Hepatitis D (HD or delta hepatitis) is associated with hepatitis B (requiring co-infection, with similar mode of transmission).

**Is the initiation of non-invasive dental hygiene procedures* contra-indicated?** Yes, if the patient/client has active hepatitis (acute or chronic). [Note: HB and HD have chronic, life-long carrier states, which do not necessarily preclude dental hygiene procedures, but for which standard precautions should be exercised.]

- Is medical consult advised? ........................................... Yes, if patient/client is not receiving ongoing medical care/monitoring for chronic carrier state or significant morbidity (e.g., end-stage liver disease).
- If patient/client has history or systemic manifestations suggestive of active hepatitis (acute or chronic), prolonged bleeding time, severe liver disease, or previously undiagnosed chronic carrier state, timely referral to physician is indicated for definitive diagnosis and assessment of degree of infectivity and liver dysfunction (e.g., serology and liver enzyme/function blood tests), as well as management (including potential hepatologist — liver specialist — involvement and consideration of antiviral therapy). Instruct patient/client to reschedule dental hygiene appointment when medical clearance has been obtained.

**Is the initiation of invasive dental hygiene procedures contra-indicated?** Yes, if the patient/client has active hepatitis (acute or chronic) or prolonged bleeding time. [Note: HB and HD have chronic, life-long carrier states, which do not necessarily preclude dental hygiene procedures, but for which standard precautions should be exercised.]

- Is medical consult advised? ........................................... See above.
- Is medical clearance required? ........................................... Yes, if active hepatitis (acute or chronic) or prolonged bleeding time or severe liver disease is suspected on the basis of history and/or examination. Also, medical clearance may be required if patient/client is being treated with antiviral medications associated with immunosuppression +/- increased risk of infection +/- prolonged haemostasis (e.g., interferon, lamivudine, adefovir, dipivoxil, telbivudine, entecavir, and tenofovir). Patients/clients on antiviral therapy should be assessed by their physician prior to invasive dental procedures to ensure safety. Non-urgent oral treatment may need to be postponed until antiviral therapy has ceased.
- Is antibiotic prophylaxis required? ........................................... No. However, patients/clients with severe liver disease may be more susceptible to dental infection; selection of antibiotic should be based on risk and severity of infection.
- Is postponing treatment advised? ........................................... Yes, if the patient/client has active hepatitis (acute or chronic) or is not receiving ongoing medical care/monitoring for severe liver disease or chronic carrier state, or if prolonged bleeding time is suspected. See “medical consult” above.

**Oral management implications**

- Mode of transmission: percutaneous (IV, IM, SC, intradermal) and permucosal exposure to infective body fluids (including blood, saliva, and semen/vaginal secretions; this includes human bites); indirect inoculation of HBV can occur via inanimate objects (because HBV is stable on environmental surfaces for at least 7 days); major modes of HBV transmission include sexual or close household contact (e.g., sharing toothbrush, razor, or nail clippers) with an infected person, perinatal mother-to-infant transmission, injection drug use (needle sharing), and nosocomial (healthcare-related) exposure (e.g., needle stick injuries and blood splashes to eye, nose, mouth, or broken skin); tattooing and body piercing (involving sharing of needles, ink, or other blood equipment) can also spread HBV. Blood product recipients in Canada are at virtually no risk of HBV acquisition due to pretransfusion screening and product processing; however, risk is still present in many developing countries where such measures are not in place.
**Disease/Medical Condition**

**HEPATITIS B**

(also known as "HB", "Type B hepatitis", and "serum hepatitis"; caused by hepatitis B virus – HBV)

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### Oral management implications *(cont’d)*

- All patients/clients who are HBV DNA positive (via PCR\(^1\) testing) or surface antigen (HBsAg) positive are potentially infectious (and persons who are also e-antigen [HBeAg] positive are particularly so). HBsAg may appear as short as 2 weeks, and rarely as long as 6–9 months, following infection with HBV, and it persists until the infection resolves. Blood from infected persons may be infective to others weeks before the onset of first symptoms (usually 45–180 day incubation period after infection, averaging 120 days), and it remains infective through the acute clinical course of the disease. 5% to 90% of persons (inversely related to age) contracting HB become chronic carriers of hepatitis B virus; i.e., they are potentially infectious for life.

