

## **AN OVERVIEW OF HEPATITIS A, B, C, D AND E**

**The following** is intended as an overview only. For further information go to <http://www.hepatitisaustralia.com/>

### **Hepatitis A**

#### ***Overview***

Hepatitis A is an acute (short-term) infection of the liver that can be serious and require medical attention. It is spread through the faecal-oral route or when infected faecal matter enters the mouth. Symptoms can be debilitating but most people infected with hepatitis A recover completely. Once you have had hepatitis A you cannot get it again.

Hepatitis A is diagnosed by a simple blood test. Hepatitis A is preventable with good personal hygiene. There is a vaccine for hepatitis A, usually recommended for people travelling to high prevalence countries.

#### ***Prevalence***

In Australia, there are approximately 300–500 cases of hepatitis A reported per year. The number of cases reported has been declining nationally since the late 1990s (DoHA 2006). In 2013 there were 170 diagnosed cases of hepatitis A in Australia.

#### ***Transmission***

In Australia infection with hepatitis A is more likely in particular locations and amongst specific groups of people, including child day-care centres and pre-schools; men who have sex with men; injecting drug users; residential facilities for the intellectually disabled; and; travellers to countries where the infection is common (Asia, Africa, South-Pacific, Central and South America). Drinking or eating contaminated water or food could result in infection.

#### ***Symptoms***

Symptoms generally include fever, weakness, fatigue, loss of appetite, nausea, joint aches and pains, vomiting, and jaundice (yellowish eyes and skin, dark urine and pale-coloured faeces).

### **Hepatitis B**

#### ***Overview***

Hepatitis B is the most common liver infection in the world and is caused by the hepatitis B virus. A blood borne virus, it virus attaches to healthy liver cells and multiplies. This replication of the virus then triggers a response from the body's immune system. People are often unaware they have been infected with the hepatitis B at this stage.

Hepatitis B infection can lead to cirrhosis (scarring of the liver), liver cancer or liver failure if it is not diagnosed and managed. Hepatitis B is diagnosed through various blood tests, which look for markers of the hepatitis B virus in the blood.

#### ***Prevalence***

Two billion people worldwide have been infected with hepatitis B globally, and about 600,000 people die every year due to the consequences of hepatitis B.

In Australia, it is estimated that 225,000 people are chronically infected with hepatitis B. However, nearly half of those living with chronic hepatitis B in Australia are undiagnosed.

People with chronic hepatitis B have a significantly increased risk of developing liver cancer. Deaths from primary liver cancer are climbing faster than any other cause of cancer death in Australia.

### ***Transmission***

Hepatitis B is a blood-borne and a sexually transmitted infection. Hepatitis B is spread through the blood or sexual fluids (vaginal fluids or semen) of an infected person entering the blood stream of a non-infected person. It is also transmitted from mother to baby during birth.

The hepatitis B virus cannot penetrate unbroken skin and is killed by the digestive juices in the stomach if it is swallowed. It is NOT spread by contaminated food or water, and cannot be spread through casual or social contact such as kissing, sneezing or coughing, hugging or eating food prepared by a person with hepatitis B.

### ***Symptoms***

Most people (95%) who get infected with hepatitis B as an adult will have a short term (acute) illness, and their body will get rid of the virus naturally. Symptoms of acute hepatitis B infection may be flu-like symptoms, muscle aches and pain, nausea, vomiting, fatigue and jaundice (yellow skin and eyes), however many people will have no symptoms at all and not know that they have the infection.

People with chronic hepatitis B often experience no symptoms at all, or non-specific symptoms. Most people with chronic hepatitis B have had the infection since birth or early childhood, and so may not know that the symptoms they experience are abnormal in any way. Symptoms vary and their severity and intensity may rise and fall over time.

### **Hepatitis C** ***Overview***

The hepatitis C virus is one of several viruses that can cause inflammation of the liver. Hepatitis C can damage the liver. The amount of damage may be slight or serious.

Hepatitis C infection involves an initial acute phase of infection that may not be noticeable, because in most cases people do not feel sick. This phase can last up to six months, and levels of the virus in the blood rise dramatically until the body's immune system starts to produce antibodies. Antibodies are made in response to the presence of the hepatitis C virus.

On average, around 25% of people who contract hepatitis C will clear the virus naturally within the first 12 months. For the remaining 75% of people the virus is not eliminated. For these people the virus will probably remain in their body for the rest of their lives. This is called chronic (long term) hepatitis C.

The initial screening test for hepatitis C is a blood test which checks for antibodies. The human body produces antibodies in response to the virus. A different test, the Polymerase Chain Reaction (PCR) test is used to see whether the virus is in the blood. A further test: HCV PCR genotype test determines which particular strain of the virus a person has. A Liver Function Test (LFT) is a blood test that gives an indication of whether the liver is functioning properly, and provides a gauge of possible damage to liver cells.

Treatment at the moment is tailored according to the particular genotype or strain of hepatitis C. Currently there is no vaccine available for hepatitis C.

### ***Prevalence***

It is estimated that 150 million people worldwide are chronically infected with hepatitis C. In Australia, approximately 233,000 are living with chronic hepatitis C. It is estimated that without significant preventative action there will be a 245% increase (in Australia) in liver cancer due to hepatitis C by 2030.

