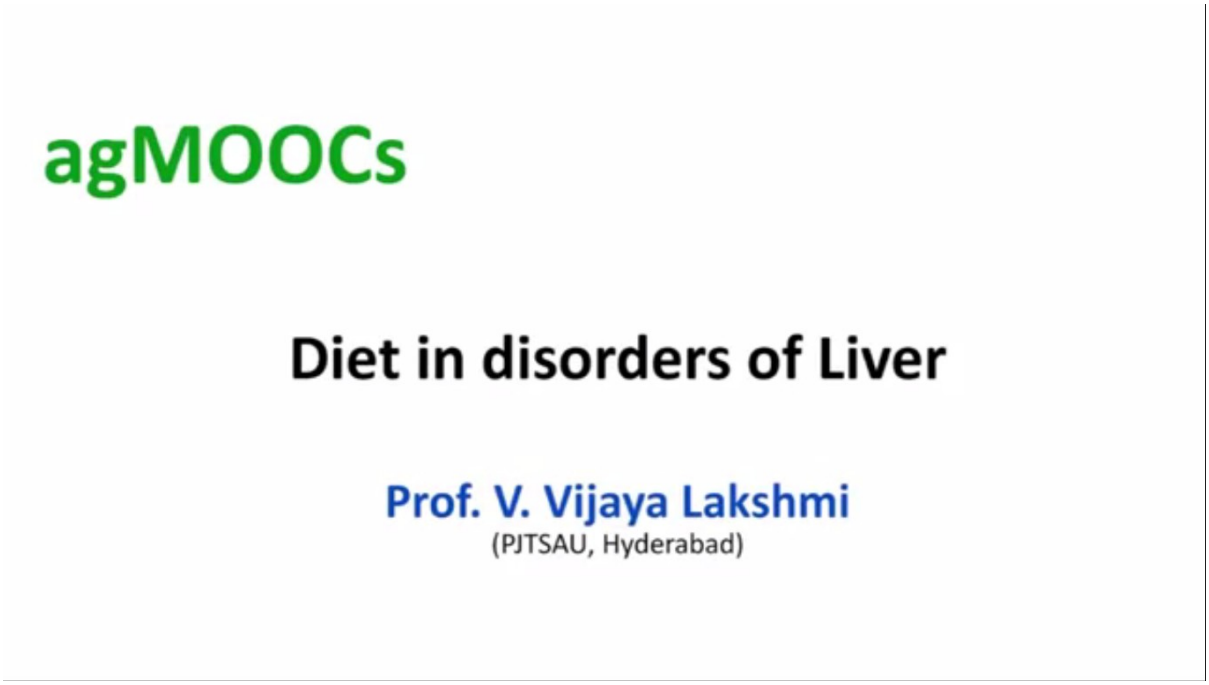
agMOOCs

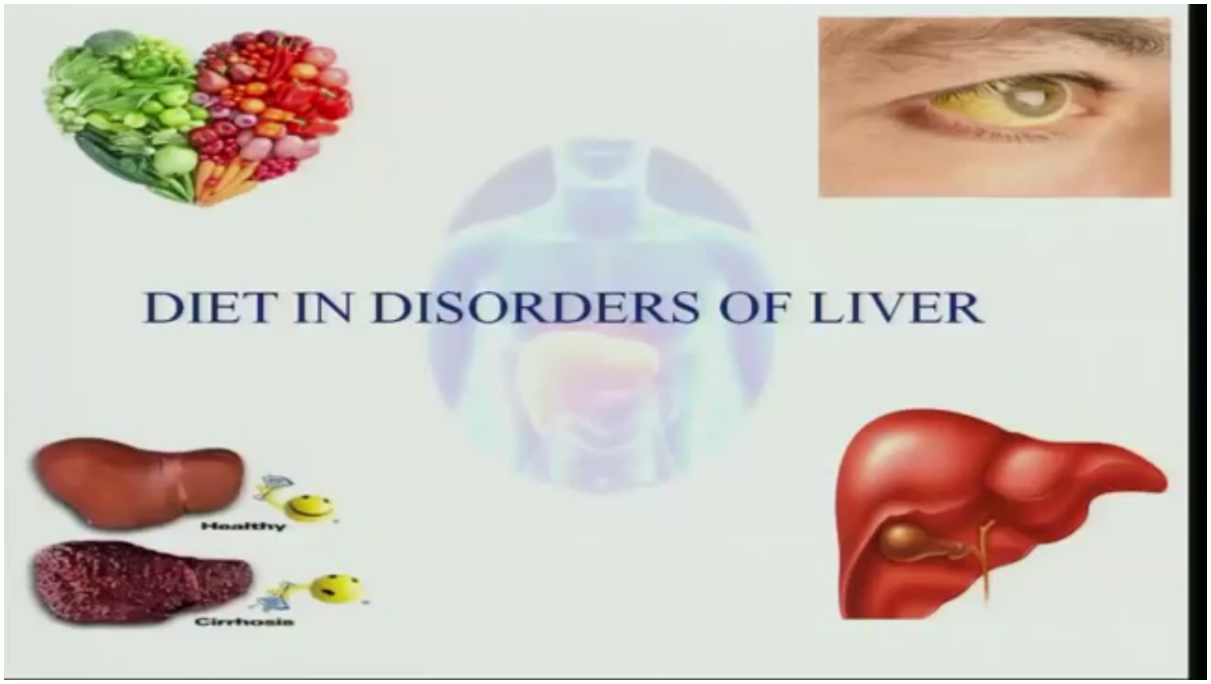
Diet in disorders of liver

Prof. V. Vijaya Lakshmi
(PJTSAU, Hyderabad)



Hi. We have seen the gastrointestinal disorders, mainly the constipation and diarrhoea, and let us see what are the disorders of liver and how diet modification has to be done? Because liver is a very important organ, which is a vital organ of the body and it carries out so many functions, we have to take care of it so that the body is fit. It stores so many nutrients in it and releases whenever the body require. So let us see what happens to the liver.

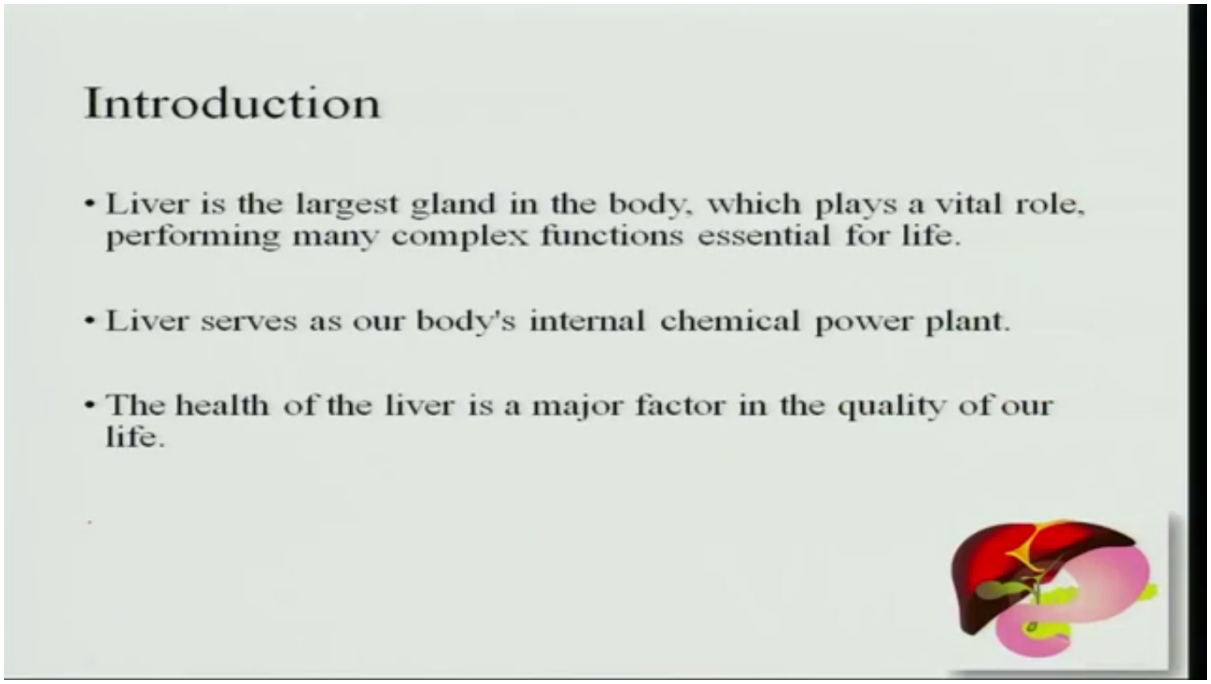
(Refer Slide Time: 00:35)



(Refer Slide Time: 00:36)

