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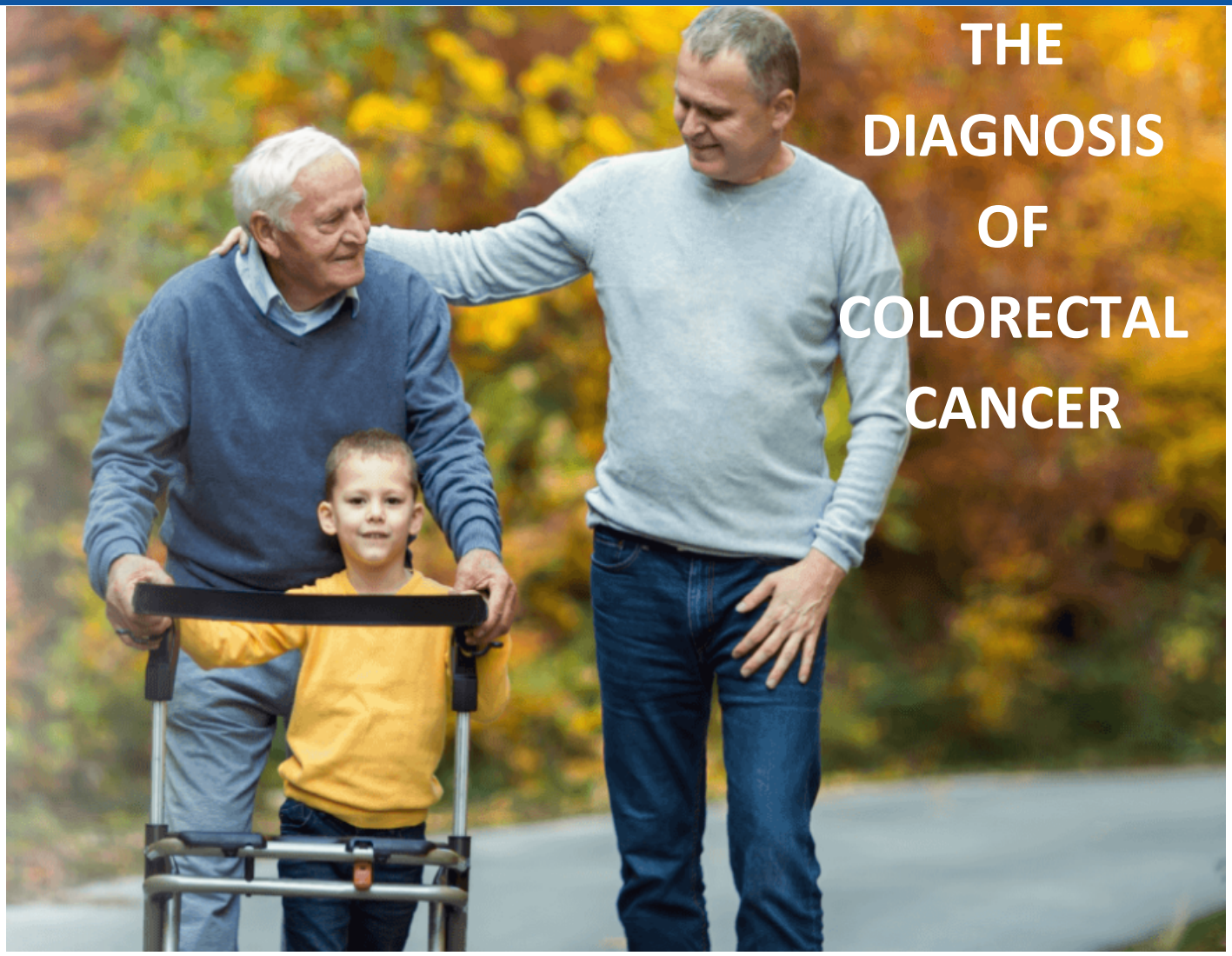
CCRAN
Colorectal Cancer
Resource &
Action Network

Screen it! Treat it! Beat it!



Some Helpful Facts…..

1. A screening test will NOT definitively diagnose colorectal cancer. A BIOPSY will confirm the presence of cancer.
2. In a biopsy, the doctor removes a small piece of tissue from a polyp or tumour to generate a formal diagnosis.