### ***Transmission***

Hepatitis C is a blood borne virus. Transmission may occur when the blood of an infected person enters the bloodstream of another person, through unsafe injecting drug use, unsterile tattooing or body piercing procedures, unsterile medical procedures or vaccinations (particularly in countries with high rates of hepatitis C), needle-stick injuries and accidental exposure to infected blood or blood products, exposure to blood in the home, or some other form of blood-to-blood contact.

The hepatitis C virus cannot penetrate unbroken skin and is killed by the digestive juices in the stomach if it is swallowed.

### ***Symptoms***

Some of the symptoms that people with hepatitis C may experience include flu like symptoms, pain in the liver region, fatigue, night sweats, abdominal bloating, nausea/indigestion, increased perspiration, poor concentration and forgetfulness, itching and skin problems, depression, irritability, mood swings, adverse reactions to alcohol, loss of appetite, diarrhoea and irritable bowel syndrome

## **Hepatitis D**

### ***Overview***

Hepatitis D is a liver disease caused by the hepatitis D virus, a defective virus that needs the hepatitis B virus to exist. Infection can occur as a co-infection, which means it occurs at the same time as hepatitis B infection; or it can occur as a superinfection in people who already have chronic hepatitis B.

People who are co-infected with hepatitis B and hepatitis D may experience a more seriously acute illness and have a higher risk (2%–20%) of developing acute liver failure compared to people infected with hepatitis B alone. However, most people who are co-infected will clear hepatitis D and never develop chronic hepatitis D infection.

People with chronic hepatitis B who are infected with hepatitis D (superinfection) usually develop chronic (long term) hepatitis D infection. Long-term studies of people with hepatitis D superinfection show that between 70% and 80% develop cirrhosis (liver scarring) compared to 15% to 30% of people with chronic hepatitis B alone.

Infection with hepatitis D can be prevented by the hepatitis B vaccine. Diagnosis can be made by a blood test. There is no specific treatment for hepatitis D. Research indicates that the medication used to treat hepatitis B has a limited effect on the activity of hepatitis D virus.

### ***Prevalence***

Worldwide the pattern of hepatitis D infection is similar to the occurrence of hepatitis B infection and it has been estimated that 15 million people with hepatitis B are infected with hepatitis D. Hepatitis D is not a common infection in Australia. Over the past 6 years there have been between 20 and 30 cases diagnosed and reported each year. (NNDSS)

### ***Transmission***

Hepatitis D is spread in similar ways to hepatitis B because the virus is found in blood. Therefore, whenever blood from an infected person enters the bloodstream of a person who is not immune there is the risk of transmission. For example, hepatitis D infection can occur through sharing injecting equipment, or through needlestick or sharps injuries. It is less common for hepatitis D to be spread through sexual contact, or mother to baby transmission compared to hepatitis B.

### ***Symptoms***

Symptoms of hepatitis D include loss of appetite, nausea and vomiting, tiredness, pain in the liver (upper, right side of abdomen), muscle and joint pain, and jaundice (yellowish eyes and skin, dark urine and pale-coloured faeces).

## **Hepatitis E**

### ***Overview***

Hepatitis E is caused by an infection with hepatitis E virus. Hepatitis E does not develop into a chronic (life-long) infection, however, the infection is more severe among pregnant women in the third trimester.

In general, people with hepatitis E recover with no long lasting illness. There is a very small chance (1–4%) of developing sudden and life threatening liver disease. Pregnant women who become infected with hepatitis E are at greater risk of severe illness and liver failure and 20% may die because of the infection. However, this occurs mainly in developing countries where hepatitis E is very common and where there is limited healthcare for pregnant women.

Diagnosis of hepatitis E is performed by a blood test that detects either the antibodies or the virus itself. The blood tests needed to diagnose hepatitis E are not widely available.

At present, no vaccine exists for the prevention of hepatitis E, and there is no treatment: as it is caused by a virus, antibiotics are of no value in the treatment of the infection. Bed rest and fluid replacement is recommended.

Travellers to developing countries are advised to take precautions against drinking contaminated water (including beverages with ice), eating uncooked shellfish and uncooked fruits and vegetables that are not peeled or prepared by the traveller. They also need to be aware of personal hygiene including hand washing.

### ***Prevalence***

The highest rates of hepatitis E infection occur in regions where there is poor sanitation and sewage management that promotes the transmission of the virus. For example, hepatitis E is common in Central and South-East Asia, North and West Africa and Mexico.

Hepatitis E is not a common cause of liver disease in Australia. Over the last six years, there have been approximately 10 to 30 cases of hepatitis E diagnosed and reported to the government each year.

### ***Transmission***

Hepatitis E is found in the faeces and spread via the faecal-oral route, similar to hepatitis A. Drinking or eating contaminated water or food could result in infection. Person-to-person transmission of hepatitis E is uncommon. There is no evidence that hepatitis E is spread sexually or through blood or blood product transfusion.

### ***Symptoms***

Symptoms may include fever, weakness, fatigue, loss of appetite, nausea, vomiting, and jaundice (yellowish eyes and skin, dark urine and pale-coloured faeces).