Is the initiation of non-invasive dental hygiene procedures* contra-indicated?  Yes, if the patient/client is known to be contagious and/or has significant morbidity. Limiting exposure to a potentially infectious patient/client is particularly desirable if you, the dental hygienist, may be pregnant and have not had a previous primary CMV infection (due to small risk of significant congenital CMV disease). However, because of the high prevalence of asymptomatic shedders in the population, knowledge of potential infectiousness of patients/clients is usually not known. Most CMV infections go undiagnosed, because the virus causes little or no symptoms.

- Is medical consult advised? .......................... Yes, if the diagnosis is uncertain and/or the patient/client is not already under medical care for severe disease.

Is the initiation of invasive dental hygiene procedures contra-indicated?** Yes, if the patient/client is known to be contagious and/or has significant morbidity. See above.

- Is medical consult advised? .......................... See above.
- Is medical clearance required? ........................ No.
- Is antibiotic prophylaxis required? ....................... No.
- Is postponing treatment advised? ....................... Yes, ideally during the period of communicability (see below), but practically this is difficult to ascertain. Therefore, standard precautions are always indicated.

Oral management implications

- **Mode of transmission** is via direct mucosal contact with infectious tissues, secretions, and excretions, including saliva and urine (especially from babies and young children), tears, breast milk, cervical and vaginal secretions, and semen. Transmission through sexual intercourse is common. Transmission can also occur transplacentally from mother to fetus, via organ or bone marrow transplantation, and parenterally through transfusion of blood and blood products (for which risk is greatly reduced in Canada, because of leukoreduction for all donations and CMV antibody testing).
- The incubation period for horizontally transmitted infections (i.e., not parent-child transmission) is unknown. Illness following transplantation of an infected organ or bone marrow begins within 3 to 16 weeks.
- Virus is secreted in saliva and urine for many months after primary infection, and may continue or be episodic for several years. Many children in daycare centres excrete CMV, and children with congenital CMV infection may excrete virus for up to 6 years. Adults excrete virus for shorter periods, and excretion recurs with immunodeficiency and immunosuppression. Although the virus is not highly contagious, spread among household members and young children in daycare is common.

---

1. Humans are the only reservoir of human CMV; strains found in many animals are not infectious for humans.
2. Only 1% to 7% of women are infected for the first time with CMV (primary CMV) during pregnancy.
3. While laboratory diagnosis of CMV infection in newborns via saliva, urine, or blood is relatively straightforward using virus isolation, polymerase chain reaction (PCR), or CMV-antibody testing, it is more complicated in adults, because of the high frequency of asymptomatic and recurrent infections.
4. In immunocompromised persons and neonates with severe congenital CMV disease, various antiviral drugs (such as ganciclovir, valganciclovir,cidovir, and foscarnet) are used for treatment and/or prophylaxis. No antiviral drug is currently available for prevention of congenital CMV infection. Healthy people who are infected with CMV do not usually require medical treatment.
5. Leukoreduction is the removal of leukocytes (white blood cells) from blood or blood components. CMV is carried by leukocytes.

---

*cont’d on next page…*
Disease/Medical Condition

CYTOMEGALOVIRUS DISEASE

(also known as “CMV disease” and “human CMV disease” [HCMV disease]; caused by cytomegalovirus [also known as human [beta] herpesvirus 5, or HHV-5])

Oral management implications (cont’d)

- No commercially available vaccine exists to prevent CMV infection, although experimental vaccines are being studied.
- Regular hand washing, particularly after contact with body fluids of young children (including changing of diapers), decreases the spread of CMV.
- Healthcare providers should follow standard infection control precautions.
- Controversially, some authorities propose that oral health practitioners should consider a virology evaluation for patients/clients who appear to be nonresponsive to traditional periodontal therapy. However, research evidence for this proposal is currently weak.

Oral manifestations

- Aphthous-like ulcers may occur throughout the oral cavity (including hard palate, soft palate, floor of mouth, and tongue), particularly in immunocompromised patients/clients. In addition, large, chronic CMV-related ulcers of the oral mucosa and gingiva occur exclusively in severely immunodeficient persons, notably in severe HIV/AIDS.
- CMV sialadenitis may occur in adults who are immunocompromised or in neonates as a result of transplacental viral transmission. Such infection of the salivary glands is associated with localized swelling, tenderness, and sometimes erythema.
- Salivary gland tumours (specifically, mucoepidermoid carcinomas) have been linked to CMV, which some authorities consider to be an oncovirus (i.e., virus that can cause cancer).
- Whether CMV and other herpes viruses are linked to periodontitis and its progression is a controversial area of ongoing research.

