



Cytomegalovirus (CMV) Infection

What is cytomegalovirus infection?

A very common viral infection in children

What are the signs or symptoms?

- Generally, no symptoms occur in young children.
- Older children and adults may have a generalized illness with fever. Sometimes the liver or spleen may become enlarged.
- Cytomegalovirus (CMV) infection of a pregnant mother's fetus can be very harmful.

What are the incubation and contagious periods?

Probably several weeks to months. Once a person is infected, the virus is shed intermittently in the saliva and urine for the rest of that person's life. Up to 70% and usually 30% to 40% of normal children aged 1 to 3 years in early childhood education (ECE) settings excrete CMV in their saliva and urine, respectively. Nearly everyone is infected with CMV during their lifetime.

How is it spread?

- Person-to-person contact with blood, saliva, urine, human (breast) milk, and other secretions from infected people
- Mother to baby before, during, and after birth
- Blood transfusions from an infected person
- During kissing and sexual activities

How do you control it?

- Attention to proper hand-hygiene technique at all the times listed in Chapter 2. This is especially important for women of childbearing age who work with young children or whose young children are enrolled in ECE settings. Avoid exchange of saliva directly or via objects (eg, moistening a pacifier with the mouth), and wash hands and objects carefully after contact with urine.
- Do not kiss children on the lips or allow them to put their fingers or hands in another person's mouth.
- Do not share cups or eating utensils.

What are the roles of the educator and the family?

- Use good hand-hygiene technique at all the times listed in Chapter 2.
- Review Standard Precautions, particularly hand hygiene, especially for women of childbearing age who work with or have their own children younger than 3 years who participate in educational settings.
- Women of childbearing age who have any contact with groups of children or have their own children younger than 3 years who participate in ECE settings should discuss their risk of CMV exposure with their health professionals. Although most women are already immune to some strains of CMV, the potential consequences to the fetus exposed to a strain of CMV to which the mother is not immune can be very serious. Risk-reduction measures include conscientious handwashing. Staff members who care for children may consider taking care of older children or working in an administrative role during pregnancy. Programs should inform these women about the risk to their fetus if they become pregnant, urge them to discuss this risk with their health professional, and have them sign a document indicating their understanding of this risk. (See Letter to Staff About Occupational Health Risks and Staff Health Assessment Form in Chapter 8.)

Exclude from educational setting?

No, unless

- The child is unable to participate and staff members determine they cannot care for the child without compromising their ability to care for the health and safety of the other children in the group.
- The child meets other exclusion criteria (see Conditions Requiring Temporary Exclusion in Chapter 4).

Readmit to educational setting?

Yes, when all the following criteria are met:

When exclusion criteria are resolved, the child is able to participate, and staff members determine they can care for the child without compromising their ability to care for the health and safety of the other children in the group

Comments

- Cytomegalovirus is the most common viral infection that babies are born with, affecting 0.5% to 1.0% of all births. Most infected newborns do not have any illness or disability. However, 10% to 20% of infected newborns have sensorineural hearing loss, developmental disabilities, cerebral palsy, or vision disturbances.
- The risk of CMV exposure is greatest in settings in which children who are younger than 3 years are cared for. It must be assumed that exposure to the virus among children and caregivers will occur. Hand hygiene substantially reduces but does not eliminate the spread of infection because young children have frequent runny noses, drool on and mouth objects, touch many surfaces, and need diapering or toileting assistance.
- Because this virus is so common in ECE settings, exclusion of a CMV-infected child to reduce disease transmission has no benefit. Testing young children for excretion of the virus or performing CMV antibody tests for young children because they are in an ECE setting is not appropriate because infection with the virus is so prevalent.
- Cytomegalovirus exposure risk during pregnancy: Although most adults have their first CMV infection during childhood and are immune to the strains of CMV that have infected them, a pregnant woman who works with infants and toddlers or who is a mother with a child in an ECE program is at increased risk of having a CMV infection during her pregnancy and infecting her fetus. This could be her first CMV infection or an infection with a different strain of CMV than she previously experienced. To alert health professionals responsible for the health assessment of staff members of childbearing age about the need of their patient to be counseled

about CMV risk, ECE program directors/administrators should be sure CMV risk assessment and counseling are items on the staff health assessment form. In addition, it may be helpful for directors/administrators to attach this Quick Reference Sheet and the Fifth Disease (Human Parvovirus B19) Quick Reference Sheet to the note in the box below to help health professionals review with their patient the increased risk of exposure to the fetus if the woman is infected during her pregnancy. Health professionals are not necessarily aware of the increased exposure to these viruses for women who work with young children in ECE programs.

Dear Health Professional:

Your patient works in a setting where she has contact with young children in groups. Human parvovirus B19 and cytomegalovirus (CMV) occur commonly and are often asymptomatic among young children. Exposure of a woman who lacks immunity to human parvovirus B19 and/or CMV during pregnancy poses some risk to her fetus. Please discuss with your patient her childbearing intentions and whether she might want to consider the following risk-reduction measures when she might become pregnant:

- Conscientious handwashing after any contact with saliva, urine, or blood
- Care of children who are older than 3 years
- Working in a role other than direct care of young children

About Serologic Testing

Because different strains of CMV circulate among young children, especially those in early childhood education programs, a serologic test for CMV informs about risk but does not completely guarantee immunity from exposure to novel strains. However, a serologic test for human parvovirus B19 is a reliable indicator of immunity.