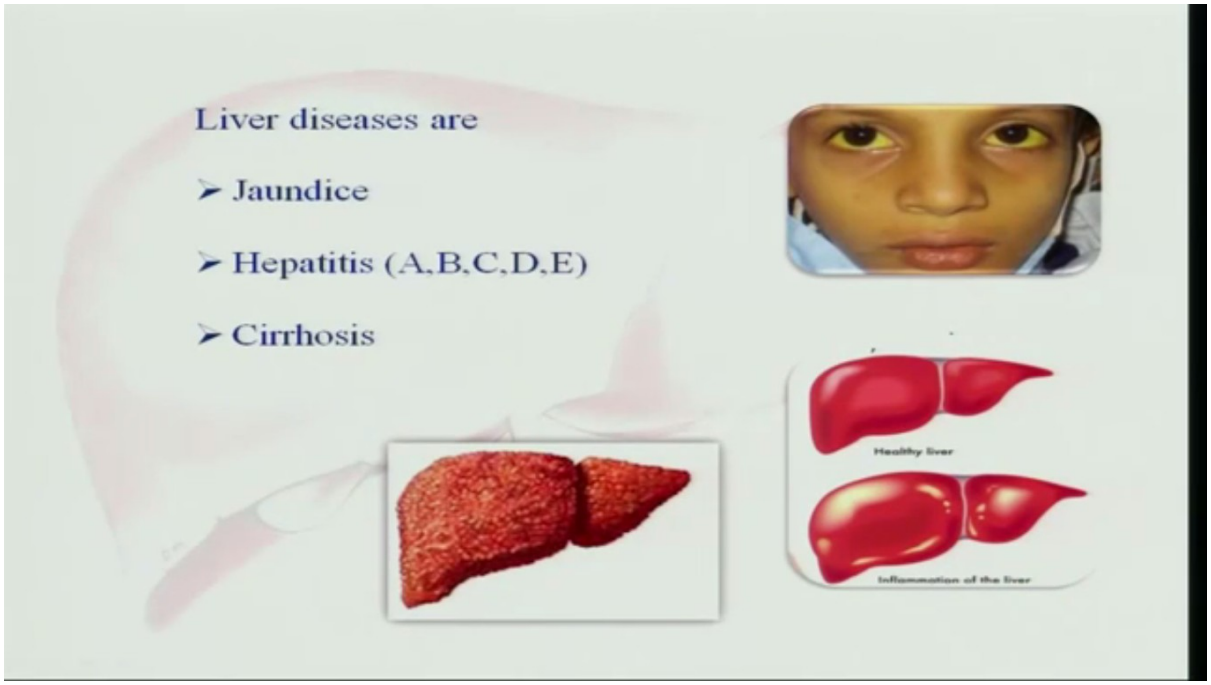
We will see the liver diseases, dietary care, management in this.

(Refer Slide Time: 00:39)



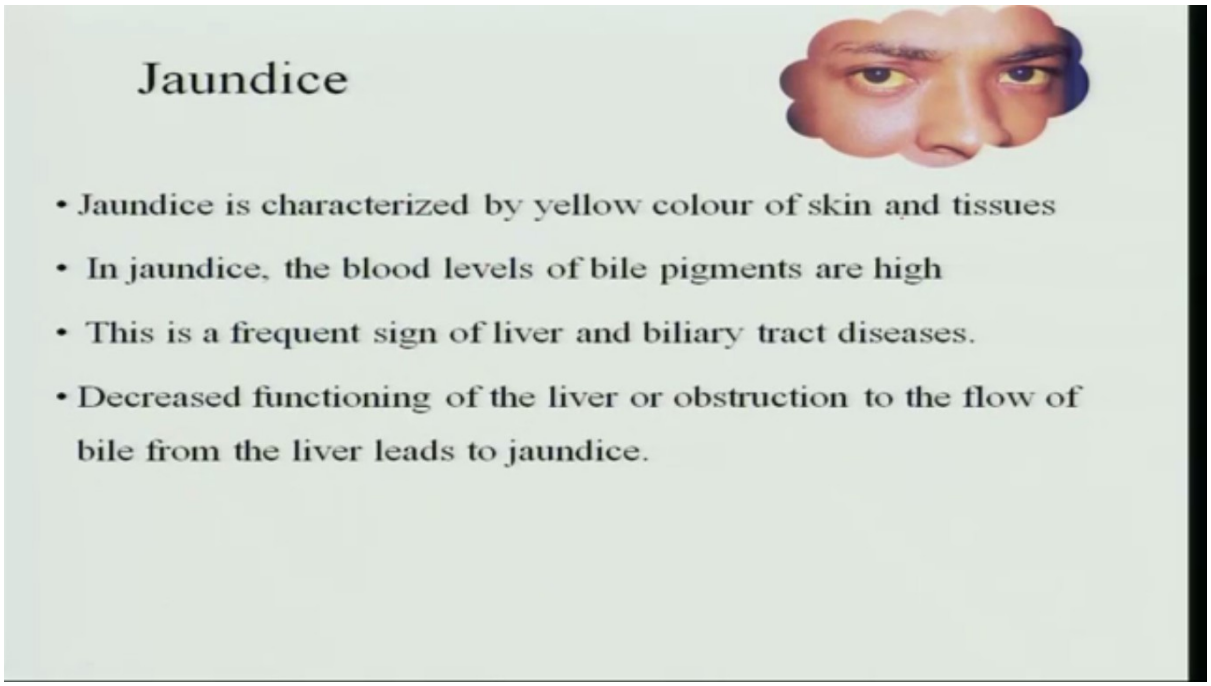
So this is supposed to be the largest gland in the body. And it is supposed to be the chemical factory of the body and plays a vital role, and it has many complex functions, which are essential for life. So it is the chemical power plant of the body and health of the liver is the major factor. And whenever the liver is healthy, we have a best quality of our life.

(Refer Slide Time: 01:06)



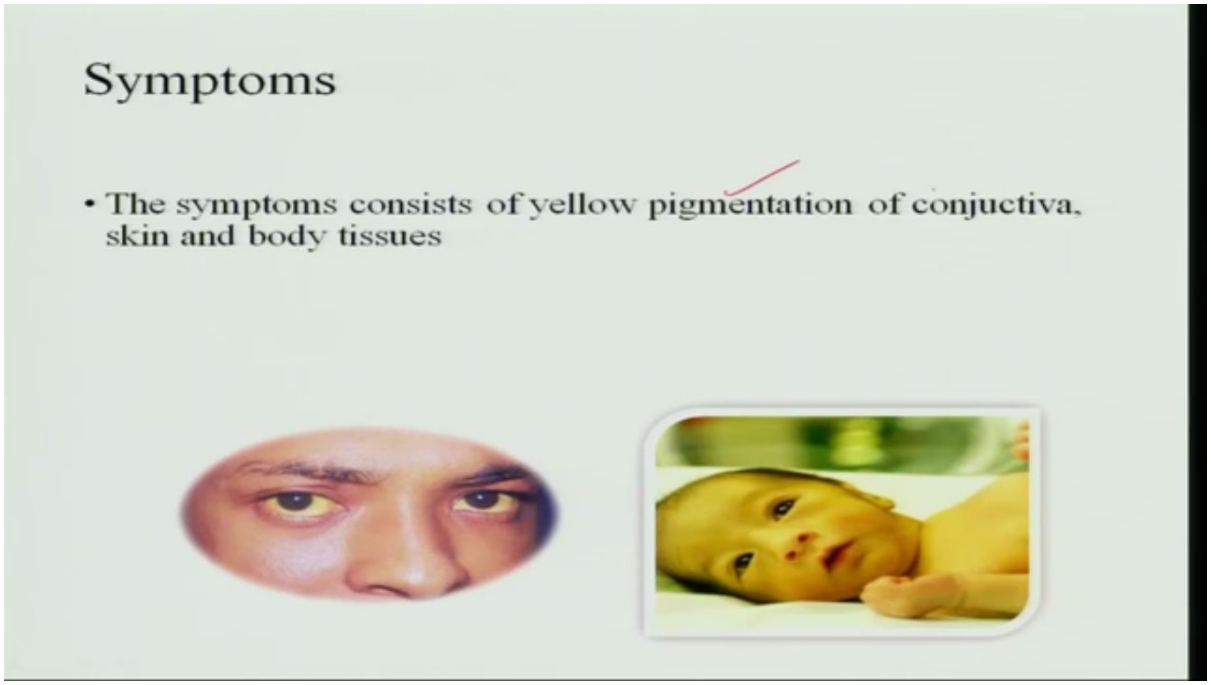
Now liver diseases are jaundice, hepatitis, it can be caused by different viruses like A, B, C, D and E and cirrhosis. You can see the cirrhosis liver. It is like having all pearls in the liver. Then you can see the inflammation of the liver. Then healthy liver is very fresh and it is of normal size and you see the jaundice. You can see the yellow discoloration of skin and eyes.