Related signs and symptoms

- CMV is a common virus that infects persons of all ages. In North America, nearly one-third of children are already infected by age 5 years. In developed countries, the prevalence of congenital CMV infection ranges from 0.2% to 2.0%, and it is even higher in developing countries. Like other herpes viruses, CMV establishes latent infection (in which it is not actively reproducing and causing illness) that may later reactivate into active infection. By age 40 years, 50% to 80% of North American adults have been infected with CMV. A person can also be reinfected with a different strain of the cytomegalovirus.
- Most healthy people who acquire CMV infection have no symptoms and no long-term health consequences. In others, it often passes as an undiagnosed, mild febrile illness without specific characteristics. In addition to fever, infection in healthy people may manifest as sore throat, fatigue, muscle and joint pain, decreased appetite, and swollen lymph nodes.
- CMV mononucleosis syndrome (which resembles infectious mononucleosis caused by the Epstein-Barr virus) occasionally results from primary infection with CMV in immunocompetent persons. This syndrome includes prolonged fever (lasting 2 to 3 weeks), malaise, cervical lymphadenopathy, mild hepatitis (inflammation of the liver), and, sometimes, encephalitis.
- CMV primary infection, reactivation, or reinfection can cause serious illness in persons with weakened immune systems (including persons with AIDS, or those with leukemia or lymphoma who are receiving chemotherapy), such as hepatitis and disseminated infection. Such dissemination may entail pneumonitis/pneumonia (manifesting as shortness of breath), retinitis (manifesting as visual problems), and gastrointestinal disorders (including esophagitis, gastritis, enteritis, and colitis).

---

6 Best prevention practices also include avoiding the sharing of food, drink, and eating utensils, as well as avoiding sharing saliva (e.g., kissing and child’s pacifier).
7 Enteritis is inflammation of the small intestine, often accompanied by diarrhea. Other signs/symptoms include fever, nausea, vomiting, and abdominal pain.

cont’d on next page...
# Disease/Medical Condition

## CYTOMEGALOVIRUS DISEASE

(also known as “CMV disease” and “human CMV disease” [HCMV disease]; caused by cytomegalovirus [also known as human [beta] herpesvirus 5, or HHV-5])

### Related signs and symptoms (cont'd)

- CMV is a common cause of post-transplantation infection, both for bone marrow and solid organ transplants. Symptomatic infection occurs in 10% to 40% of transplant recipients.
- The fetus may be infected from primary maternal infection, maternal reinfection with a new CMV strain, or reactivation of latent maternal infection. While most intrauterine infections are due to maternal reactivation or reinfection, fetal infection with manifest disease at birth occurs most frequently after maternal primary infection. Risk of transmission is greatest in the third trimester whereas risk of complications to the infant is greatest if infection occurs during the first trimester. The most severe form of the disease develops in about 10% of fetuses infected in utero. Death may occur in utero (i.e., miscarriage), premature birth is a concern, and the case fatality rate is high in severely affected infants.
- A small minority of children born with CMV is severely affected with brain, eye, lung, liver, spleen, and/or growth problems. In particular, congenital CMV infection can lead to hearing loss and mental retardation. While 1 in 150 babies are born with CMV infection, only about 1 in 5 of such infants will be sick from the virus or have long-term health problems.

### References and sources of more detailed information

- Dimensions of Dental Hygiene [http://www.dimensionsofdentalhygiene.com/2015/12_December/Features/Beyond_Bacteria.aspx](http://www.dimensionsofdentalhygiene.com/2015/12_December/Features/Beyond_Bacteria.aspx)
- Centers for Disease Control and Prevention (U.S.) [https://www.cdc.gov/cmv/](https://www.cdc.gov/cmv/)
- National Health Service Choices (U.K.) [http://www.nhs.uk/Conditions/Cytomegalovirus/Pages/Introduction.aspx](http://www.nhs.uk/Conditions/Cytomegalovirus/Pages/Introduction.aspx)

* 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:** March 15, 2017