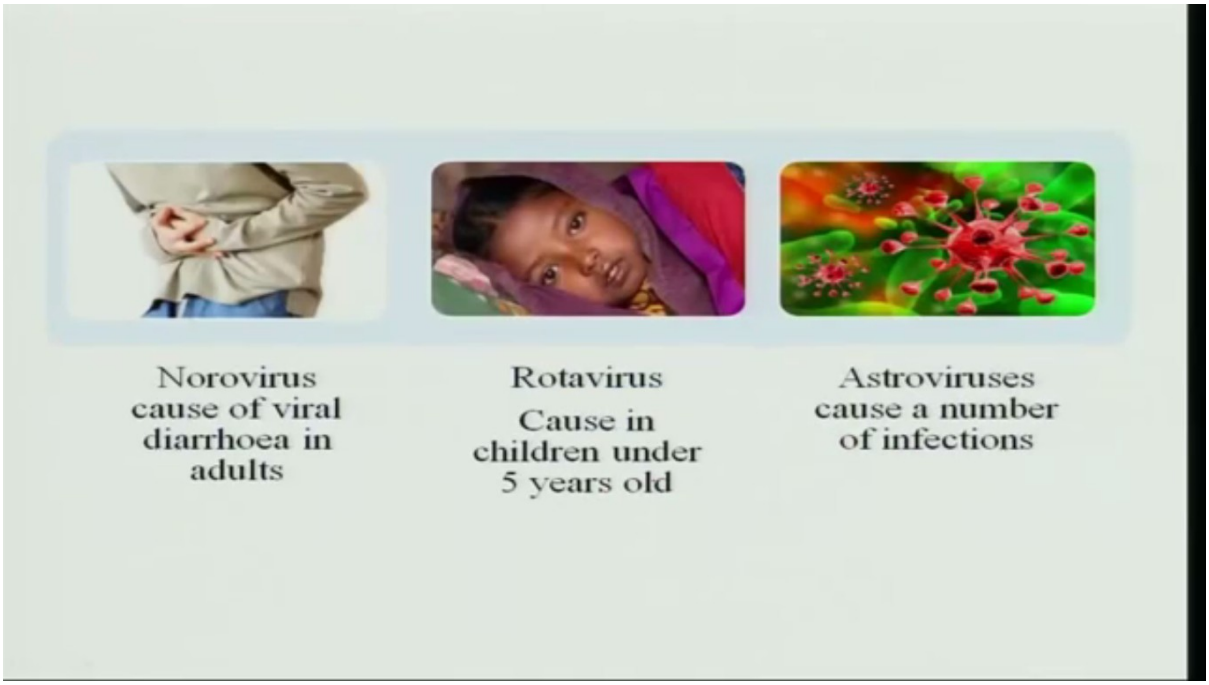

And there is a Norovirus cause for diarrhoea which is a viral diarrhoea. Then Rotavirus. Rotavirus is generally caused in children below five years of age. Then there is Astrovirus, which is caused because of a number of viruses and other infections.

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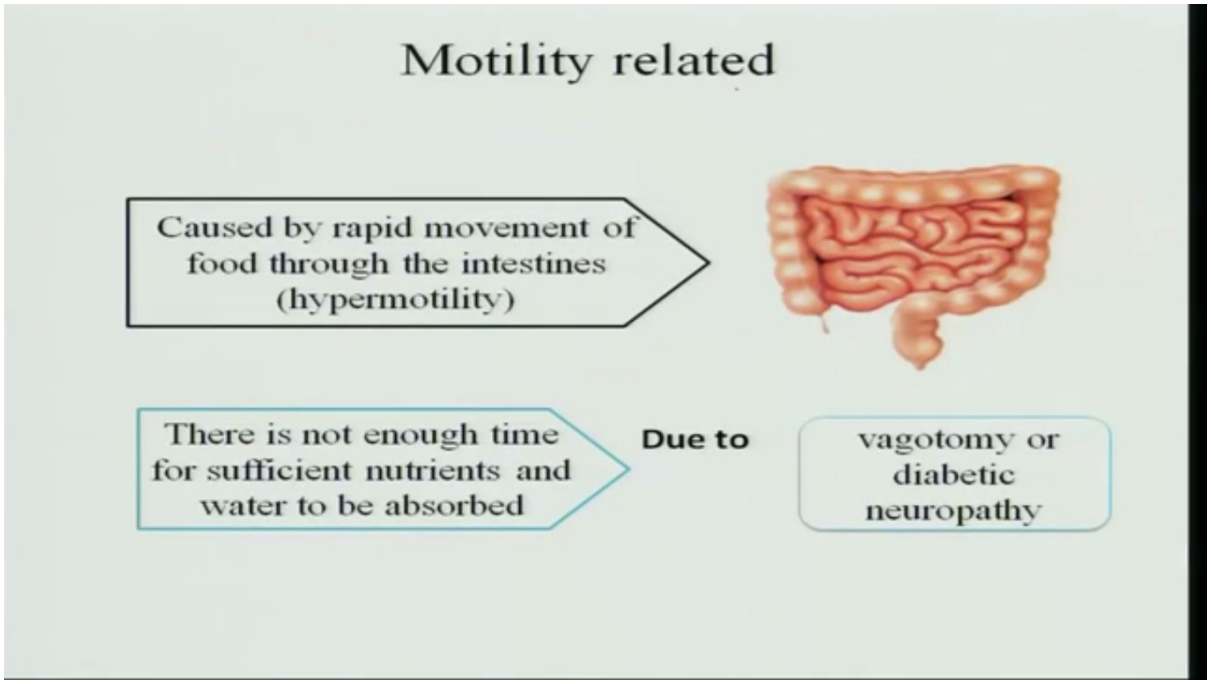

Motility related diarrhoea, this is related to the peristaltic movement of the intestines. So, and this is caused by the rapid movement of food through the intestines. Whenever the contractions are very fast, the food moves very fast through the intestines. So this cause because of hypermotility of the intestines.