- HBV infection poses a significant transmission risk (about 100 times greater than HIV and about 10 times greater than hepatitis C virus) after occupational exposure to blood.

- If you, the dental hygienist, develop hepatitis B surface antigenemia (HBsAg positive), you should seek medical advice regarding whether you may perform exposure-borne procedures, particularly if there is a potential epidemiological link to transmission of disease.

- If you, the dental hygienist, contract hepatitis B, you should seek medical advice regarding whether you may perform exposure-prone procedures. This medical assessment should take into account whether there is hepatitis B e-antigenemia (HBeAg positive).

- Due to its high infectivity potential, common occurrence, and potential for life-threatening complications, HBV presents the greatest hazard of all the various hepatitis viruses to the non-immune dental hygienist. Thus, all dental hygienists/hygiene students should be immunized against hepatitis B. A three-dose schedule is typical for adult healthcare personnel, and booster doses are not necessary for persons who have developed adequate antibodies (anti-HBs). In Ontario's publicly funded immunization program, a school-based two-dose schedule exists for Grade 7 students.

- After percutaneous (e.g., needle stick) or mucous membrane exposure to blood from an HBV positive or HBsAg positive patient/client, post-exposure prophylaxis (with hepatitis B immune globulin [HBIG] and vaccine) should be commenced for previously unimmunized persons within 24 hours of exposure. For previously immunized persons (which should include dental hygienists), post-exposure prophylaxis is not needed when there is a protective antibody response (i.e., anti-HBs titre of 10 IU/L or greater); for persons whose response to immunization is unknown, hepatitis B vaccine and/or HBIG should be administered.

- Certain drugs requiring or affecting liver metabolism may need to be avoided or reduced in dosage in patients/clients with liver disease (e.g., acetaminophen, aspirin, ibuprofen, codeine, local anaesthetics, and some antibiotics).

- Excessive bleeding (due to reductions in coagulation factors and platelets) may occur in patient/clients with end-stage liver disease; these persons may need vitamin K and/or platelet or clotting factor replacement for certain oral procedures.

- Portal hypertension\(^2\) in patients/clients with end-stage liver disease may result in low systolic blood pressure; therefore blood pressure should be monitored in such persons.

- Patients/clients with chronic active HB may be on antiviral therapy, which can impact oral care (see above and below).

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1. PCR = polymerase chain reaction.
2. Portal hypertension is an increase in the blood pressure of the portal venous system. Veins coming from the stomach, intestine, spleen, and pancreas merge into the portal vein, which then branches as it travels through the liver. If the branching vessels are blocked due to liver damage, blood cannot flow properly through the liver. This results in increased pressure in the portal vein, which may lead to the development of varices (large, swollen veins) within the esophagus, stomach, rectum, or umbilical area. Varices can rupture, resulting in potentially life-threatening complications.

*cont’d on next page...*
HEPATITIS B
(also known as “HB”, “Type B hepatitis”, and “serum hepatitis”; caused by hepatitis B virus – HBV)

Oral manifestations

- The oral mucosa may have a yellow-brown cast during the icteric (jaundice) phase of acute hepatitis, and dysgeusia (altered, usually unpleasant, taste) may also occur.
- Abnormal bleeding can result from chronic hepatitis and significant liver damage (or cirrhosis).
- Chronic viral hepatitis increases risk for hepatocellular carcinoma (liver cancer), which may rarely metastasize to the jaw. Oral metastases manifest as hemorrhagic expanding masses located in the ramus and premolar region of the mandible.
- Antiviral therapy used in the treatment of hepatitis B may result in oral side effects. For example, interferon may cause dry mouth; bleeding, tender or enlarged gums; and dysgeusia (bad taste).

Oral management implications (cont’d)

- Prior to commencing anti-HBV therapy, active oral disease should be managed. Failure to do so may delay the onset of treatment for HB.
- In Ontario, hepatitis B and D are specified Reportable Communicable Diseases (as per Ontario Regs 559/91 and amendments under the Health Protection and Promotion Act). Thus, physicians and laboratories are obligated to report these diseases to the local Medical Officer of Health so the local public health unit can ensure affected persons are appropriately managed and further disease transmission is minimized.
- To reduce oral acquisition and spread of viral hepatitis (and other sexually transmitted illnesses), condoms or dental dams should be used for all oral-genital and oral-anal contact.