(Refer Slide Time: 01:37)



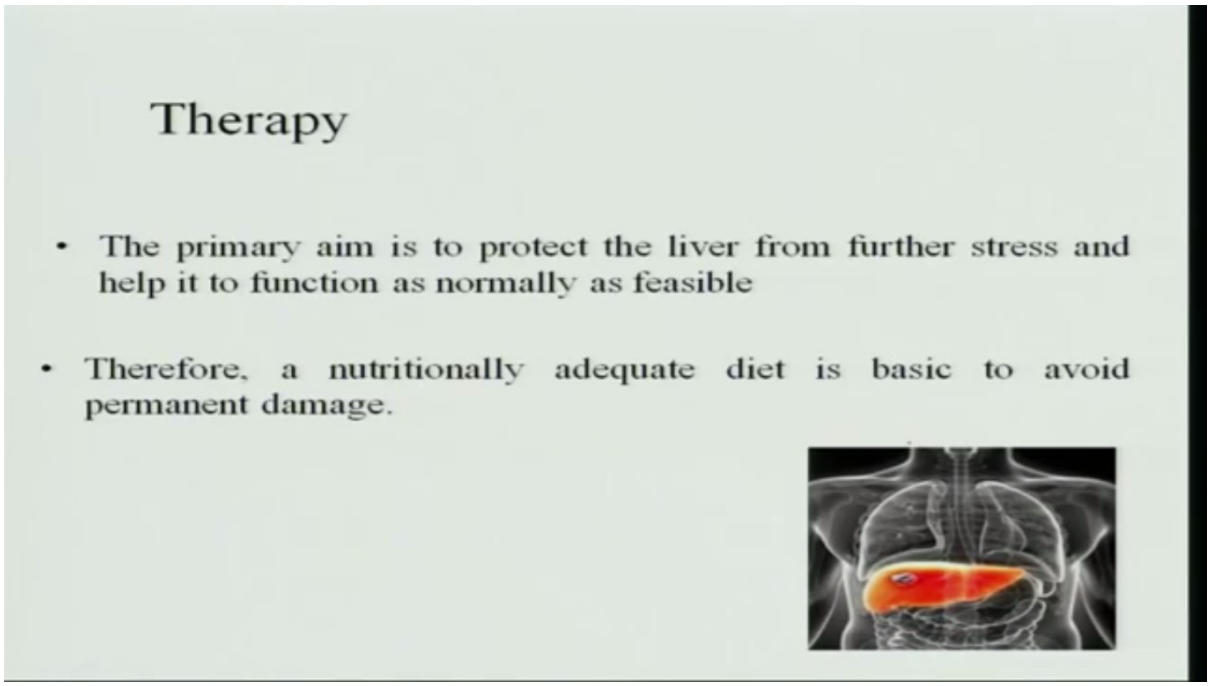
Now what is jaundice? It is characterized by the yellow colour of skin and tissues. And in jaundice, the blood levels of bile pigments increase. They are much higher than the normal levels and this is a frequent sign of liver and the biliary tracts. So decreased functioning of liver and obstruction of flow of bile from the liver leads to jaundice.

(Refer Slide Time: 02:05)



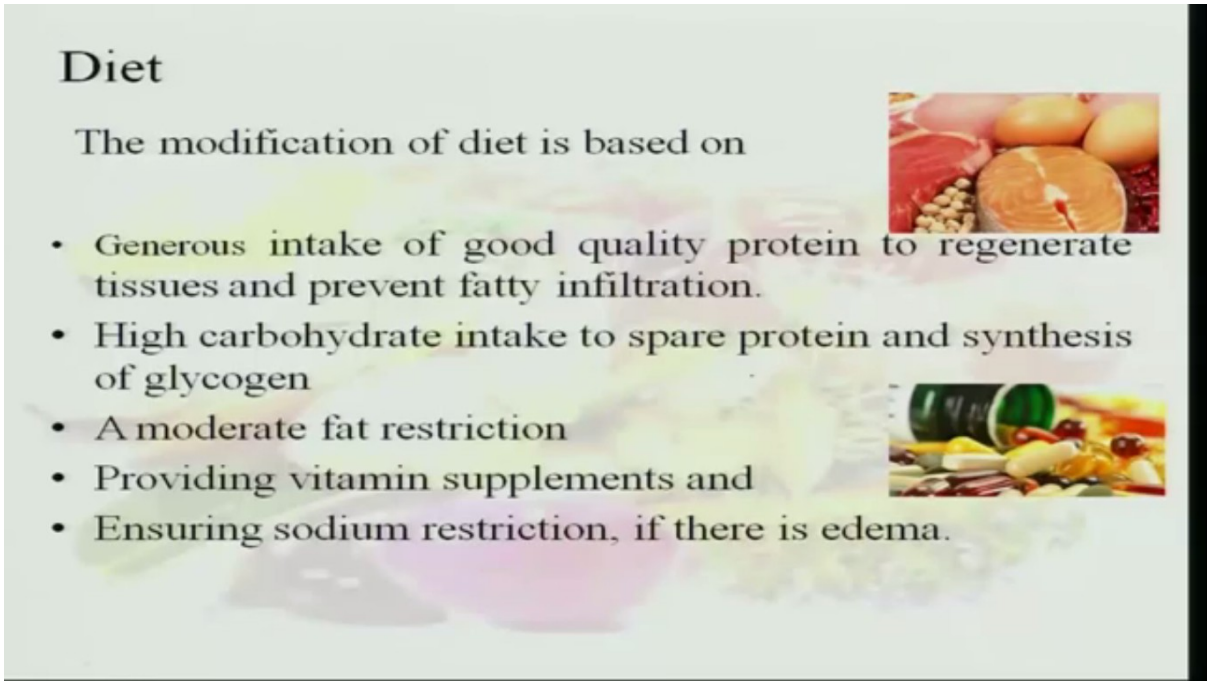
Now what are the symptoms? It is yellow pigmentation of the conjunctiva because the conjunctiva are white in colour. We can see the yellow coloration very easily. Otherwise, it is also on the skin and body tissues where we cannot recognize very easily, but the conjunctive are the best for recognition. You can see the child who is yellow in colour.

(Refer Slide Time: 02:25)



Now therapy is the primary aim of protection of liver from further stress and help it function as normally as possible is the main idea of treating the jaundice. Therefore, nutritionally adequate diet is very important for preventing the damage of liver.

(Refer Slide Time: 02:46)

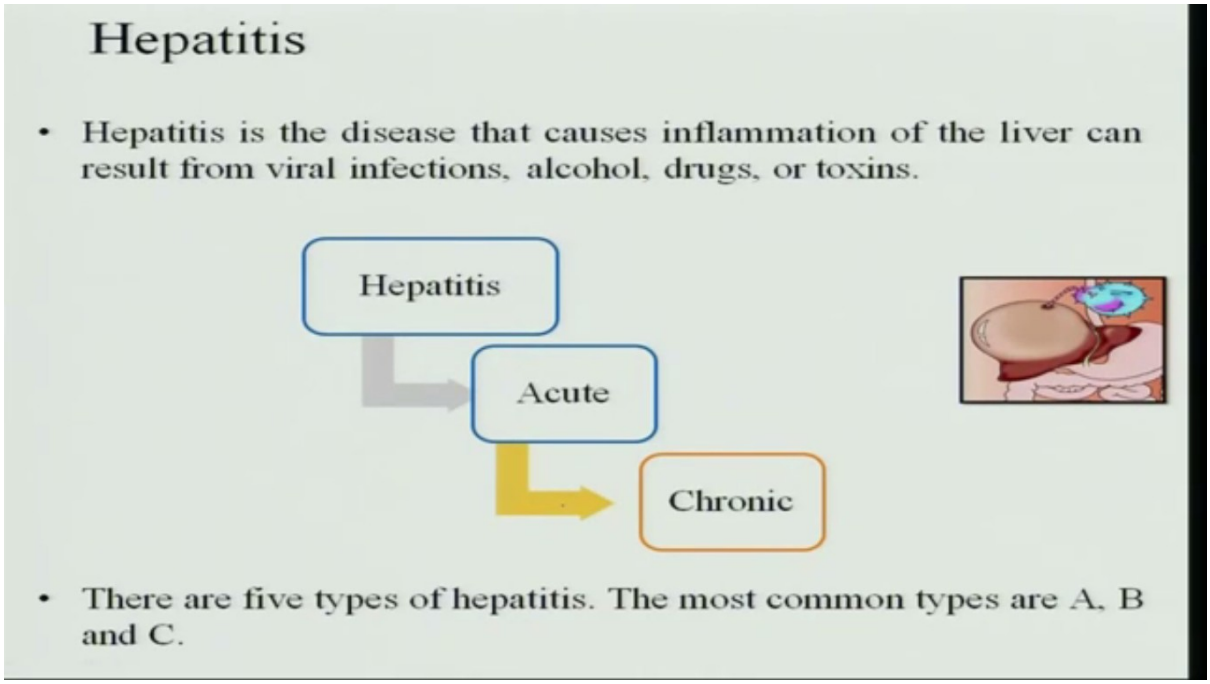


So modification of diet is based on generous intake of good quality protein so that we can regenerate the tissues that are damaged in the liver and also prevent fatty infiltration in the liver. So high carbohydrate intake should be given so that proteins are not spared for the

action of giving energy. So here main function of protein is very important where it has to repair the tissues.