So the food does not have enough time for breaking down or absorbing sufficient nutrients into the intestine. This generally occurs in conditions where vagotomy occurs. Vagotomy is the surgery whenever there is some surgery in the intestinal attract, the vagus nerve is sometimes cut off. So this vagotomy leads to the changes in the motility of the intestinal wall or during diabetic neuropathy. Neuropathy is a complication of diabetic. Therefore, whenever they have neuropathy, again it disturbs the motility of the intestinal walls.

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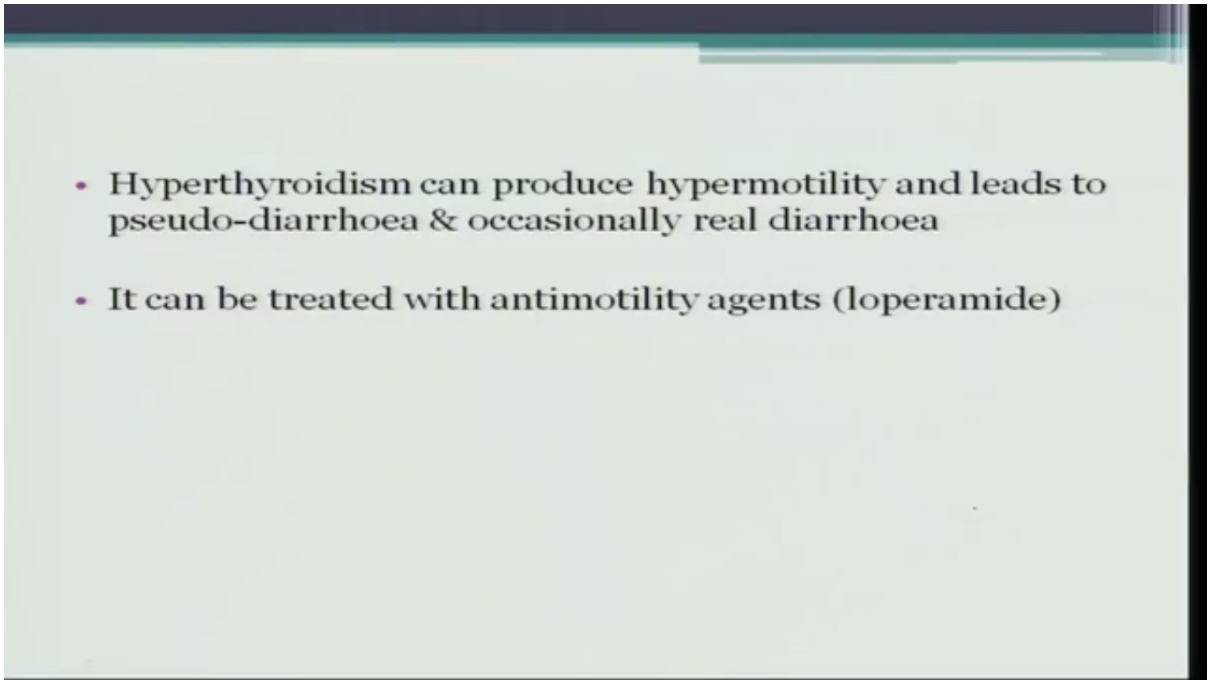

Then hyperthyroidism also can produce hypermotility and lead to pseudo-diarrhoea and occasionally real diarrhoea. So this type of motility related diarrhoea can be treated by antimotility agents like simple medicine like loperamide that means decreasing the motility of the intestines.