Screening, such as FOBT and FIT, is intended for the average risk Canadian – a person who does not have symptoms from colorectal cancer and does not have a first degree relative who was diagnosed with colorectal cancer. It typically is recommended for people age 50 and older but the test cannot **officially** diagnose colorectal cancer. Instead, a diagnostic (rather than a screening) test is required such as a

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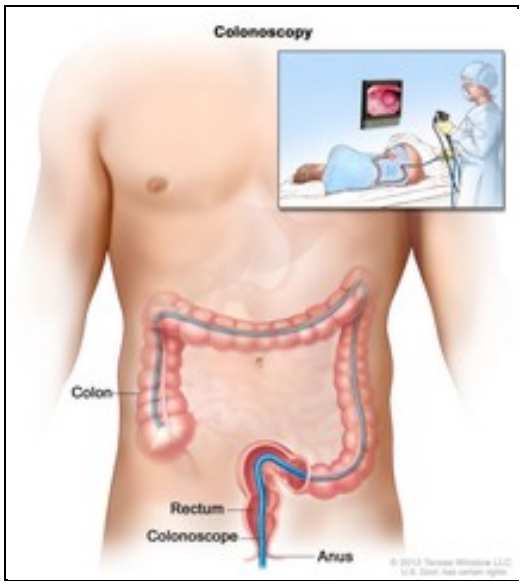
colonoscopy, biopsy, and imaging tests are required to confirm the diagnosis of colorectal cancer as well as define the extent of the disease.

While some people start the journey due to routine recommended checkups (screening), others do so because of troubling symptoms, or an abnormal physical exam, or a new finding on a lab test such as iron deficiency anemia. The following tests, procedures, and scans are used by medical experts to help diagnose colorectal cancer. Should you have any questions or concerns regarding this content, do not hesitate to contact CCRAN at info@ccran.org for we are happy to assist.

If a screening test such as FOBT or FIT has come back positive, your doctor will recommend that you undergo a diagnostic colonoscopy. Your doctor may also recommend such a test if symptoms or the results of a physical exam or blood tests suggest that colorectal cancer might be present.



Colonoscopy

In a colonoscopy, a gastroenterologist (a specialized doctor who performs a colonoscopy) may discover a polyp or tumour in the colorectum. The diagnosis of colon polyps is important, since some may turn into colorectal cancer over time. While not every colorectal polyp turns to cancer, it is felt that almost every colorectal cancer begins as a small non-cancerous polyp. During colonoscopy, these polyps can be identified and removed or destroyed, thus preventing a possible colorectal cancer. If there is a fairly large polyp, tissue can be sent to for biopsy to determine the exact type of polyp. There are 6 types of polyps that commonly occur within the colon and are diagnosed through a biopsy:

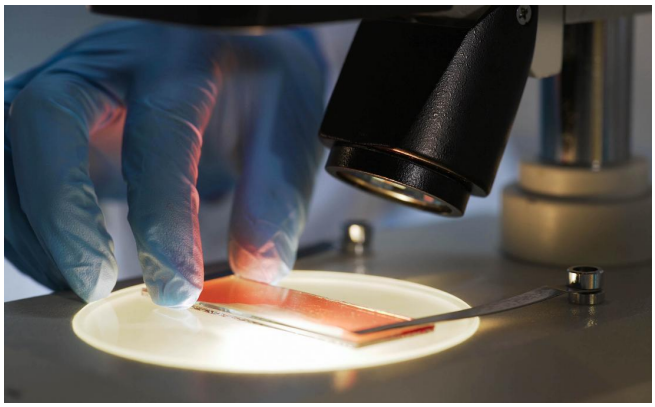
TYPE OF POLYP	DESCRIPTION
1. INFLAMMATORY	This type of polyp is typically associated with IBD (ulcerative colitis or Crohn's disease). It is usually referred to as a "pseudopolyp" or false polyp because it is not a true polyp. Instead, it is reaction to chronic inflammation of the colon wall. It typically does not turn into cancer.
2. HPERPLASTIC	This type of polyp is typically found in the rectum. And usually it is quite small. They are low risk for cancer.
3. TUBULAR ADENOMAS	This is the most common type of polyp (70%) removed. This polyp carries a definite cancer risk which increases as it gets larger. They typically cause no symptoms but if detected early they can be removed before any cancer cells are formed.
4. TUBULOVILLOUS ADENOMAS	This type of polyp typically found in the colon and can become malignant. They have a higher risk of malignant transformation than tubular adenomas.
5. VILLOUS ADENOMAS	15% of polyps removed are of this type. These are the most serious type of polyp with a very high cancer risk as they grow larger. These are often of the sessile (flat) type and not on a stem making removal problematic. The smaller ones can be removed in piecemeal fashion – sometimes over several colonoscopies. The larger ones may require surgery for complete removal.
6. SESSILE (FLAT) SERRATED ADENOMAS	Sessile serrated adenomas have a jagged appearance and can be challenging to distinguish microscopically from hyperplastic polyps. It's important that this distinction is made however, since sessile serrated adenomas have the potential to become cancers, while hyperplastic polyps do not.