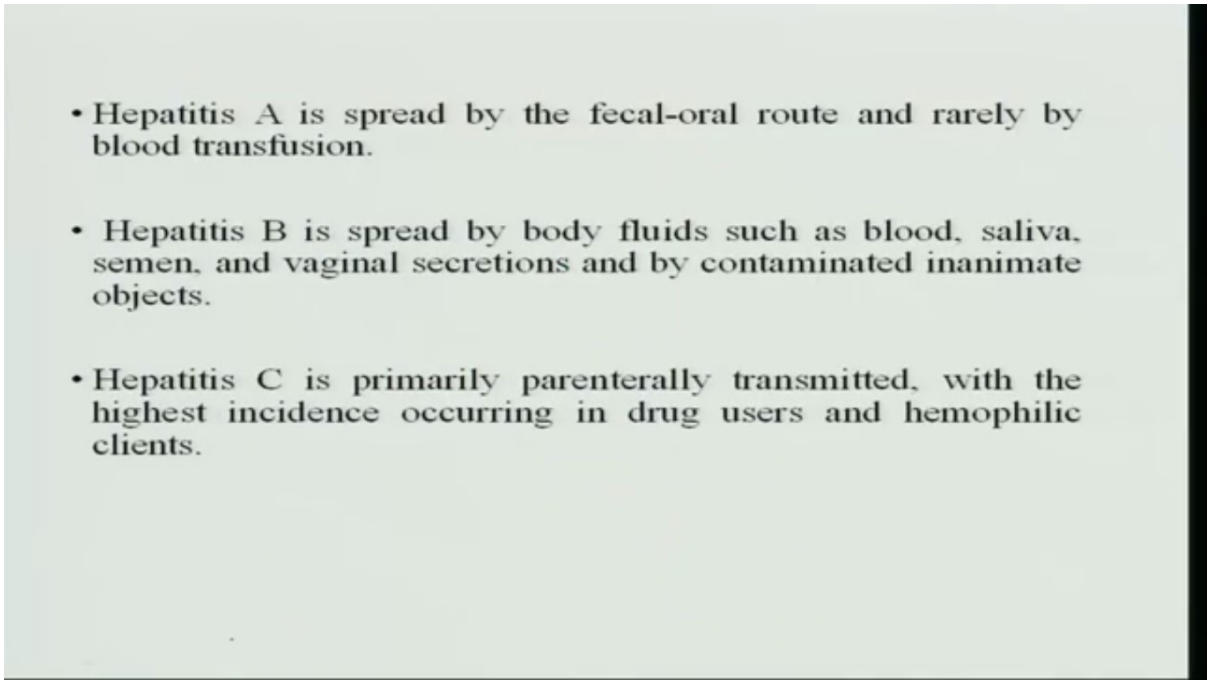
So for sparing the action of protein, you have to give high carbohydrate diet and a moderate fat restriction is necessary because liver is the organ from where the bile is secreted and bile is required for the activation of lipase for digestion of fat. Therefore, fat should be given in moderate amounts or it can be restricted depending upon the tolerance of the patient. Then provide vitamin supplements and ensuring sodium restriction because there is edema in the body.

(Refer Slide Time: 03:47)



Now hepatitis is another disorder where the liver is inflamed, and it can result from various viral infections. It can result from excessive alcohol intake and excessive use of drugs or toxins. So it can be acute or chronic and there are five types of hepatitis. The most common are A, B and C. You know I was telling the virus hepatitis A, B, C, D and E cause hepatitis, but the common ones are A, B and C.

(Refer Slide Time: 04:21)

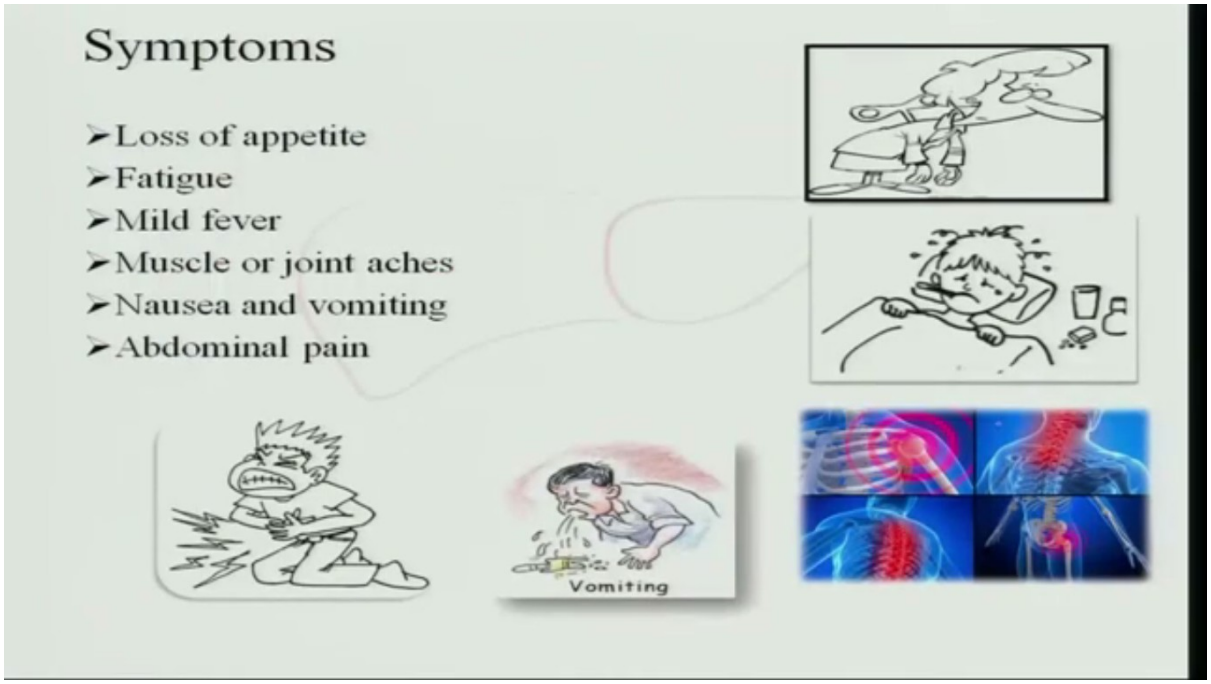


So Hepatitis A is spread through fecal-oral route. That means whenever the person evacuates or excretes feces and does not wash his hands properly, and then the virus goes into the food so that food is taken in and the hepatitis continues. So, but it is rarely due to blood transfusion.

Now hepatitis B is spread through the body fluids like blood, saliva, semen, and vaginal secretions. So this can be contaminated also by inanimate objects. So wherever this saliva is present, suppose the person is cutting vegetables, and the blood comes and it is on the vegetable, so the virus, it stays on the vegetable and when other person eats, this virus may go into the individual. So it can be transmitted through the body fluids.