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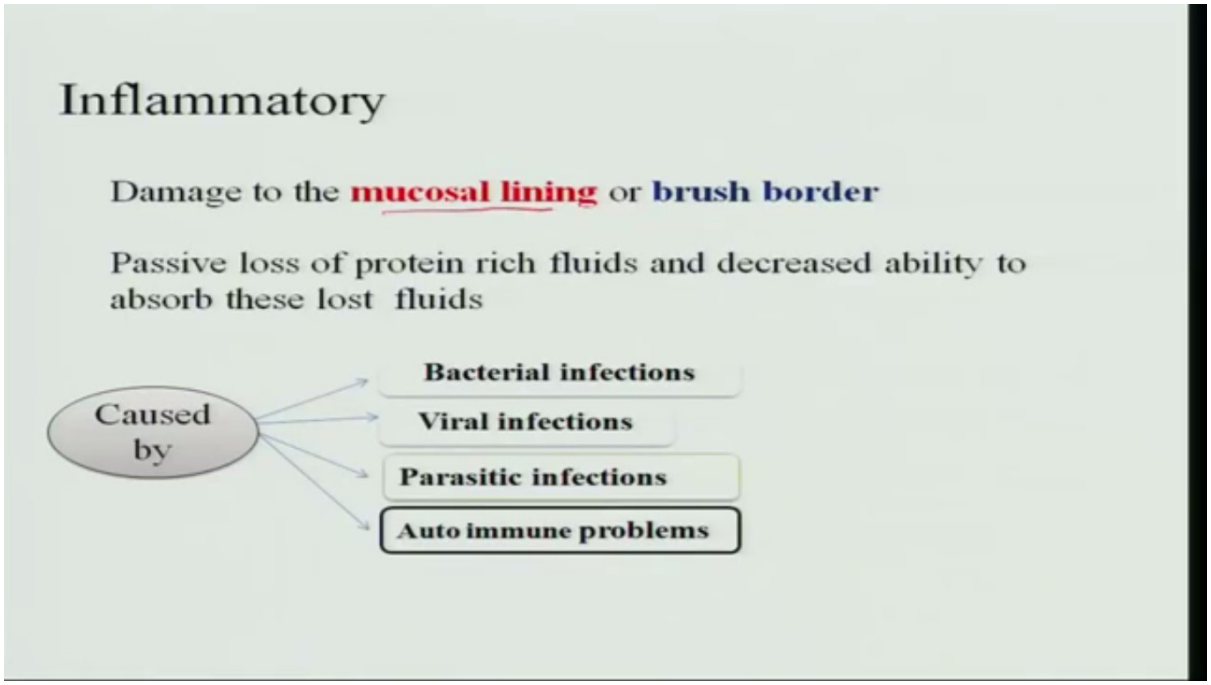

Then inflammatory diarrhoea is damage to the mucosal lining or the brush border. Last few classes I was telling about the villi. So these villi, they cause like a brush border in the intestines. So when this brush border is disturbed, then the mucosal lining is disturbed and the inflammation occurs.

So passive loss of protein rich fluids and decreased ability of absorption of these lost fluids. So caused by bacterial infection, viral infection, parasitic infection, and some autoimmune problems.

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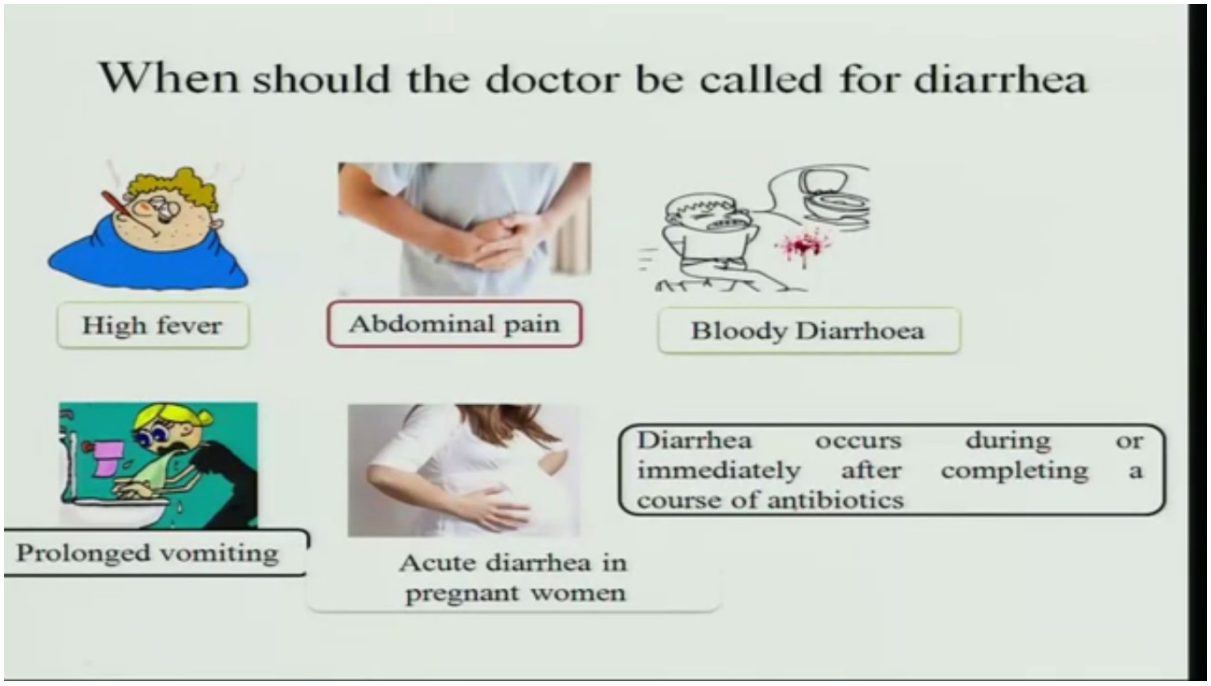

Now when should you see a doctor when you have a diarrhoea? Whenever there is high fever and it is not subsiding, then see a doctor and severe abdominal pain, then bloody diarrhoea, and prolonged vomiting, acute diarrhoea in pregnant women because pregnant woman cannot afford to have a long duration of a diarrhoea because their nutritional status will come down and affect the foetus.

