YLORI), INFECTED WOUNDS, EBOLA, LIVER CANCER, ST ONORRHEA, TUBERCULOSIS (TB), URINARY TRACT INFECT EMOPHILIA, DOWN SYNDROME, VON WILLEBRAND DISEAT ISORDERS, PRADER-WILLI SYNDROME, MONONUCLEOSIS EFICIENCY, SICKLE CELL ANEMIA, POLYCYTHEMIA VERA ERICARDITIS, PNEUMONIA, ABDOMINAL INFECTION, H EVELOPMENTAL DELAY, GUN SHOT WOUNDS, HUNTINGT LOOD DONOR TESTING, NEWBORN SCREENING, CYSTIC EREDITARY BREAST CANCER, KIDNEY DISEASE, SUBSTANCL RUG OVERDOSE, CHRONIC FATIGUE SYNDROME, LIVER DISL

Through numerous testing methodologies, Lab Professionals **test for 1000's of diseases and disorders.** The following list presents just some of the numerous tests your medical professionals complete for your ongoing healthcare.

Abdominal infection (ascites fluid)

A sample of fluid taken from the abdomen is examined under the microscope to look for signs of infection and abnormal cells.

Allergy testing

A blood test for Immunoglobulin E (IgE) will detect the level of antibodies to specific allergens which can help to detect and manage allergies to many different substances.

Bladder cancer

A sample of urine is examined under the microscope to look for abnormal cells that can be used to diagnose cancers of the urinary tract including kidney, bladder, ureter and urethra. CAN

ABI

ING. B

Blood alcohol levels

The level of alcohol (ethanol) in your blood is measured. Blood alcohol levels are often tested when patients come into the Emergency Department after an accident or other trauma.

Blood clots

A D-dimer blood test measures a substance in the blood that is released when a blood clot breaks up. If the D-dimer test is negative, it means that the patient probably does not have a blood clot.

Blood clotting disorders

In order to diagnose a blood clotting disorder, doctors need to test how well a patient's platelets are working. The prothrombin time (PT) and partial thromboplastin time (PTT) blood tests measure the function of the proteins needed for normal clotting of the blood. The levels of specific clotting factors can also be tested to determine if they are missing or low.



mlpao.org/wetestforthat-public 🖪 🖸 🛅 💿

PO Box 100, STN LCD 1, Hamilton, ON L8L 7T5

WE TEST FOR THAT

Blood donor testing

Every unit of blood collected from a donor is tested to confirm their blood type (A, B, AB or O) and Rh type, and is also screened for disease markers including HIV, Hepatitis B and C, West Nile, Syphilis, Chagas Disease and HTLV to ensure the units are safe to be transfused to a patient.

Breast cancer (hereditary)

Genetic testing from a blood sample for breast or ovarian cancer looks for mutations in the BRCA1 and BRCA1 genes.

Blood group/type – for pre-op or trauma

As part of the pre-operative preparation for a patient having surgery, the lab determines the patient's blood type and screens the patient for any antibodies. This ensures that the lab has the proper units of blood ready should the patient need units of blood to be transfused while in surgery or after surgery.

Cancer diagnosis

During a biopsy, the doctor collects a sample of the cells, tissue or tumour for testing in the laboratory. The lab will process the biopsy and a pathologist will look at the sample under a microscope to check for cancer cells.

Breast cancer

During a breast biopsy, a small hollow-core needle is used to take a sample of breast tissue. A sample can also be removed during surgery. The lab processes the sample and it is examined by a pathologist who will provide a diagnosis.

Cardiac conditions (arrhythmia, heart damage)

An ECG records the electrical activity of the heart and can help diagnose heart conditions like abnormal heart rhythms and heart disease.

Cause of death - autopsy

An autopsy includes a complete visual exam of the entire body, including all organs and internal structures. Organs are weighed and samples taken for microscopic examination. Blood and other body fluid samples are taken for toxicology testing and also to check for infection.

Celiac disease

A positive test result for deaminated gliadin IgA antibodies is consistent with a diagnosis of celiac disease.

Cellulitis

Cellulitis is usually caused by a bacterial infection. Blood tests like a CBC (complete blood count) and CRP (C-Reactive Protein) can help to determine if you have an infection. If there is an abscess, a swab or skin sample taken from the affected area can be cultured to identify the type of bacteria.



WE TEST FOR THAT

Cervical cancer (Pap smear)

A Pap smear collects cells from the cervix to check for abnormalities or the presence of cancer.

