

Mirco-organisms

Many living organisms such as plants, animals and humans are large enough to be seen with the eye only. Other living organisms are so small that we need a powerful microscope to see them, these are called **microbes**. There are 5 types of living mirco-organisms, they are called;

- **Bacteria** – are single-celled spherical, spiral or rod-shaped organisms. Examples include Salmonella which causes food poisoning, Streptococcus pyogenes which causes sore throats, Streptococcus Mutans which causes dental decay
- **Viruses** – are parasites, which means that they can only survive inside the cells of other living things. They cause very infectious diseases such as chicken pox, measles and conjunctivitis. Viruses are the smallest of mirco-organisms and can only be seen with a very powerful microscope. In dentistry we have to be aware of Hepatitis B and HIV (**Human immunodeficiency virus**) which are spread by body fluids such as blood and saliva
- **Fungi** – can be many different sizes ranging from microscopic single celled yeasts used in bread and beer making to the marcoscopic fungi which contain many cells such a moulds, mushrooms and toadstools. In dentistry we have Candida Albicans which can cause infetions under dentures or white patches in the mouth on patients who are very ill.
- **Algae** – can be many different sizes from the microscopic single celled diatoms used in toothpastes to the marcoscopic algae which contain many cells like seaweed.
- **Protozoa** – are single celled organisms which can cause diseases such as malaria and sleeping sickness. They can also be useful, for example in the treatment of sewage where they eat the harmful bacteria making it safe for disposal.
- **Spores** -any small organism or cell that can develop into a new individual; seed, germ, etc

Hepatitis – (Inflammation of the liver).

Viruses can lead to diseases such as **Hepatitis A,B and C**.

Hepatitis A – Is a highly infectious disease caused by the hepatitis virus. It is common world wide especially where sanitation is poor. At first there is fever, tiredness, weight loss, nausea and abdominal pain usually followed by jaundice within a few days. The disease is usually mild and patients could expect to make a full recovery.

Hepatitis A is spread by food and water that has been contaminated by faeces. Persons infected by the virus excrete the virus and are infective (can pass on the disease to someone else) for about two to three weeks before the onset of the disease and for up to two weeks afterwards. During this time poor hygiene practices such as not washing hands after the toilet and before handling food will spread the virus. Because hepatitis A is spread by faeces, contaminated food and water, transmission in the dental surgery is highly unlikely.

Hepatitis B – Is a much more severe disease than Hep A. It is caused by the Hep B virus. At first there may be weight loss, nausea, vomiting, abdominal pain, rash or joint pain. Fever does not always occur and jaundice may appear later. Unlike Hep A where there is a complete recovery some patients with Hep B develop chronic liver infection and may continue to carry the virus in their blood for a long period of time even a lifetime. The virus stays in these patients even though they have no symptoms of the disease. These carriers are a potential source of infection to others.

The Hepatitis B virus (HBV) is transmitted by contact with infected tissues including blood and other body fluids. In the dental surgery accidental exposure to blood, saliva and body fluids of infected patients can transmit the virus. People who are acutely or chronically infected with HBV may be infectious to others.

Needle stick and other sharps injuries are especially serious because all penetrating (sharp goes through the skin) injuries have the potential to transmit viruses including hepatitis B. The virus may also be transmitted by splashes of infected blood/body fluids into eyes, mouth or nose.

The risk of transmission of HBV from patients to staff (who have not had the HBV vaccine) following a needle stick injury will depend on the HBV blood levels of the source patient.

Hepatitis C – This infection is an increasing concern for healthcare workers. It is caused by infection with the hepatitis C virus and causes symptoms such as nausea, fatigue, jaundice and abominable pain similar to other forms of hepatitis.

For many patients Hepatitis C is a long term, chronic illness that may eventually result in the development of chronic liver disease, scarring of the liver and cancer. Hepatitis C infection is now a leading cause of liver disease.

Acutely and chronically infected patients are infectious. In the dental surgery hepatitis C virus (HCV) can be transmitted to staff by exposure to infected blood or other body fluids. Such an exposure is especially serious because there is no vaccine for Hepatitis C.

Human Immunodeficiency Virus (HIV)

Within the first few weeks of infection with HIV there is a brief illness. At first there may be fever, joint pain, headache, nausea, swollen lymph glands and a fine pink rash. After this there may be no symptoms for several years. During this period though the virus continues to grow in special white blood cells in the body.

Eventually the huge numbers of virus particles produced destroys these cells quicker than the immune system can produce them. These white blood cells are essential for the normal function of the immune system that is the body's defence against diseases. As the immune system deteriorates the infected person becomes susceptible to a variety of diseases. These include infections and cancers.

The early signs of HIV infection often appears in the mouth with patients developing a wide range of fungal, viral and bacterial infections. General dental treatment should not be avoided simply because a patient is HIV positive, especially as good oral hygiene helps to delay the development of serious oral infections.

In a dental clinic patient's health should not affect the way the clinic is prepared or cleared. Standard Infection Control Procedures should be for all patients.