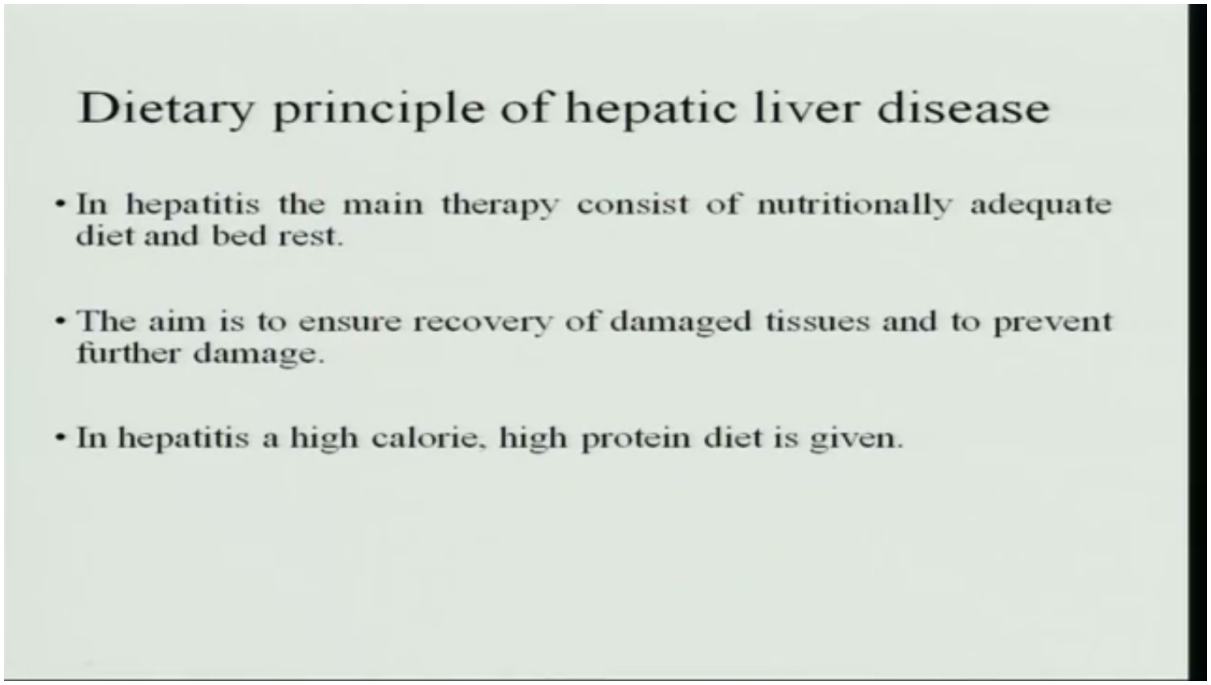
And then the Hepatitis C is parenterally transmitted. Whenever the individual, he is having intravenous feeding or intravenous transfusion of any blood or anything, then it is transmitted through the intravenous route. So drug users who inject drugs into their body and hemophilic clients also have Hepatitis C.

(Refer Slide Time: 05:45)



Now symptoms are there is loss of appetite. Then the patient becomes fatigue and there is mild fever, muscle and joint aches, nausea and vomiting, and abdominal pain. And many times they may not be vomiting, but this is a common symptom.

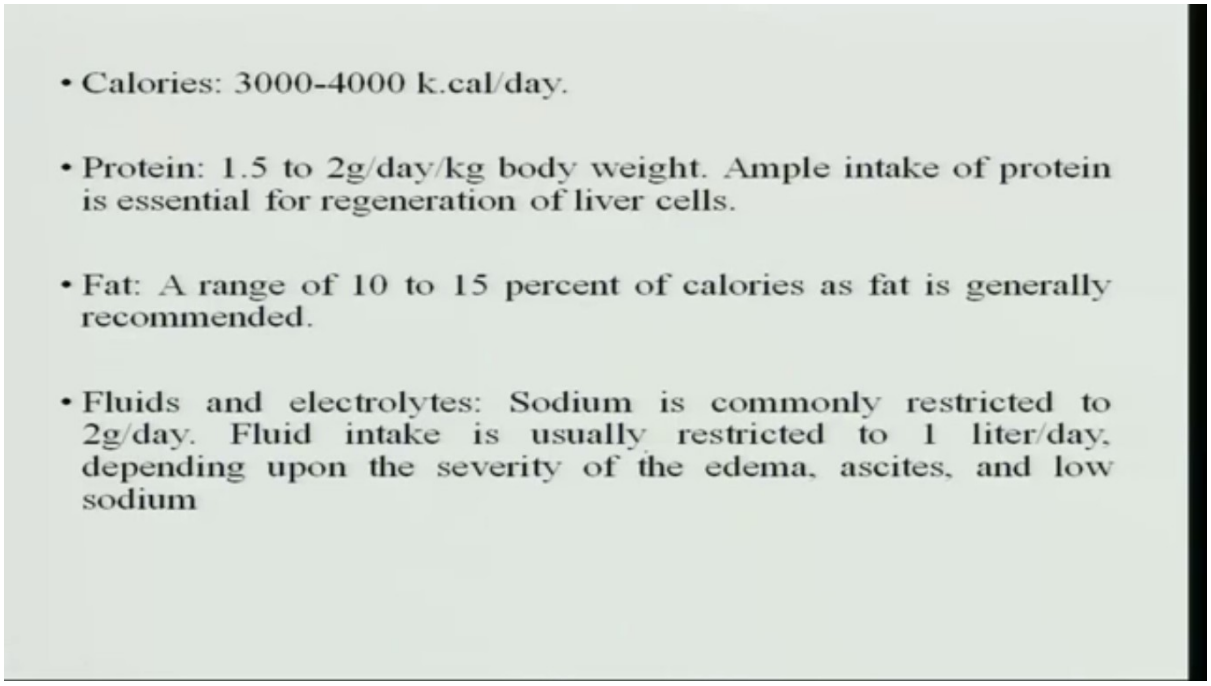
(Refer Slide Time: 06:09)



Now dietary principle of hepatic liver disease is the main therapy is you should give nutritionally adequate diet and bed rest. Generally, what people do is they starve the individual who has fever or jaundice or liver diseases. But we have to give them nutritionally adequate diet and proper rest. Rest is the most important thing for reducing the hepatitis.

The aim is to ensure recovery from the damaged tissues and prevent further damage. So repair and maintenance is important. So you have to give high calorie, high protein diet is very important.

(Refer Slide Time: 06:47)



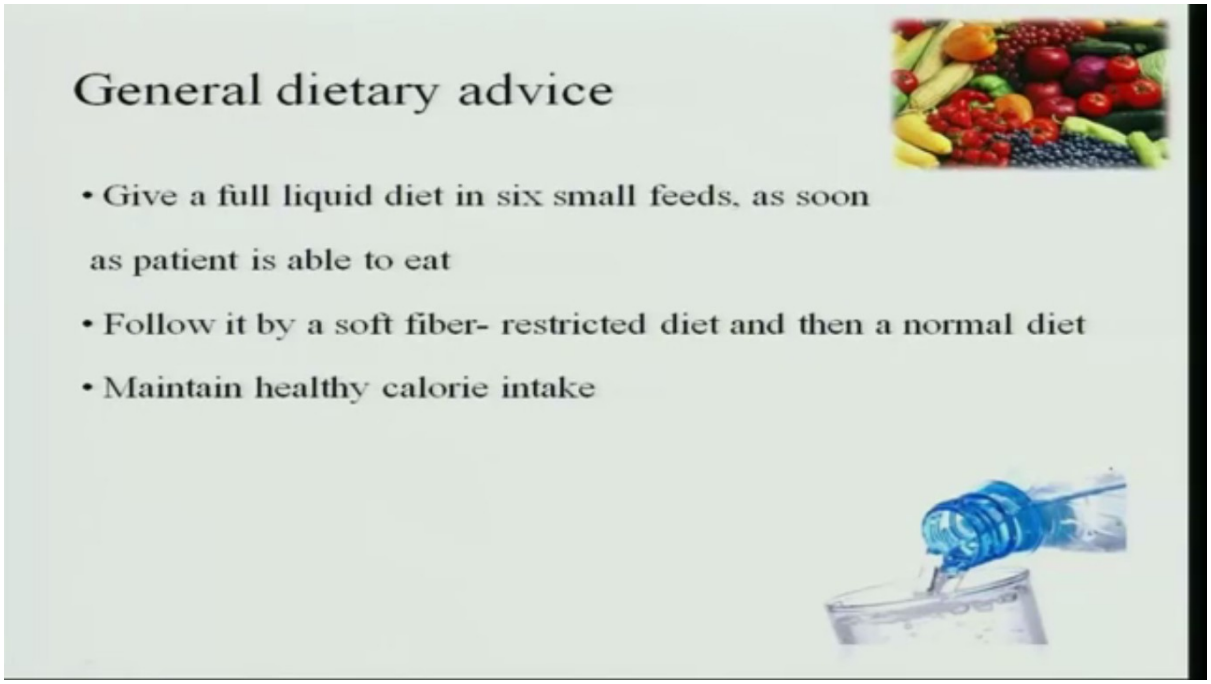
So how much calories to give? You have to supply 3000 to 4000 kilocalories. That means the normal intake is around 2000. You have to increase it almost one-and-a-half to two times the normal kilocalories.

And protein normal intake is 1 gram per kg bodyweight whereas you increase it by 1.5 to 2 grams per kg body weight. So ample intake of protein is essential for regeneration of the liver tissues.

And fat should be given as usual as 10 to 15%. Normal is 20 to 30%. You can give them 10 to 15% of fat as total calories of the body.

Then fluid and electrolytes, sodium is commonly restricted to prevent edema or reduce the edema. So you give them 2 grams per day and fluid intake is restricted to 1 liter per day because as it is the patient is having edema. So depending upon the severity of edema, ascites. Ascites is accumulation of fluid in the abdomen. You can just see the abdomen keeps on increasing with the accumulation of fluid. So they should be given low sodium.