So diarrhoea occurs during or immediately after completing a course of antibiotics. So the first episode of diarrhoea or second episode of diarrhoea, we should not take any medicines because there are some toxins or bacteria that are present in the stools. They have to be pushed out from the body. So body's natural mechanism of pushing out should not be obstructed. So after one or two days or 10 episodes of diarrhoea, then you can see the doctor.

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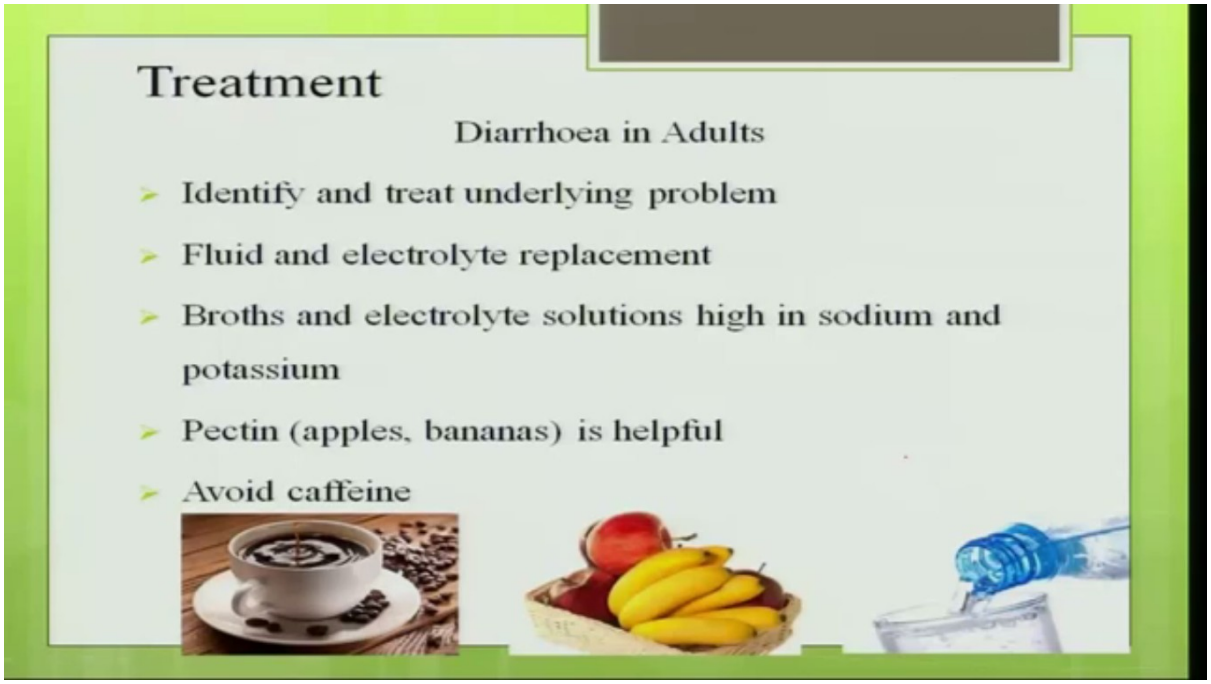

Then treatment, diarrhoea in adults, you identify and treat the underlying problem, what is -- we have seen the different types of diarrhoea. So we have to identify which type of diarrhoea and treat it properly.

Then replacement of fluids and electrolytes is very important because during diarrhoea lot of fluid from the body is evacuated, and there may be a disturbance in the fluid balance, electrolyte balance, therefore, which has to be met. Then broths and electrolyte solutions, which are high in sodium and potassium need to be given because the electrolytes which are -- so the main electrolytes sodium and potassium also are excreted along with the diarrhoea.

Then you can give fruits like apples and bananas, which are rich in pectin, because this pectin, it tries to bind the residue and makes the stool, I mean, solid. Then avoid caffeine because caffeine will again stimulate the motility of the intestines. Therefore, it is better to avoid caffeine.

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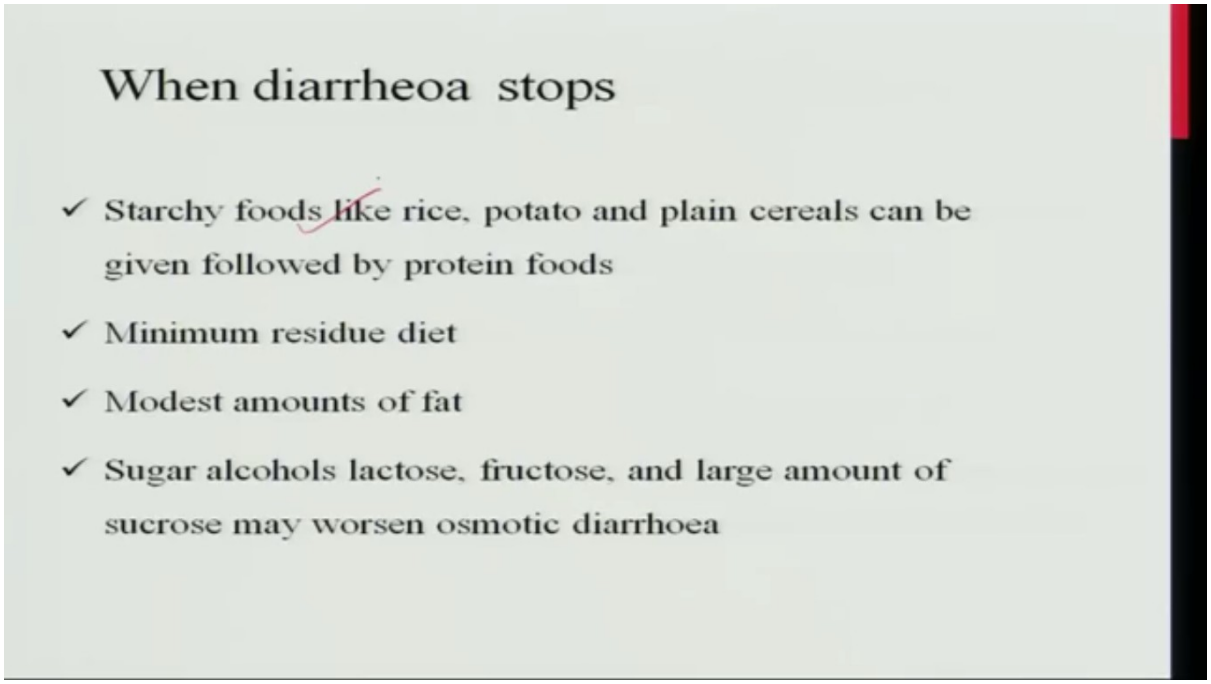