Chronic Fatigue Syndrome

There is no single test to confirm CFS, but lab tests check your blood to help rule out other conditions that have similar symptoms.

Colon cancer

During a biopsy or surgery, the doctor collects a sample of the tissue or tumour for testing in the laboratory. The lab will process the biopsy and a pathologist will look at the sample under a microscope and to check for cancer cells.

Colon cancer (hereditary)

Genetic testing from a blood sample can tell the doctor if you carry rare, changed genes that cause colon cancer (aka colorectal cancer). This is often done to determine if members of certain families have inherited a high risk of colorectal cancer.

COVID-19

PCR (polymerase chain reaction) testing tells a healthcare provider whether someone currently has COVID-19. The sample used is a swab collected from a person's nose or a nasopharyngeal swab.

Crohn's disease

A doctor uses blood and stool tests to assist with the diagnosis of Crohn's disease. This includes specific antibody testing from a blood sample for ASCA (Anti-Saccharomyces Cerevisiae Antibody) and a biopsy sample taken during an endoscopy procedure which is analyzed in the lab.

Cystic Fibrosis (CF)

Screening for CF is part of the newborn screening panel for all newborns in Ontario. If a baby is screen positive or has symptoms, a doctor orders a sweat test to measure the amount of salt in a baby's sweat. The sweat chloride test is the most reliable way to diagnose CF. Carrier testing is available for parents to determine their chances of having a child with CF.

Developmental delay

A blood sample analyzed by chromosomal microarray (CMA) testing is often used for children who have developmental delay of unknown origin.

Diabetes

A blood glucose test can detect diabetes and the A1C test can be used to monitor diabetes.



WE TEST FOR THAT

Diseases of inborn errors of metabolism

Most inborn errors of metabolism (IEM) are diagnosed through prenatal screening. Children born with IEM have genetic conditions that affect enzymes that help turn food into energy. When these don't function properly, they cause damage to the nervous system leading to intellectual disability, liver problems and other conditions.

Drug overdose or substance abuse

Urine is tested for drugs of abuse including amphetamines, barbiturates, benzodiazepines, marijuana, cocaine, opioids, methadone and oxycodone.

Doping in sports

Urine or blood samples from athletes are tested for a variety of substances including steroids, hormones, growth factors, narcotics and stimulants.

Encephalitis

A sample of cerebrospinal fluid (CSF) which is removed from the space around the brain and spinal cord is examined under the microscope to look for signs of infection and abnormal cells.

Down Syndrome

Prenatal testing of amniotic fluid or chorionic villus can detect the extra chromosome 21 associated with Down syndrome (DS). Screening tests indicate the likelihood that a mother is carrying a baby with DS. After birth, a blood sample from the baby is used for chromosomal analysis to confirm the +21 and the diagnosis.

Gastric ulcer (H. pylori)

The Urea Breath Test (UBT) and the H. pylori stool antigen test are common tests used to accurately diagnose whether you have an H. pylori infection.

Gonorrhea

The most common test for gonorrhea is a nucleic acid amplification test (NAAT) which detects the genetic material of the *Neisseria gonorrhoeae* bacterium. Either urine or swab samples can be used.

Gout

A high level of uric acid in a urine or blood sample can diagnose gout.

Gun shot wounds

When a patient is bleeding extensively, massive hemorrhage protocols determine what type of blood and how much blood should be given to the patient. The lab ensures that all units of blood given to the patient are compatible and sufficient quantities are available as needed.



WE TEST FOR THAT

Heart attack

Troponin is a protein which is released into the bloodstream when the heart is damaged. Lab testing for troponin is used to assess whether someone has had a heart attack.

Herpes

A molecular PCR (polymerase chain reaction) test called HSV/ VZV is used to detect HSV (herpes simplex virus) and to determine the type of herpes (HSV-1 or HSV-2).

Hemophilia

Patients with recurrent bleeding may have hemophilia. Many clotting factors are required for blood to clot normally. Blood tests that determine if clotting factors are missing or low can help to diagnose hemophilia. Blood tests like a CBC, prothrombin time (PT), partial thromboplastin time (PTT), and fibrinogen also help physicians identify the cause of bleeding.

High Cholesterol

A blood sample is tested for lowdensity lipoprotein (LDL). High levels of LDL can lead to plaque buildup in your arteries and result in heart disease or stroke.

Hepatitis

A blood sample is tested for HBV (Hepatitis B virus) serology for many possible reasons: if hepatitis is suspected, as part of prenatal testing, before starting chemotherapy, to determine immune status, and for occupational exposures. Testing is also done for Hepatitis A and C.

