

### The liver

The liver is the largest organ in the human body and is located in the upper right part of the abdomen (tummy), protected by the ribcage. Even though it is important for everybody to keep a healthy liver, it is especially important for people living with HIV because the liver plays an important and crucial part in the metabolizing of antiretroviral medications (ARV) and other drugs. Viral infections of the liver, like hepatitis A, B and C can not only make you feel ill, but can also affect the capacity of the liver to process medicines, as can liver lesions caused by the use of drugs and alcohol.

#### The liver functions

The liver has three functions: it stores and filters blood, eliminating toxic substances that come from drugs, food and body waste; it produces bile, which is released into the gut to help digest fats; and it metabolizes nutrients from food, releasing energy into the blood stream and storing vitamins and minerals.

#### Possible Problems

Many people living with HIV do not have liver problems. However, as happens with other people, heavy and sustained alcohol consumption can cause liver lesions. If this is not controlled, it can lead to a condition called cirrhosis. This is when the liver has permanent scars and lesions that gravely affect one's health. Recreational drugs, such as ecstasy, heroin and cocaine, can also damage the liver if taken to excess.

Hepatitis means inflammation of the liver and is quite common in people living with HIV. The most common causes are the viruses hepatitis A, B and C, which not only have serious effect on the health but can also limit HIV treatment options. Hepatitis A is transmitted through foods or drinks contaminated by human excrement containing the hepatitis A virus; and sexually by oral-anal contact (rimming). Hepatitis B is transmitted from mother to child; by contact with infected blood; or by unprotected anal, oral or vaginal sex. Hepatitis C is a virus found in the blood and is spread through contaminated blood products; sharing of needles or syringes for injecting drug use; from mother to child; and through unprotected vaginal or anal sex, especially when blood is present. At this moment, all blood products are tested for the presence of hepatitis C.

Some ARV drugs, especially ritonavir and nevirapine, and other prescription drugs, can cause liver inflammation. High doses of vitamin A can also cause liver lesions. Severe liver damage can increase the chances of developing liver cancer, which can be fatal.

#### Symptoms of liver diseases

Typical symptoms of liver problems include extreme tiredness, a feeling of poor health, weight loss, loss of appetite, nausea and vomiting, fever, stomach pains, itchy skin, and an

enlarged or tender liver, along with jaundice, which is easily noticeable as the skin and whites of the eyes turn yellow, urine becomes dark and stools pale.

#### Tests

Generally it is recommended to check up on the health of the liver in people taking ARV drugs. Blood samples may be taken to check on your liver during your routine clinic appointment. Also, your doctor can do a physical examination in order to check whether the liver is swollen or tender.

If liver functions tests show persistent abnormalities and you have symptoms of liver diseases, a liver biopsy can be performed, especially if hepatitis B or C, or liver cancer is suspected. A biopsy is done by taking a small sample of the liver through a simple surgical procedure which is usually done with a local anesthetic.

#### Treatments

The treatments for liver diseases vary depending on the cause, but can include rest, avoiding the tea, coffee, alcohol and recreational drugs, and possibly a change in prescription medicines. It is possible to use alfa interferons for the treatment of hepatitis A, B and C, along with some antiretroviral drugs. Surgery or liver transplant may be valid options for advanced liver diseases.

#### How to keep a healthy liver

There are simple steps that can protect the liver from possible damage. When traveling to certain areas, especially to countries with little poor sanitation, it is important to know that hepatitis A can be spread in shellfish, salads, raw vegetables, water and ice cubes. It is helpful to inform yourself in a HIV treatment center about vaccinations for hepatitis A and B, even more so if you are sexually active. The use of condoms will reduce the risk of contracting hepatitis viruses during anal, vaginal or oral sex. If using injecting drugs, it is crucial to assure that you are not sharing injecting equipment. It is recommended not to drink alcohol in excess and to allow for the body to recover when you have drunk heavily. In the same way, be aware that the use of recreational drugs can damage your liver.