Then when diarrhoea stops, you can give starchy foods like rice, potato, and plain cereals and slowly then you can start protein foods. Then, but initially we should give them minimum residue diet, because the intestine cannot tolerate the solid foods. Then modest amount of fats can be given because you have to supply sufficient energy and sugar alcohols like lactose, fructose, and large amount of sucrose should be better avoided because it worsens the situation of the diarrhoea because again it helps in attraction of more water or drying out more water into the lumen and excrete.

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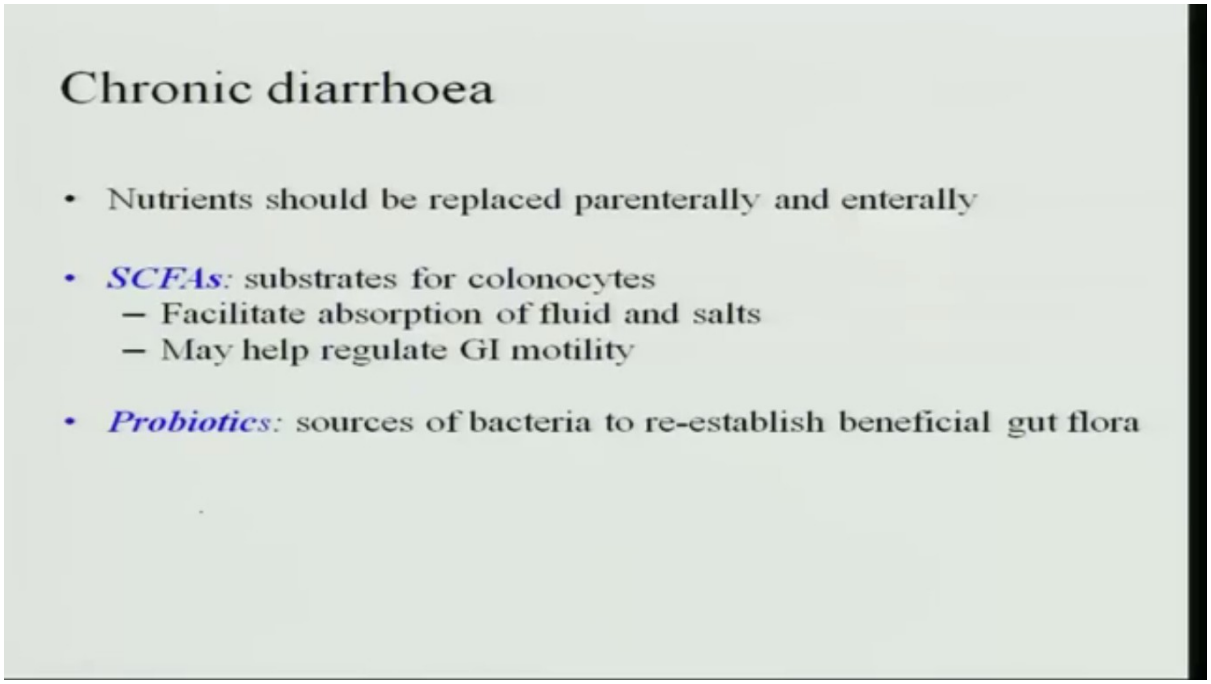

Now chronic diarrhoea, the nutrients should be replaced parenterally or enterally because when the person is not able to swallow, then it is better to give the nutrients directly into the

veins. Intravenous administration of nutrients should be given so that the patient recovers very fast.

Then short chain fatty-acids should be given and it also facilitates the absorption of fluid and salts, and also regulates the gastrointestinal motility.

Then the best thing is you give probiotics. Probiotics is just the opposite of antibiotics. Antibiotics means we are removing the bacteria. So it sometimes what happens is it kills the good bacteria also. So probiotics, it initiates the bacterial growth in the intestine.