HIV

Serology blood tests for HIV identify antibodies to the HIV virus in the blood, which indicates exposure to the virus and an infection. HIV testing by PCR testing identifies the genetic material of the HIV virus and can detect very early infection before antibodies are present.

HPV (Human Papillomavirus)

An HPV infection can lead to cancer. An HPV test is usually done at the same time as a Pap smear which collects cells from the cervix to check for abnormalities or the presence of cancer.

Huntington's Disease

A diagnostic blood test is done for patients where Huntington's Disease (HD) is suspected. The number of CAG repeats in the HD gene is examined; if the number of CAG repeats is within the normal range, a diagnosis of HD can be ruled out.

Illness caused by bioterrorism

Depending on the suspected agent of bioterrorism (virus or bacteria), samples are collected from people with symptoms. Blood samples are set up for culture to determine if the person is infected. Sputum or stool may also be collected depending on the suspected organism.



WE TEST FOR THAT

Infected wounds

Your doctor will take a swab sample from the wound site. The lab will do a bacterial culture and a Gram stain to determine if a wound is infected and to identify the bacteria causing the infection. Once the bacteria is identified, the lab will perform susceptibility testing to determine which antibiotic will be most effective to treat the infection.

Is my tumour benign or malignant?

The tumour is removed during surgery and sent to the histology lab. The lab processes a sample of the tissue and it is examined by a pathologist who will provide a diagnosis and determine whether the tumour is benign or malignant based on the cells examined under the microscope.

Kidney stones

A high level of uric acid in a urine or blood sample can diagnose kidney stones.

Influenza

Influenza testing is done from a nasopharyngeal swab tested by PCR (polymerase chain reaction) to determine whether the influenza virus is present. Multiplex assays can also test for several different strains of the flu in one test. This provides valuable information for doctors about outbreaks, especially during flu season.

Kidney cancer

A sample of urine is examined under the microscope to look for abnormal cells that can be used to diagnose cancers of the urinary tract including kidney, bladder, ureter and urethra.

Iron deficiency anemia

A doctor will order a CBC (complete blood count), hemoglobin level and ferritin level to help determine if the level of iron in your blood is low.

Kidney disease

Several lab tests show how well your kidneys are working. A urine test checks for albumin, a protein, which is an early sign of kidney disease. An increased level of creatinine in a blood tests shows that your kidneys are not working as they should. The lab test for how well your kidneys are working is eGFR (estimated glomerular filtration rate).

Lead poisoning

You can be diagnosed with lead poisoning through a blood test if the level of lead in your blood is elevated.

Leukemia

A blood sample can be analyzed by doing a complete blood count (CBC) or by looking at the blood cells through a microscope. A doctor may also collect a sample of bone marrow from the patient's hip that is sent to the lab to look for leukemia cells.



WE TEST FOR THAT

Liver cancer

During a biopsy, the doctor collects a sample of the cells, tissue or tumour for testing in the laboratory. The lab will process the biopsy and a pathologist will look at the sample under a microscope and to check for cancer cells.

Lupus

There is no single test to diagnose lupus. A positive blood test for ANA (antinuclear antibody) with other signs and symptoms help doctors to make a diagnosis of lupus.

Liver disease – cirrhosis

Blood tests would include high bilirubin level or high levels of other enzymes, like ALT (alanine transaminase), AST (aspartate transaminase), and ALP (alkaline phosphatase). A biopsy (small sample of liver) is often taken and examined in the labto confirm the diagnosis.

Lyme Disease

Lyme disease is caused by a bite from a tick carrying the bacteria *Borrelia burgdorferi*. A blood test will look for antibodies to the bacteria using an ELISA test. The presence of antibodies to the bacteria shows that your body is trying to fight the infection.

Maternal serum screening

Maternal serum screening (MSS) is a blood test taken during 15-21 weeks gestation that screens for Down Syndrome, Trisomy 18 and open neural tube defects. Positive results may lead to further diagnostic lab testing for specific conditions.

Meningitis

The doctor collects a sample of cerebrospinal fluid (CSF) from your lower back. CSF is the clear fluid that surrounds your spine and brain. In the lab, a gram stain test checks for the bacteria that causes meningitis. The CSF will also be tested for elevated levels of white blood cells, glucose and proteins.

Lung cancer

A sample of body fluid from the lung is examined under the microscope to look for cancer cells. Examples of fluid include sputum (phlegm or mucous) collected during coughing, or pleural fluid (fluid from the space around the lung). Cells can also be collected directly from the lung using a small needle. All samples are analyzed in the lab.