Polyps that are removed during a colonoscopy are sent to the pathology lab to be examined and tested. Pathologists (doctors trained to diagnose cancer and other diseases in tissue samples) use a grading system to assess the severity of an individual cancer. This system is based on how closely the tumor cells resemble normal cells. As normal cells grow and develop, they differentiate, which simply means that they become more specialized based on where they are located in the body. Pathologists can view cells under the microscope and discern a difference between the different cells in the body, for example colon cells look distinctly different than liver cells, which look distinctly different than breast cells. Normal cells in different tissues of the body are considered to be fully differentiated, whereas cancer cells are not fully differentiated. If the cancer cells look very similar to normal cells and are grouped together in an organized fashion, they are called well differentiated.

Cancer cells fall into one of three categories:

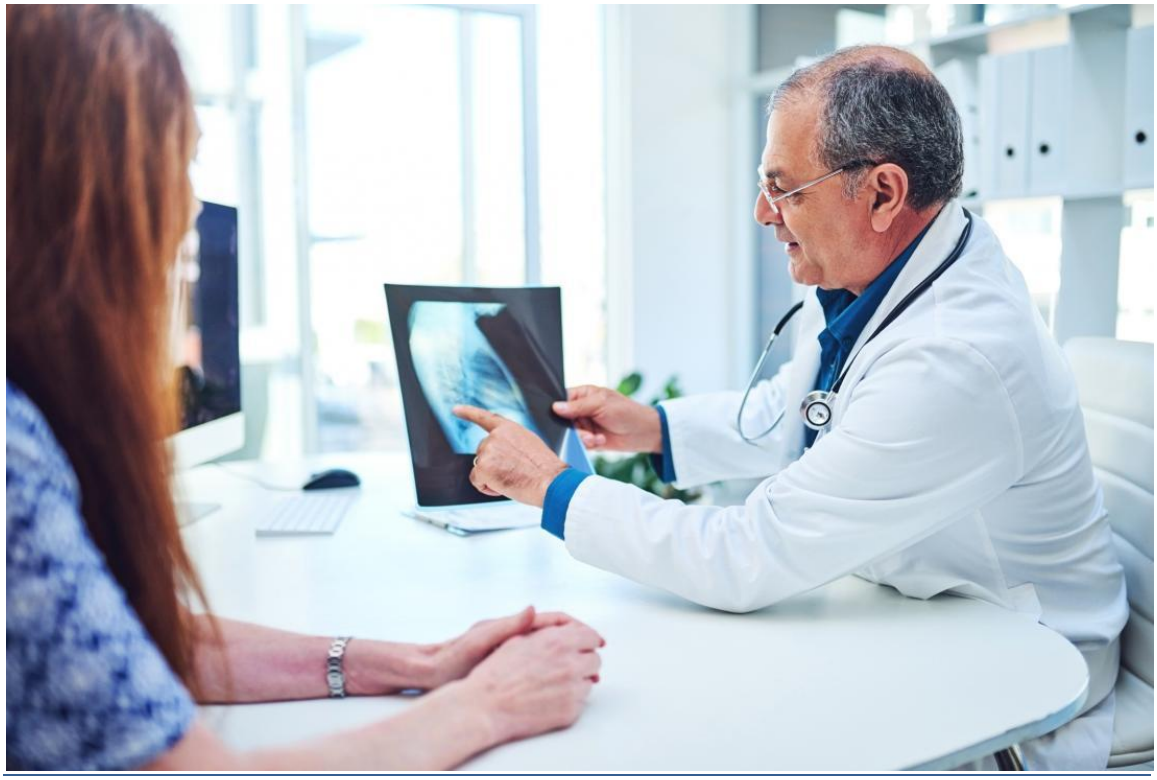
Well Differentiated	cancer cells which appear to be most similar to normal cells
Moderately Differentiated	cancer cells which appear to be somewhat different than normal cells
Poorly Differentiated	cancer cells which appear very different than normal cells