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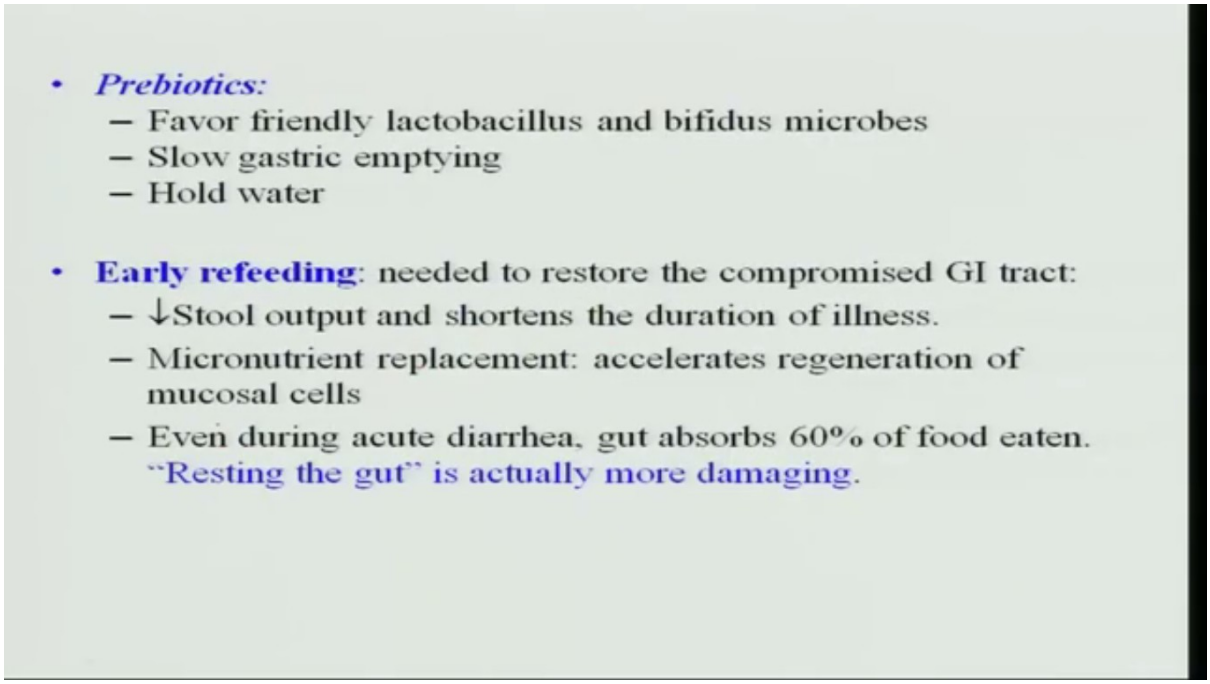

And prebiotics, these favour the growth of the probiotics that is lactobacillus and bifidus. And they help in slowing the gastric emptying and also hold water. So you should restore very fast in the gastrointestinal tract disorders because the stool output and shortening of illness should be decreased. That is the main aim and you have to replace the micronutrients.

So even when you have diarrhoea, many of the people do not eat any food, but whenever there is diarrhoea also the gut has the capacity to absorb 60% of the food that is eaten. So when you rest the gut, it is more dangerous because the body is not getting any nutrients.

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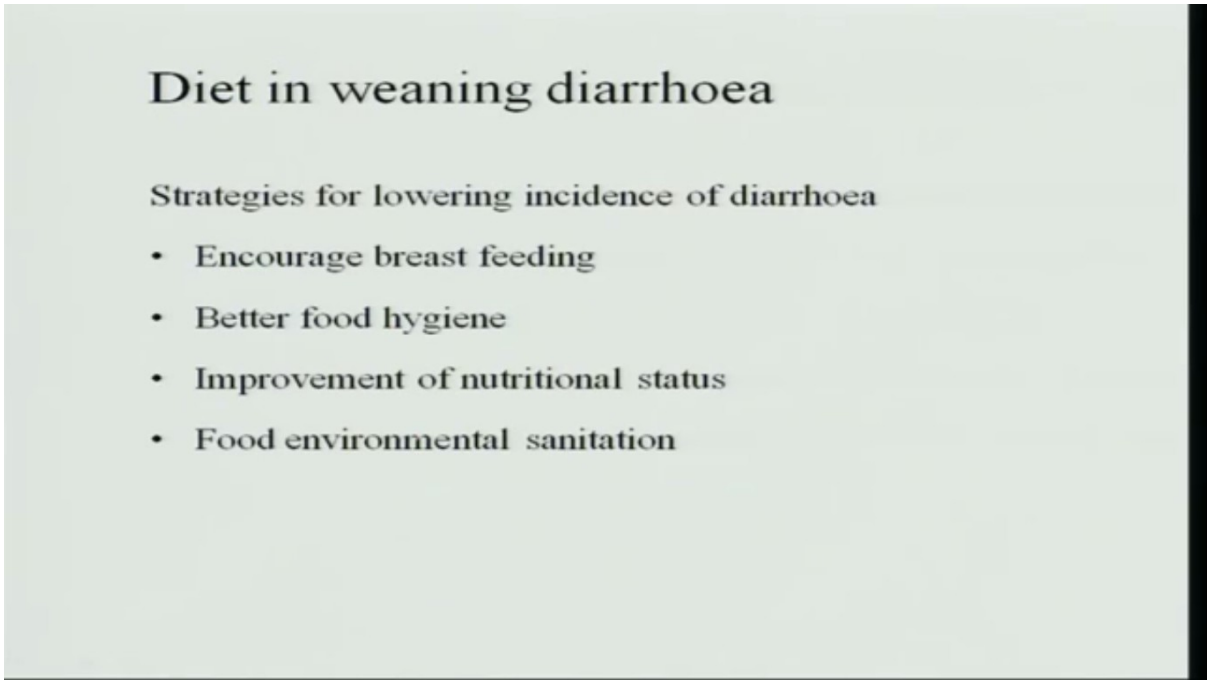