Lymphoma

Through a blood smear, in which a drop of blood is placed on a slide and examined under the microscope, lab professionals identify the abnormal cells that may indicate lymphoma. Flow cytometry testing specifies the type of lymphoma. A bone marrow sample and biopsy (sample taken from back of the hip bone) identifies the stage of lymphoma, or how much it has spread.

Mononucleosis

A test called a Monospot test looks for specific antibodies in the blood that show up during or after an infection with Epstein-Barr virus which causes mononucleosis.



WE TEST FOR THAT

Motor vehicle accidents

When a patient is bleeding extensively, massive hemorrhage protocols determine what type of blood and how much blood should be given to the patient. The lab ensures that all units of blood given to the patient are compatible and sufficient quantities are available as needed.

Newborn screening

A sample, taken from the baby's heel at 1-2 days old, is tested for metabolic and endocrine diseases, sickle cell disease, cystic fibrosis, spinal muscular atrophy, severe combined immune deficiency, and critical congenital heart disease. These diseases may not be evident at birth, but could be life-threatening if not treated.

Pancreatitis

Amylase and lipase are digestive enzymes in the pancreas. High levels of these enzymes in a blood test can indicate pancreatitis.

Myeloma

A CBC (complete blood count) measures red cells, white cells and platelets in your blood. The serum protein electrophoresis (SPEP) test measures the amount of abnormal proteins found in myeloma. A bone marrow sample and biopsy (sample taken from the back of the hip bone) provides information about how advanced the disease is.

Organ donor match testing

Tests to evaluate donors are blood type, crossmatch and HLA (human leukocyte antigen). The blood type of the donor must match that of the recipient. HLA refers to genetic markers you get from your parents. HLA testing determines if your body will make antibodies against a donor's HLAs. If that happens, the transplant will be rejected.

Paternity testing

A swab sample collected from the child and the father is analyzed in the lab to compare the DNA of the child with that of the alleged father to determine a match.

Necrotizing fasciitis (flesh-eating disease)

It is a serious emergency situation if a doctor suspects a patient has flesh-eating disease. A sample of the infected tissue is tested for the presence of the bacteria. Rapid diagnosis is required as the bacteria quickly destroys skin, fat and tissue covering the muscles.

Ovarian cancer (hereditary)

Genetic testing from a blood sample for breast or ovarian cancer looks for mutations in the BRCA1 and BRCA1 genes.

Pericarditis (fluid around the heart)

A sample of fluid taken from the sac around the heart is examined under the microscope to look for signs of infection and abnormal cells.



WE TEST FOR THAT

Pneumonia (pleural fluid) A sample of fluid taken from the space around the lung is examined under the microscope to look for signs of infection.	Polycythemia Vera A CBC (complete blood count) is a test that measures the number of red cells, white cells and platelets, as well as hemoglobin and hematocrit levels which can be elevated in Polycythemia Vera (PV). A blood smear provides further information about the number of red cells, an increase of which can indicate PV.	Prader-Willi syndrome Genetic testing of a blood sample can identify the abnormality in a patient's chromosomes, by microarray testing, or by DNA methylation analysis. The genetic abnormality associated with Prader-Willi syndrome is on chromosome 15.
Predicting pre-term labour (fetal fibronectin) Fetal fibronectin (fFN) is a protein made by pregnant women, and a test for fFN levels checks a woman's risk of pre-term birth by measuring the level of fFN in vaginal fluid.	Pregnancy A blood test for hCG (human chorionic gonadotropin) can detect pregnancy earlier than a urine test.	Prenatal genetic testing (amnio and CVS) Prenatal diagnostic tests are done by taking cells from the fetus or placenta obtained by amniocentesis or chorionic villus sampling (CVS). These tests, which are done during pregnancy, can tell a mother whether the fetus has certain disorders.
Prostate cancer A PSA (prostate specific antigen) blood test is used to screen for prostate cancer in men. If the PSA test is elevated, a prostate biopsy is done, where a small hollow- core needle is used to take a sample of prostate tissue. The lab processes the sample and it is examined by a pathologist who will provide a diagnosis.	Prostate cancer (hereditary) Some genes can raise a man's risk for prostate cancer. Inherited genetic testing can be done on a blood sample to look for specific mutations associated with prostate cancer. A tumour biopsy can also be tested for acquired mutations in prostate tumours.	Rh typing Rh factor is a protein found on the surface of the red blood cells. We inherit it from our parents. Most people are Rh positive, or Rh+. Being Rh- can affect pregnancy, especially if the baby is Rh+. The doctor will use the results of the Rh test to monitor the mom during pregnancy and follow up with additional testing.