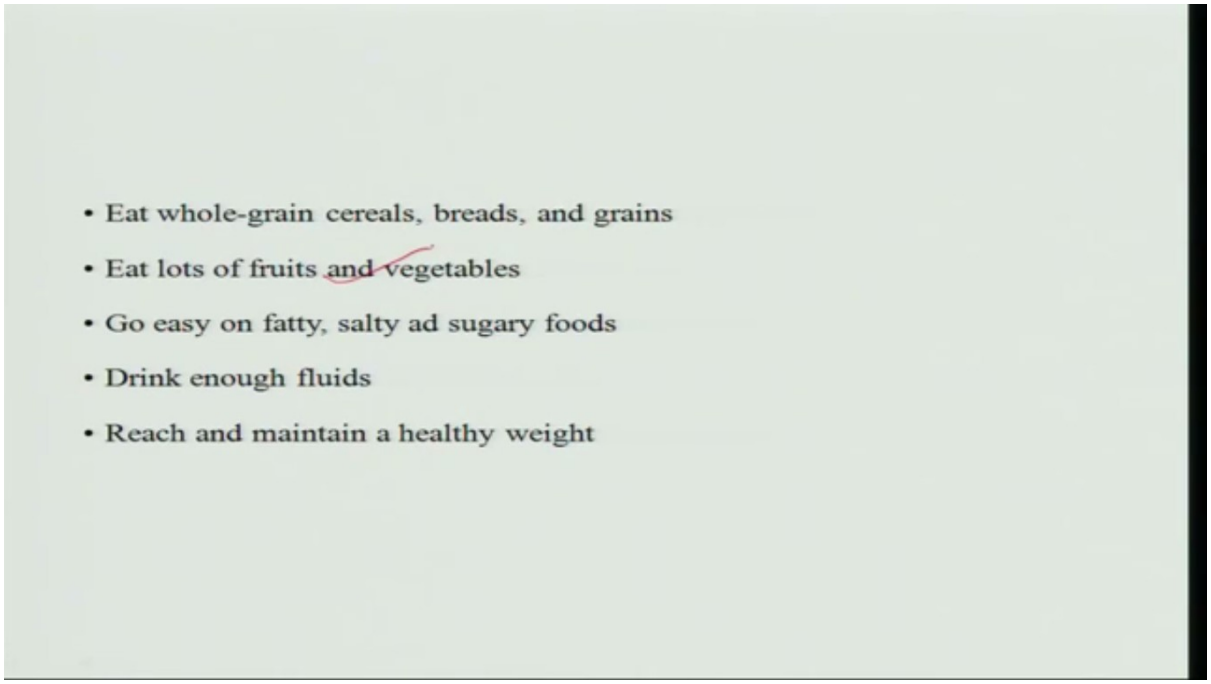
(Refer Slide Time: 08:03)



Now general dietary advice is you give a full liquid diet in small feedings because the amount of energy that is being increased cannot be given at once. So you can give them six small feedings and -- and as the patient is able to -- able to eat, you can increase the amount of feed.

Then you can give them soft fiber-restricted diet and a normal diet. That means the food that is given should be easily digestible and easily assimilable. Then you give a healthy calorie intake. That means the foods that are given should be dense in energy and easily digestible.

(Refer Slide Time: 08:45)



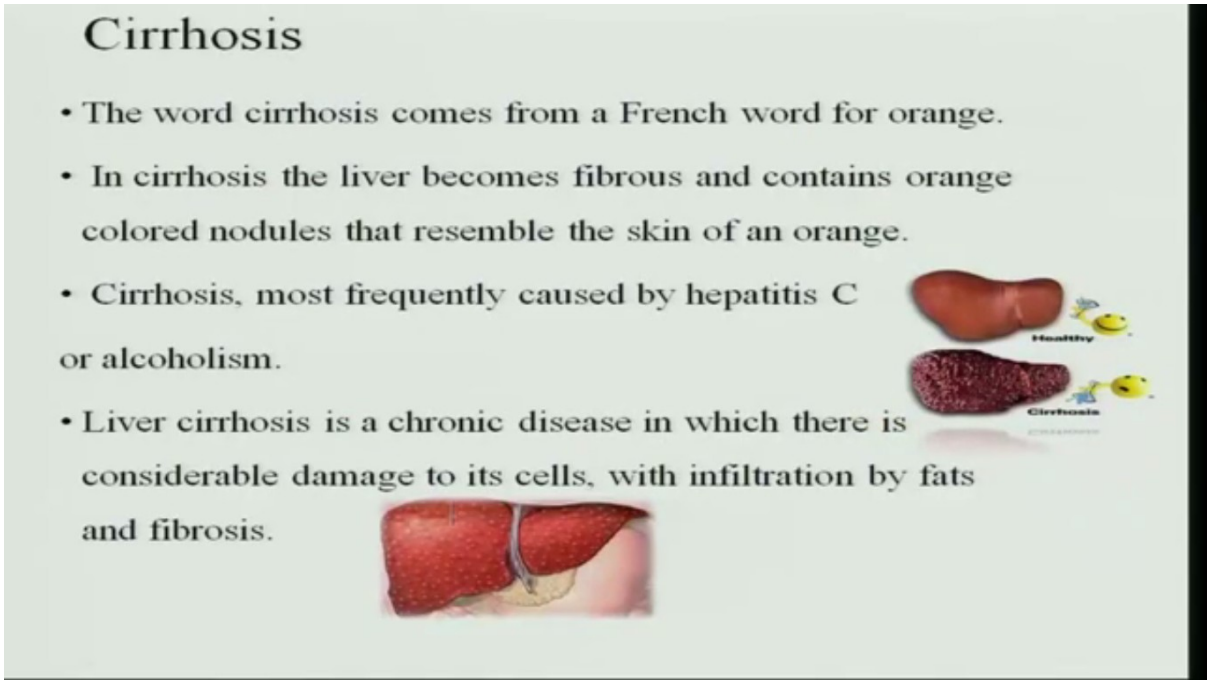
Then eat lot of fruits and vegetables, and give them -- it should be less in fat, less in sugar, and less in salt. So enough fluids should be taken and the normal weight has to be maintained.

(Refer Slide Time: 09:00)

There are some foods which have to be avoided. So, generally, tap water has to be avoided because there may be some more bacteria already. The liver is prone to infections. If you take tap water, which is not boiled or filtered, you may increase the infection. Therefore, tap water should be avoided. Boiled and cooled water is the best.

Then junk food should be avoided because it contains lot of fat. Then hydrogenated oils and dairy products, fruit juices, artificial sweeteners, and because they take extra metabolism in the liver. Then processed foods and alcohol because all these are metabolized in the liver, they should be avoided.

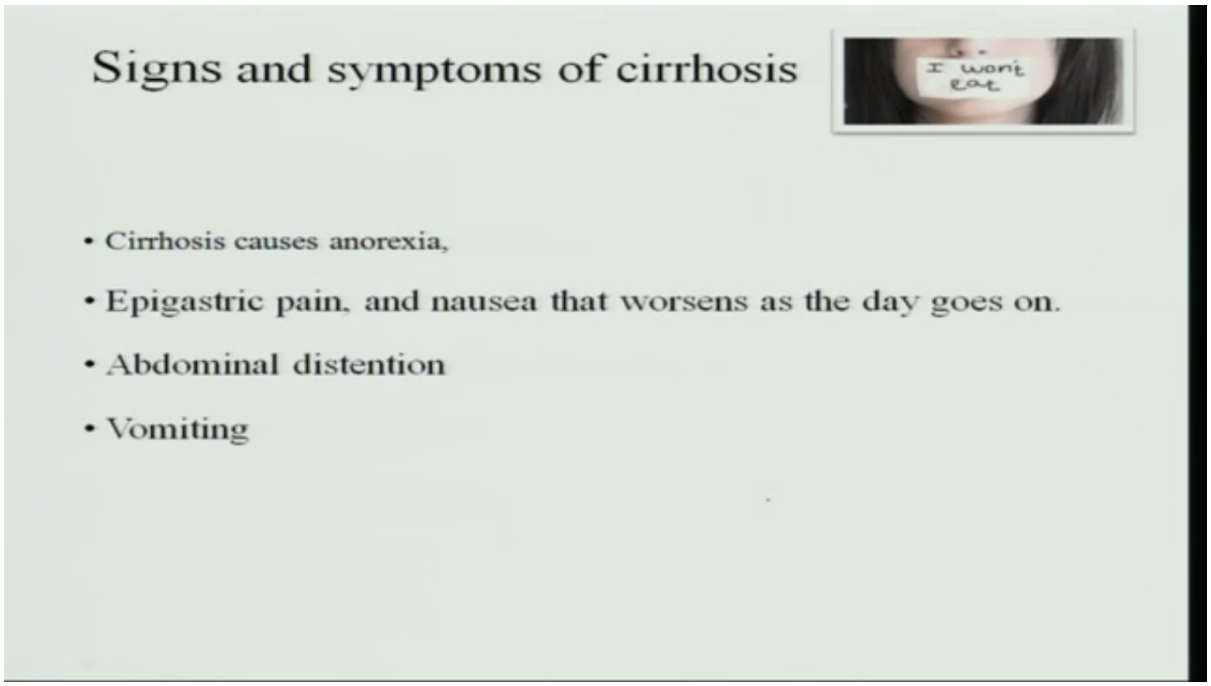
(Refer Slide Time: 09:43)



Then cirrhosis is a type of liver disorder. So it comes from the French word saying orange. So it -- liver becomes fibrous, and it contains orange coloured nodules like this, and it resembles the skin of the orange. So this is caused mainly by Hepatitis C virus and excessive alcoholism.