Then there is a diarrhoea called Weaning diarrhoea. That is when the child is weaned from the breast to the normal food, under such conditions also there is weaning diarrhoea. And so encourage breastfeeding before and follow the good food hygiene. Then improvement of nutritional status should be our aim and good environmental sanitation will prevent the weaning diarrhoea.

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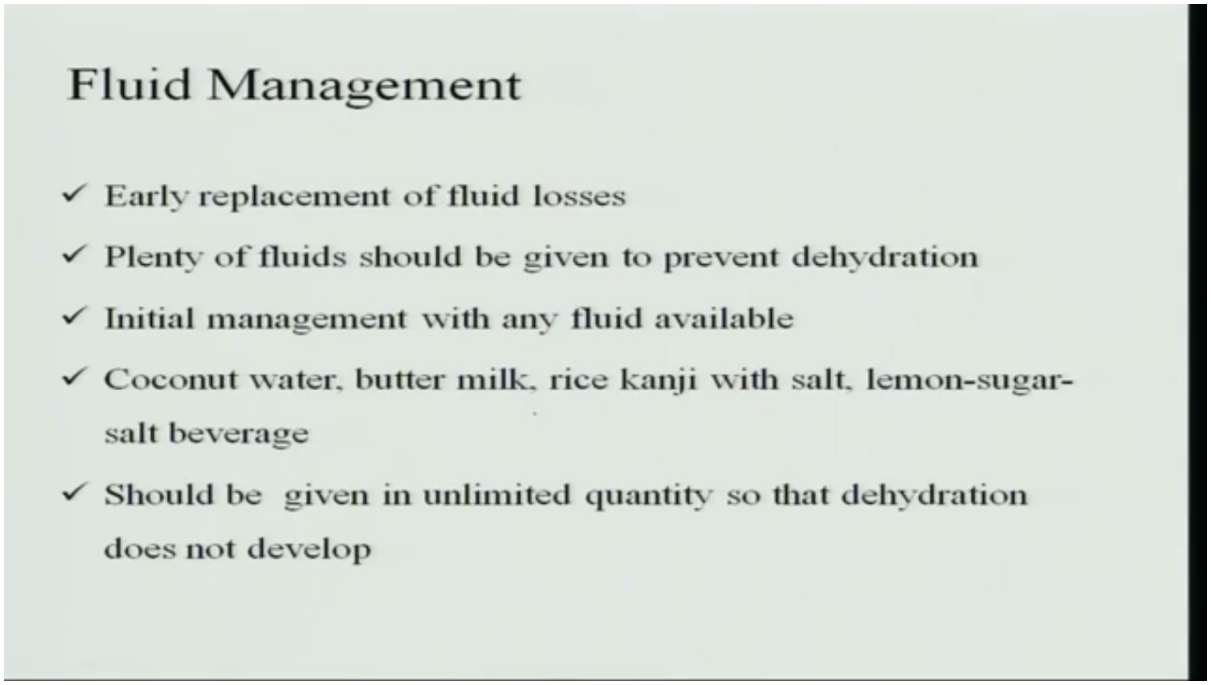

Then fluid management, you have to replace the fluid losses very early. As the diarrhoea episodes are going on, you have to keep on replacing the fluid and electrolyte into the body. Then plenty of fluids should be given to prevent dehydration. Then initial management should be with fluids. So you have to keep everything ready.

Now coconut water, buttermilk, rice kanji with salt and lemon can reduce the dehydration, and these fluids can be given in unlimited quantity so that dehydration can be prevented.