QUESTION: WHAT IS A BIOPSY?



A biopsy is the removal of a small amount of tissue for examination under a microscope. Other tests can suggest that cancer present, but **only a biopsy can make a definite diagnosis of colorectal cancer**. A pathologist then analyzes the sample(s). A pathologist is a doctor who specializes in interpreting laboratory tests and evaluating cells, tissues, and organs to diagnose disease. A biopsy may be performed during a colonoscopy, or it may be done on any tissue that is removed during surgery. Sometimes, a CT scan or ultrasound is used to help perform a needle biopsy, which allows for the removal of tissue through a needle guided into the skin.

PART II:
TESTS TO HELP DIAGNOSE COLORECTAL CANCER



If your doctor diagnoses colorectal cancer, you may need further tests to find out the position and size of the cancer, as well as determine the extent of your cancer. These tests may include:

A: BLOOD TESTS

Colorectal cancer can often bleed into the large intestine or rectum, which may result in people becoming anemic. A test in the number of red blood cells, which is part of a **complete blood count (CBC),** can indicate that bleeding may be occurring.

Another blood test detects the levels of a protein called **carcinoembryonic antigen (CEA).** High levels of CEA may indicate that a cancer has spread to other parts of the body. CEA is not a perfect test for colorectal cancer because levels are high for only about **60%** of people with colorectal cancer that has spread to other organs from the colon. In addition, other medical conditions can cause CEA to increase. A CEA test is most often used to monitor colorectal cancer for people who are already receiving

treatment. It is not useful as a screening test. Tumor marker levels can be normal in a person who has cancer and can be abnormal for reasons other than cancer. For example, higher levels may also be present in the blood of some people with ulcerative colitis, non-cancerous tumors of the intestines, of some types of liver disease or chronic lung disease. Smoking can also raise CEA levels.

Blood tests measuring liver functions can also be prescribed in the event that colorectal cancer has spread to the liver which can then cause abnormalities of the liver, reflected in elevated liver enzymes.

All colorectal cancers should be tested for problems in mismatch repair proteins, called a mismatch repair defect (**dMMR**). There are 2 reasons for this testing. First, it is a way to look for Lynch Syndrome. Second, the results will be used to find out if immunotherapy should be considered in patients with metastatic disease. This testing can either be done using specialized staining of the tissue taken from a biopsy or surgery or by doing analyses that look for changes called microsatellite instability (**MSI)**.

If you have been diagnosed with metastatic or recurrent colorectal cancer, a sample of tissue from the area where it spread or recurred is preferred for testing, if available.