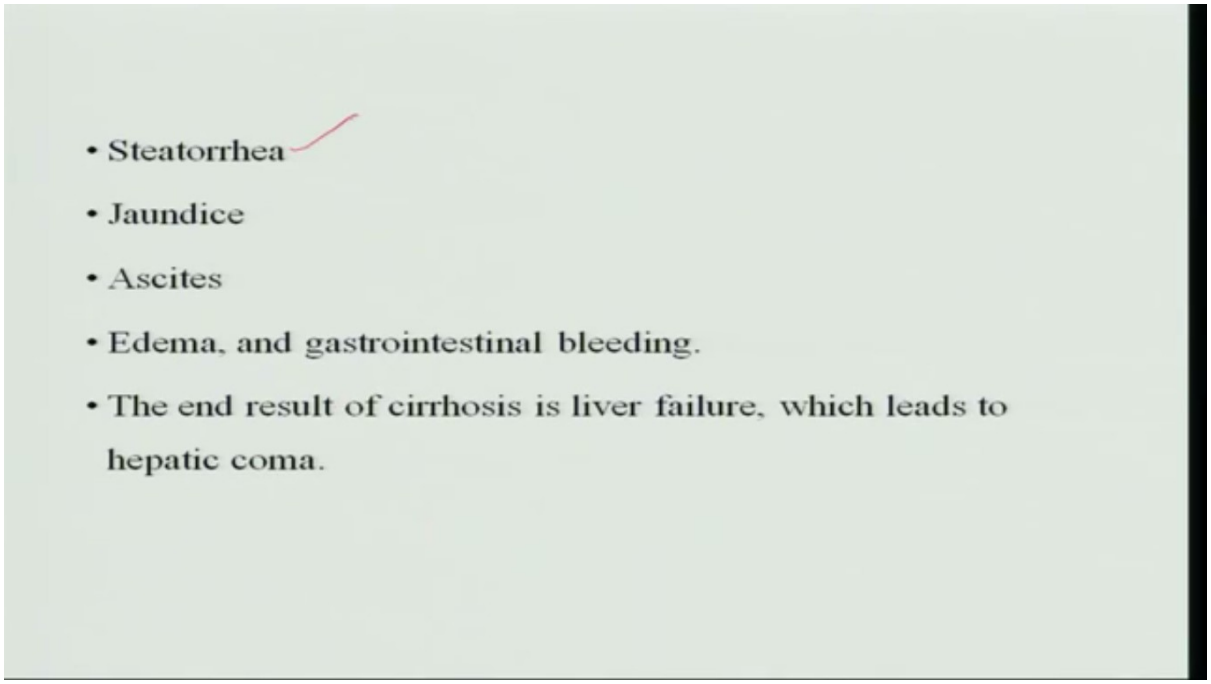
So this is a chronic disease where there is a considerable damage to the liver, and there is infiltration of fat in the liver. That means the liver cells are filled with fat and the liver becomes hard. It becomes a fibrous mass.

(Refer Slide Time: 10:22)



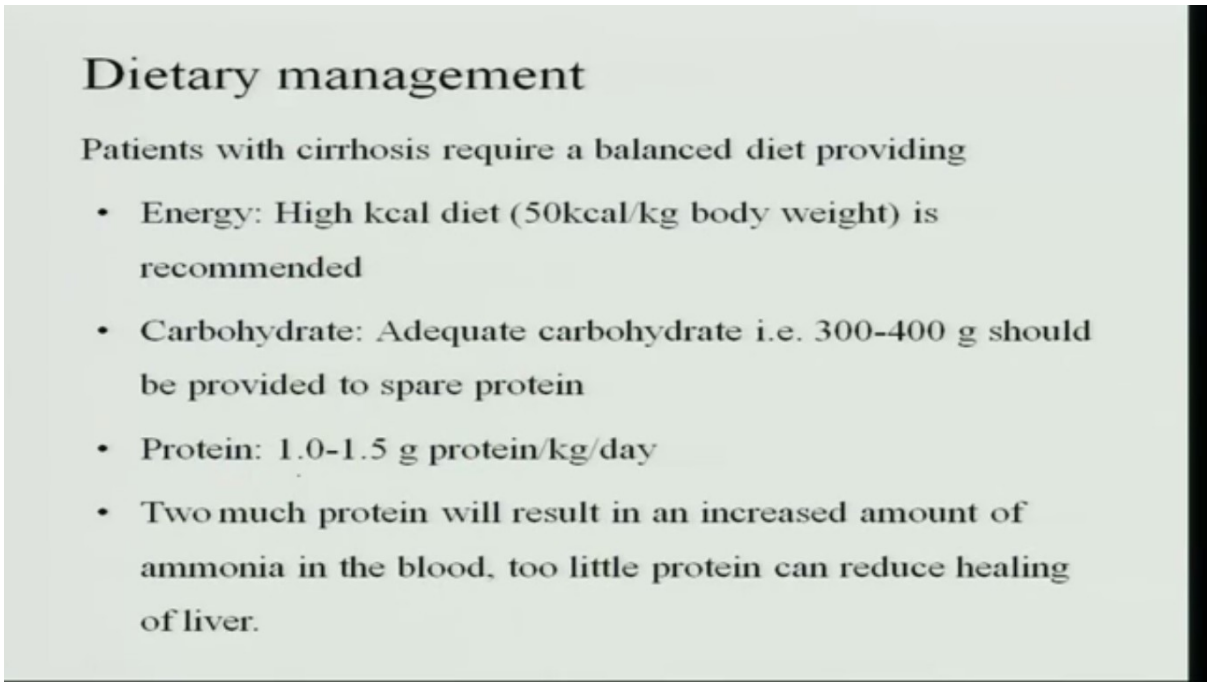
So it causes anorexia. There is pain in the epigastric region. Then nausea. So, because of this, the person further does not eat. Then abdominal distension is there and vomiting is there.

(Refer Slide Time: 10:36)



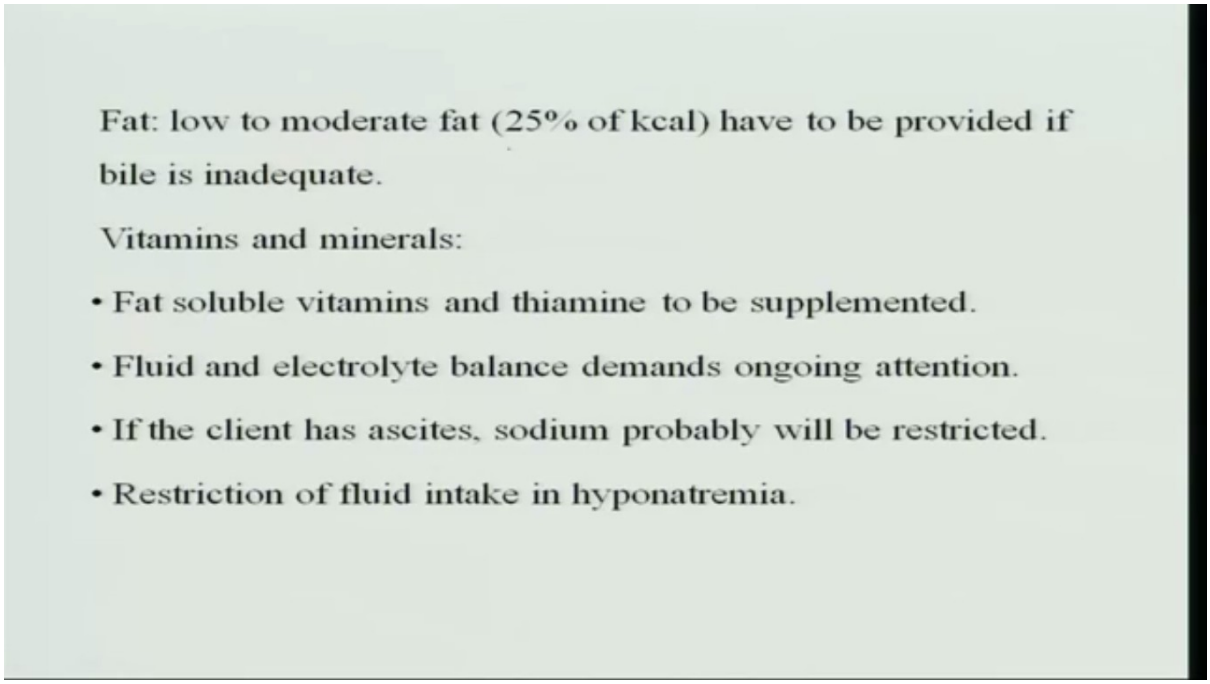
Then it results in Steatorrhea. Steatorrhea is there is excretion of excess amount of fat in the stools. Then there may be a symptom of jaundice, ascites, edema, and gastrointestinal bleeding, and the end result of cirrhosis is liver failure. So once the liver fails it leads to hepatic coma.

