

Cytomegalovirus (CMV) and Transplantation
Frequently Asked Questions

Quick Definitions:	
<i>CMV: Cytomegalovirus</i>	<i>Valganciclovir: an anti-viral drug to help prevent or treat CMV infection</i>
<i>Prophylaxis: treatment to help prevent disease</i>	
What is a virus?	
Viruses are tiny organisms able to enter the cells of your body. Viruses are able to spread in your body by using your own cells to multiply. Depending on how quickly the virus is able to multiply and spread, some viruses can interfere with your cell and prevent them from working normally. Many viruses do not cause any problems but some may lead to significant disease and require medical care.	
What is CMV?	
CMV stands for cytomegalovirus. It is a very common virus and most of the adult population in Canada have it. CMV is belongs to the same family of viruses that cause herpes.	
Can CMV cause disease in the general public?	
In people with a healthy immune system, CMV does not tend to cause any problems. If someone gets infected with CMV it can lead to mild infection causing fatigue or fever. Symptoms often look like the common cold. A healthy immune system will take care of this and CMV does not usually cause major problems for the general population. After an infection, CMV stays in the body, usually inactive, for the rest of your life. A CMV test will show evidence of a previous infection. Sometimes, the virus can be triggered, start multiplying again and then cause infection. Things that can trigger the virus include stress, immunosuppression and inflammation.	
How is CMV spread?	
Like most viruses, CMV can be passed from one person to another through contact with bodily fluids. This includes blood and organs for transplant.	
What are the symptoms of CMV infection?	
CMV infection can cause many different symptoms. Most people in the general public with a CMV infection have no symptoms. They often do not even know that they have CMV. Some patients can present with symptoms however. Some symptoms can be very mild but they can also be much more serious. In rare cases, typically in immunocompromised individuals, CMV infection can lead to death. Symptoms can include:	
<ul style="list-style-type: none"> • Tiredness (fatigue) • Shortness of breath • Muscle aches 	<ul style="list-style-type: none"> • A fever • Swollen lymph nodes • Low white blood cell count (leukopenia)
Because CMV can infect different organs in the body, some symptoms can be related to where the infection is.	
<ul style="list-style-type: none"> • CMV in the eye can cause blurry vision or loss of vision. • CMV in your gut (colon) or stomach can cause abdominal pain, nausea, vomiting or diarrhea or blood in stools (CMV colitis or CMV gastritis). • CMV in your lung can cause symptoms very much like those you get with a viral pneumonia. • CMV in your brain can cause seizures, headaches, confusion or coma (CMV encephalitis). 	
What is the process for CMV testing with transplant?	
During your assessment for transplant, you undergo many tests including checking for any viruses in your body. You will be tested for CMV. You will be tested again for CMV when you are admitted to the hospital for transplant. This is because while you may have tested negative at first, there is a chance that you could have been exposed to the virus during your wait for transplant and are now positive. It is very important that we know what your current CMV test result is. Before donation, donors are also tested for many of these same viruses including CMV. Your Transplant Team will always check to see what the donor CMV status is and compare it to yours. If there is a risk of giving you CMV from your donor or triggering CMV that you already have, your Transplant Team will prescribe an anti-CMV medicine for you after your transplant to help prevent CMV disease. This type of treatment is called ' prophylaxis '.	

How is CMV infection diagnosed?			
<p>After your transplant, your Transplant Team will watch you for signs of active CMV infection. It is important that you report any symptoms to your Team.</p> <p>CMV infection can be difficult to diagnose. Symptoms of CMV infection are the same symptoms experienced with many other illnesses. If your Transplant Team suspects CMV, there are several tests you can have:</p> <ul style="list-style-type: none"> • Blood work – there are some tests that are more accurate in seeing if you have CMV and your Team will have these done if necessary • Biopsy of the area where the CMV infection is suspected to be 			
Am I at higher risk for CMV disease after transplant?			
<p>Yes. When you receive an organ transplant, you are placed on anti-rejection drugs which slow down your immune system and help prevent rejection. Because of this, your immune system is not as effective in clearing viruses from your body including CMV.</p> <p>Your risk of developing CMV infection after transplant depends on a lot of different things including your age, other health problems you may have and if you have rejection. One risk factor is your CMV status before transplant and your donor's CMV status. This chart shows part of the picture but remember that there are many factors involved.</p>	Your CMV	Donor's CMV	Your Risk
	Positive	Positive	Some Risk
	Positive	Negative	Very Low
	Negative	Positive	High risk
	Negative	Negative	Very Low
Will I need to take a medication to prevent CMV disease?			
<p>Depending on your risk factors, you will need to take Valganciclovir to prevent CMV disease after your transplant. Valganciclovir is an anti-viral drug used to prevent and treat infections caused by CMV. Valganciclovir is not a cure for CMV. It works by slowing the growth of the virus and limits the spread to other areas of the body. Your Transplant Team can give you an Medication Information Sheet about this drug.</p>			
Is there a treatment if you develop CMV infection?			
<p>Yes. You will usually be sent to see the Transplant Infectious Diseases Specialist to help manage your infection. The same medication, Valganciclovir, is used to treat CMV infection. Depending on your disease, you may require the intravenous (IV) form of valganciclovir called ganciclovir. Your Transplant Team with your Infectious Diseases Specialist will decide the best treatment options are for you.</p> <p>It is important to know that there is no cure for CMV. Once you have CMV, the virus stays in your body lifelong. After successful treatment you will be symptom free, however CMV will still be in your cells 'inactive'. CMV can be re-triggered in the future and cause infection again.</p>			
Can CMV infection harm my transplanted organ?			
<p>CMV can increase your risk of rejection. Rejection is not common as treatment of CMV infection is usually very effective.</p>			