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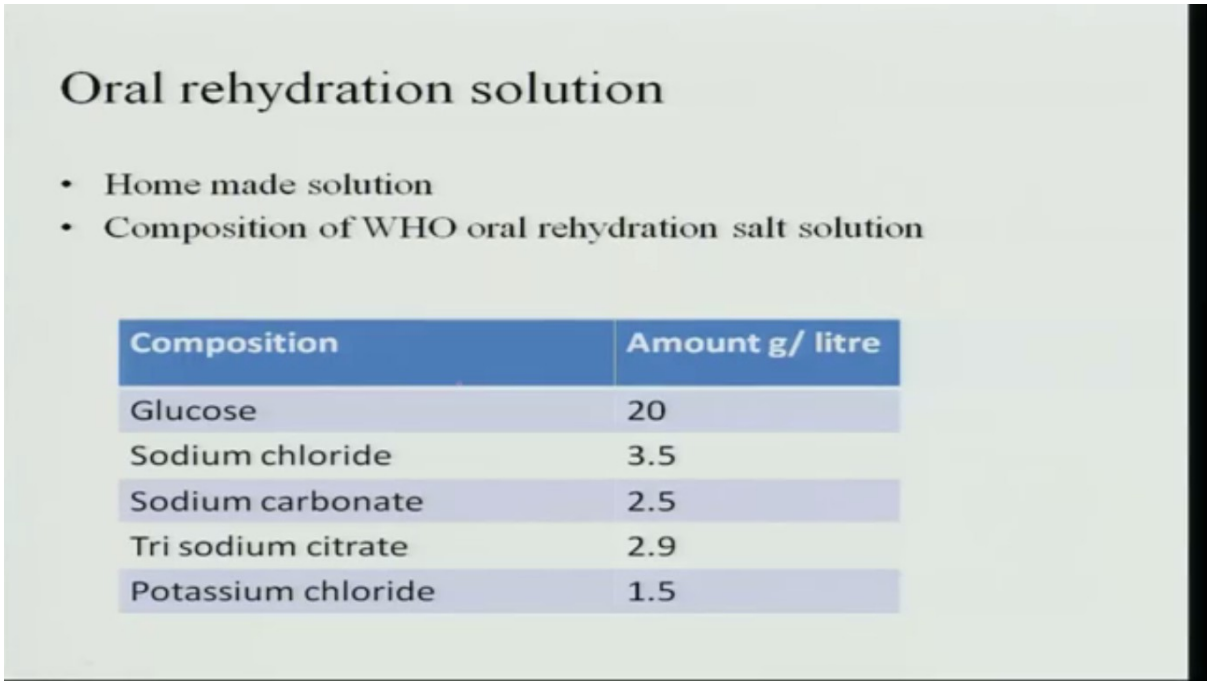

Now there is a solution called -- you can make a oral rehydration solution at home by giving a -- boiling 1 litre of water and adding a pinch of salt and a handful of sugar in it and giving the patient frequently as possible.

Now there is a WHO recommended oral rehydration salts solution where it contains 20 grams of glucose, sodium chloride is 3.5, sodium carbonate 2.5, and trisodium citrate 2.9, and potassium chloride 1.5 grams per litre. That is per litre of boiled and cooled water. This can be frequently fed to the patient with diarrhoea so that dehydration does not occur.

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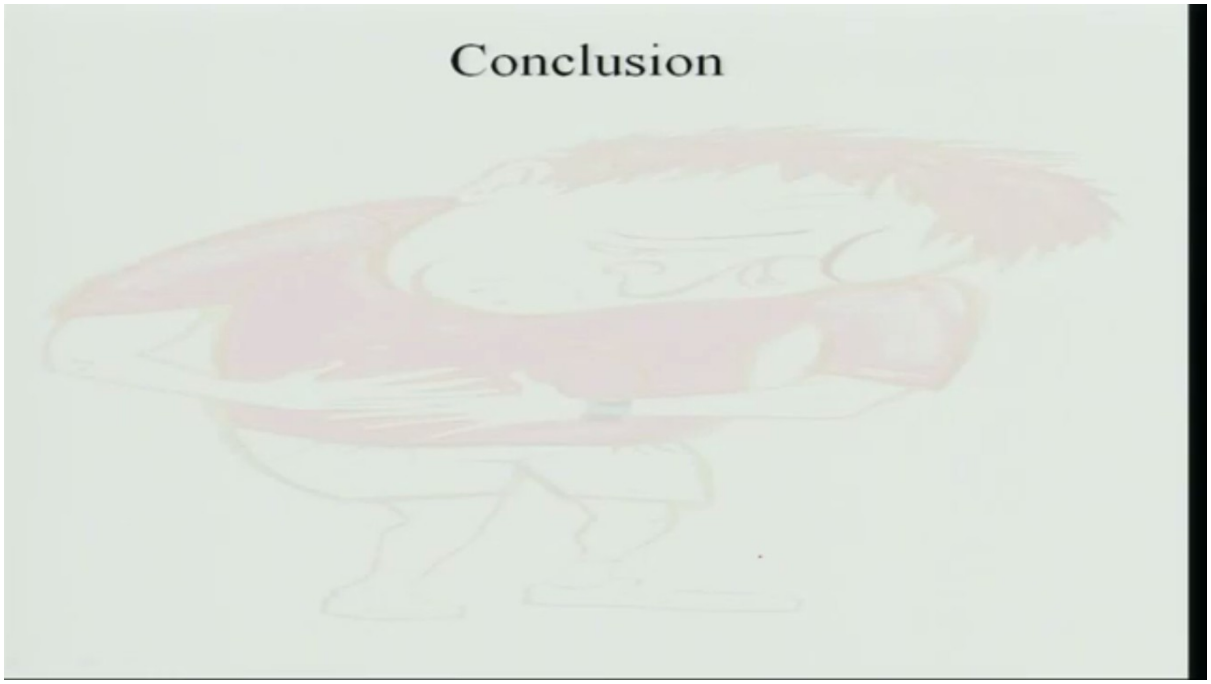

So, therefore, whenever there is diarrhoea, diarrhoea is very dangerous, and if it is neglected, it can become fatal and since the individual loses lot of water and the body undergoes dehydration, the cells also become dehydrated, and they lose their functions and lead to death. So proper care, initial care and fluid management in diarrhoea is very important.

Thank you.