(Refer Slide Time: 10:58)



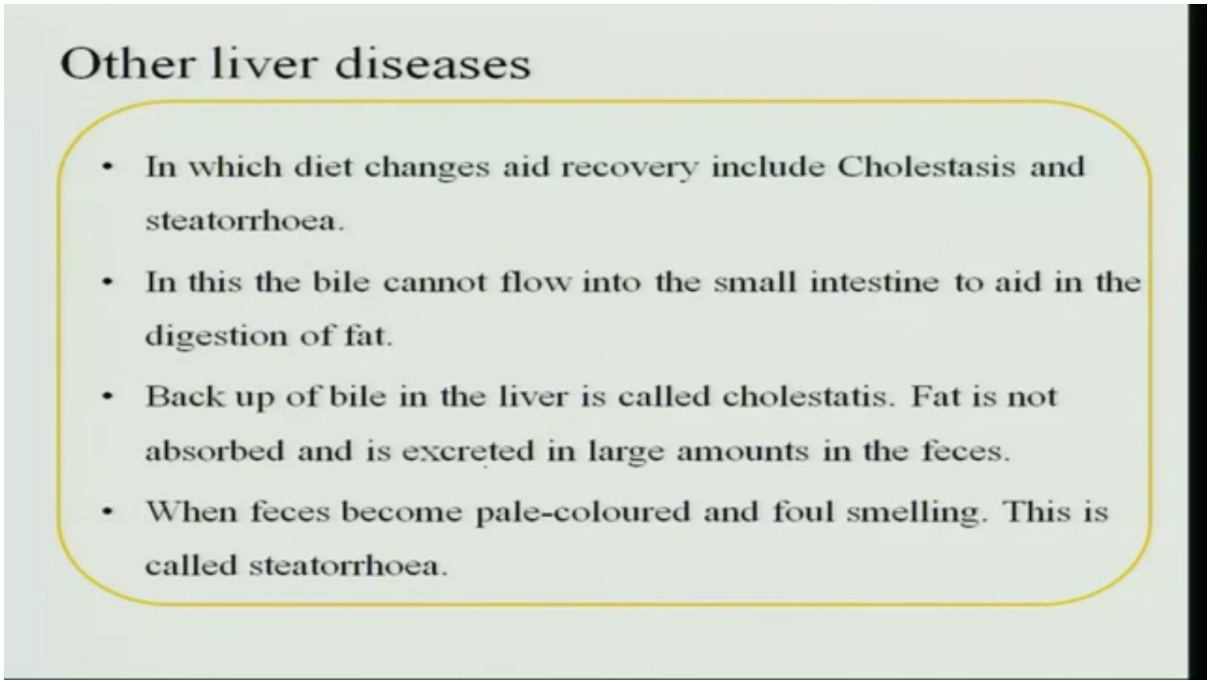
Dietary management is it should be high calorie that is 50 kilocalories per kg body weight. Normally, it is 30 to 40 kilocalories and carbohydrates adequate amount of 300 to 400 grams should be given. Protein 1 to 1.5 grams per kg bodyweight and because too much of protein also will result in -- when the protein is metabolized, it will result in release of lot of ammonia.

(Refer Slide Time: 11:28)



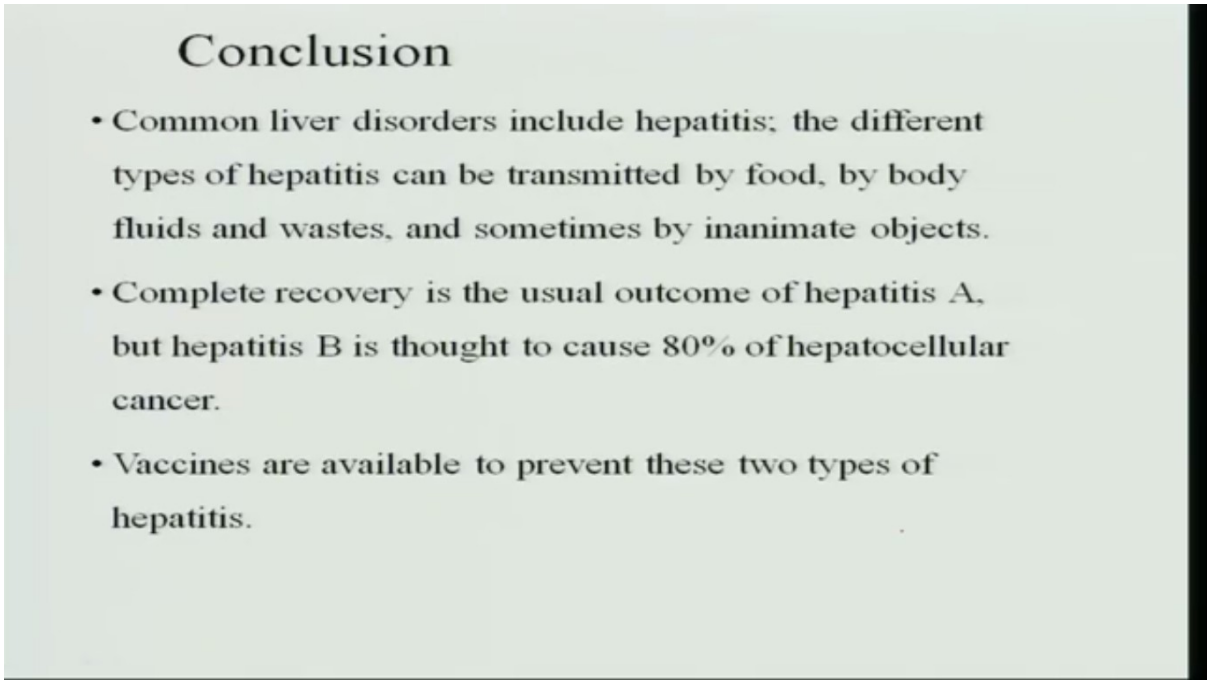
Then low fat that is 25% of the kilocalories should be provided, and vitamins and minerals should be provided liberally. Fat soluble vitamins and thiamine should be supplemented. Fluid and electrolyte balance should be maintained, and if the patient has ascites, sodium should be reduced. And if there is hyponatremia, that is reduction in the sodium levels, then you reduce the fluid intake so that the sodium level comes back to normal.

(Refer Slide Time: 11:58)



Then other liver diseases, this is Cholestasis and Steatorrhoea are the other liver diseases. So here the bile cannot flow into the small intestine in order to aid the fat digestion. So there is backup of bile in the liver and this is called cholestasis. The liver is filled with bile. It is not able to flow to the gallbladder and so whenever fat is not absorbed or not digested, that means there is no sufficient bile that is produced, and so large amount of fats is excreted in the feces. So when the feces becomes pale-coloured and foul smelling, that means there is lot of fat in the feces. This is called steatorrhoea.

(Refer Slide Time: 12:42)



So now common liver diseases include hepatitis and we have seen the different types of hepatitis, what is the dietary care to be taken, what is cirrhosis, how it can lead to ascites,

what are the foods that has to be avoided, what are the foods have to be given, and how to prevent the damage of liver further, and how to get the maintenance of liver. So all these are very important in the liver disorders.

We have seen so many disorders that occur in the liver, and we have seen what are the symptoms that occur, and what is the treatment that has to be given, and what proper care and hygiene has to be taken care of in preventing the viral disorders into the body. And the liver disorder requires at most care of by giving high calorie, high protein diet with moderate or restricted fat.

And if there is edema and if there is ascites, there should be a restriction of sodium. So if we take all these care and help to rejuvenate the liver, maintain the liver and prevent the further damage of liver, then you can keep the patient very healthy and help him to recover very fast.

Thank you.