WE TEST FOR THAT

Ringworm

A doctor will take a small skin scraping or nail sample to send to the lab for testing. Molecular testing including polymerase chain reaction (PCR) is used to diagnose ringworm infections. Since fungus can take several weeks to grow in culture, the PCR method provides a much quicker diagnosis.

Skin biopsies – skin cancer

During a skin biopsy, doctor will remove a small sample of skin. A sample can also be removed during surgery. The lab processes the sample and it is examined by a pathologist who will provide a diagnosis.

RSV - Respiratory Syncitial virus

Testing for RSV is often part of a "respiratory panel" that tests for several seasonal viruses at the same time, including Influenza A and B, RSV, adenovirus, human rhinovirus, and others. A nasopharyngeal swab is usually collected for the test.

Strep throat

A doctor will take a throat swab which is sent to the lab to check for the presence of the bacteria that causes strep throat, Group A Streptococcus.

Sickle cell anemia

A blood sample is tested using a technique called high-performance liquid chromatography (HPLC) to identify if a person has Hemoglobin S, instead of the normal Hemoglobin A. A genetic test can be done to confirm the diagnosis of Sickle Cell Anemia.

Syphilis

Screening for syphilis is done using a test called Chemiluminescent microparticle immunoassay (CMIA) to detect antibodies to the bacteria that causes syphilis. When screening tests are positive, further lab testing is done to confirm the diagnosis.

Tay Sachs disease

A molecular genetics test for the mutations in the HEXA gene is used to confirm a diagnosis of Tay-Sachs disease.

Thalassemia

Thalassemia is an inherited blood disorder when the body does not make enough hemoglobin. Blood tests like a CBC (complete blood count) and a blood smear can show the number of red blood cells and any abnormalities in size, shape or colour. Blood tests for DNA analysis look for mutated genes to determine the specific type of thalassemia.

Therapeutic drug monitoring

Therapeutic drug monitoring tests the amount of certain medicines in your blood to make sure that the dose you are taking is both safe and effective. Testing would be specific for the drug like some antibiotics, heart drugs, and drugs for bipolar disorder.



WE TEST FOR THAT

Thyroid function

Blood tests for thyroid stimulating hormone (TSH), T3 and T4 help doctors to check your thyroid function. If your TSH is high, you may have hypothyroidism in which your thyroid gland doesn't make enough thyroid hormone. If your TSH is low, you may have hyperthyroidism in which your thyroid gland is making too much thyroid hormone.

Ulcerative colitis

Specific antibody testing from a blood sample for pANCA (perinuclear anti-neutrophil antibodies) can help doctors to make the diagnosis. A biopsy sample taken during an endoscopy procedure which is analyzed in the lab, is the only way to definitively diagnose ulcerative colitis.

Toenail fungus

Molecular testing including polymerase chain reaction (PCR) is used to diagnose fungal nail infections. Since fungus can take several weeks to grow in culture, the PCR method provides a much quicker diagnosis. If left untreated, the fungus can penetrate the skin under the nail, infect the toe, and potentially spread to other parts of the body.

Urinary tract infection (UTI)

A urine sample will be examined in the lab under the microscope for the presence of bacteria and blood cells (both white and red cells).

Tuberculosis (TB)

When a person may have an active TB infection, respiratory samples like sputum, lung tissue, or bronchial washings are tested for evidence of the mycobacterium. A tuberculin skin test is used most often to screen for latent TB. In special circumstances, a blood test for latent TB, called interferongamma release assays (IGRA) are used.

Uterine fibroids

If you have irregular menstrual bleeding, blood tests can help your doctor to figure out the cause of the bleeding, and if it may be due to uterine fibroids or some other cause.

Von Willebrand Disease

Von Willebrand Disease (VWD) is a bleeding disorder related to how your blood clots. Doctors will order a blood tests to measure how your blood clots including Factor VIII testing, and Von Willebrand factor antigen testing. Further testing can be done by the lab to determine the specific sub-type of VWD.

West Nile Virus

Serology blood tests for West Nile Virus (WNV) identify antibodies to the WNV virus in the blood which indicates exposure to the virus and an infection. Testing can also be done using a sample of cerebrospinal fluid (CSF).

Whooping cough (pertussis)

A doctor will take a throat swab which is sent to the lab to check for the presence of the bacteria that causes whooping cough -*Bordetella pertussis.*