Related signs and symptoms

- Viral hepatitis is inflammation of the liver resulting from certain viral infections. (Hepatitis may also result from chemical agents, such as alcohol and certain drugs.)
- The incidence of HB has decreased in Canada in recent years coincident with increasing use of HB vaccine. Canada is an area of low HB endemicity, with less than 5% of residents having markers of past infection and less than 1% being carriers. However, it is estimated that there are more than 300 million HB carriers worldwide, and HB remains highly or moderately endemic in much of Asia, Africa, South America, and Eastern Europe. A high proportion of HB carriers in Canada are immigrants from HB endemic areas. Most new infections in Canada occur in young adults, particularly those belonging to known risk groups. In highly endemic countries most infections occur during infancy and early childhood.
- Following the incubation period, the clinical course of acute viral hepatitis B manifests variably in the prodromal (pre-icteric/pre-jaundice) phase as malaise, fatigue, weakness, decreased appetite, nausea, vomiting, right upper quadrant (liver) abdominal discomfort, and fever. The non-specific prodromal signs/symptoms may last for several weeks or up to several months, depending on the extent of HBV infection and the immune status of the host. The icteric phase (which occurs in a minority of infected persons) is heralded by the onset of jaundice (yellow-brown discoloration resulting from bilirubin accumulation) of the conjunctivae and skin (and oral mucosa). Dark urine may also occur, and stool colour may lighten, often in association with pruritus (itchiness). In severe cases, enlargement of the liver and spleen may occur. During the convalescent or recovery (post-icteric) phase, symptoms disappear, but hepatomegaly (liver enlargement) and abnormal liver function values may persist for a variable period.
HEPATITIS B
(also known as “HB”, “Type B hepatitis”, and “serum hepatitis”; caused by hepatitis B virus – HBV)

Related signs and symptoms (cont’d)

■ About 70% of persons who become infected with HBV do not manifest any overt acute signs/symptoms, with a minority experiencing signs/symptoms from a few days to 8 weeks following the incubation period. About 30% of persons contracting hepatitis B become jaundiced to some degree; anicteric infection (absence of jaundice) is particularly common in children, and is usually associated with milder symptoms.
■ HBV infection is infrequently associated with clinical syndromes, including polyarteritis nodosa (a form of systemic vasculitis), glomerulonephritis (a form of inflammatory kidney disease), and leukocytoclastic vasculitis (a form of cutaneous vasculitis). Fulminant hepatitis, coagulaopathy (involving increased bleeding time), encephalopathy, and cerebral edema are rare manifestations.
■ 90% of newborns infected with HBV become carriers with chronic HBV infection versus 30% of infants and fewer than 10% of adults. Chronic active hepatitis B develops in 2% to 7% of adults infected with HBV; this can eventually result in cirrhosis (scarring of the liver) or liver cancer.
■ Chronic hepatitis is associated with liver abnormalities, but it is often asymptomatic for 10 to 30 years. Signs of advanced liver disease include bleeding esophageal varices, ascites (fluid in the abdomen), jaundice, spider angiomas3, and dark urine.
■ Carriers of HBV can appear healthy and symptom-free and still spread infection to others.

References and sources of more detailed information

■ Middlesex-London Health Unit  http://www.healthunit.com/sti-hepatitis-b

3 enlarged arterioles – resembling the body of a spider – from which smaller blood vessels emanate near the surface of the skin – resembling spider’s legs
Disease/Medical Condition

HEPATITIS B

(also known as “HB”, “Type B hepatitis”, and “serum hepatitis”; caused by hepatitis B virus – HBV)

References and sources of more detailed information (cont’d)


* Includes oral hygiene instruction, fitting a mouth guard, taking an impression, etc.

** Ontario Regulation 501/07 made under the Dental Hygiene Act, 1991. Invasive dental hygiene procedures are scaling teeth and root planing, including curetting surrounding tissue.

Date: January 27, 2015