B. IMAGING TESTS

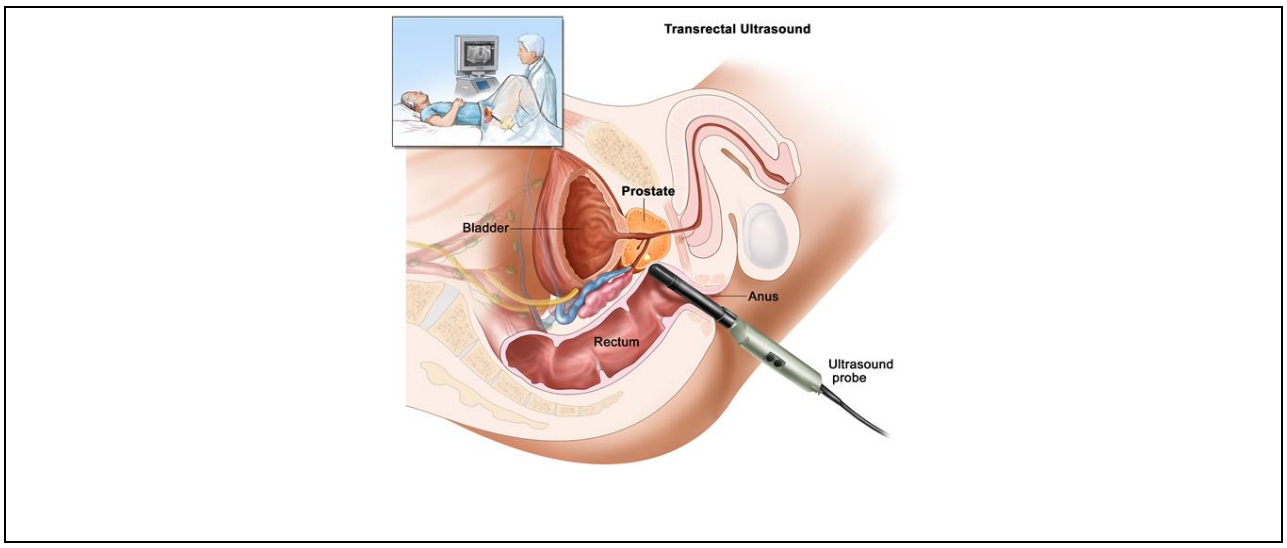
Once the diagnosis of colorectal cancer is determined, the extent of the disease spread is determined with imaging tests. These imaging tests can also help confirm the diagnosis. The imaging tests often used may include:

Computed Tomography (CT or CAT) Scan: A CT scan takes pictures of the inside of the body using x-rays taken from different angles. A computer combines these pictures into a detailed, 3-dimensional image that shows any abnormalities or tumors. A CT scan can be used to measure the tumor's size. Sometimes a special dye called a contrast medium is given before the scan to provide better detail on the image. This dye can be injected into a patient's vein or given as a pill or liquid to swallow. In a person with colorectal cancer, a CT scan can check for the spread of cancer to the lungs, liver, and other organs.

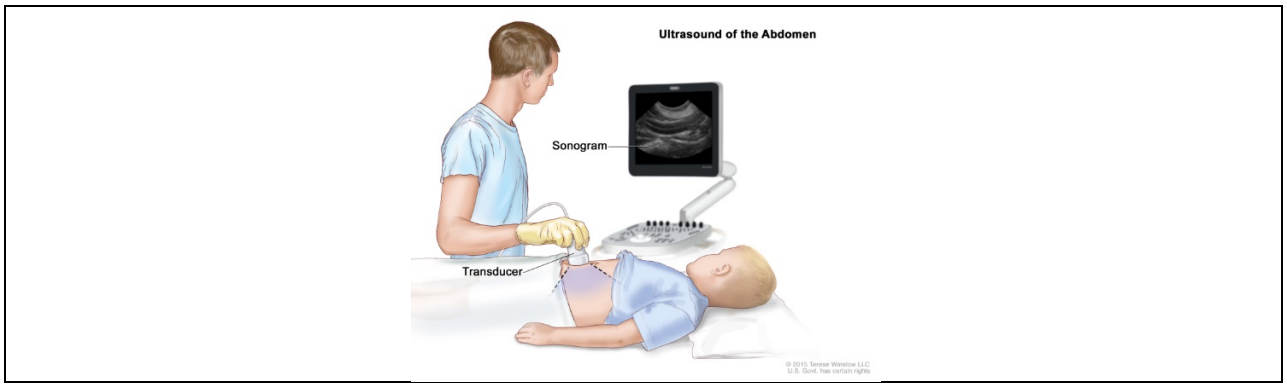
Magnetic Resonance Imaging (MRI): An MRI uses magnetic fields, not x-rays, to produce detailed images of the body. MRI can be used to measure the tumor's size and location. A contrast medium called gadolinium is given before the scan to create a clearer picture. This dye is injected into a patient's

vein. MRI is the best imaging test to find where the colorectal cancer has grown. MRI scans take longer than CT scans, up to an hour. Lying inside a narrow tube may disturb those claustrophobic (fearful of enclosed spaces) and MRIs are also quite noisy inside (they generate buzzing and clicking noises that can become uncomfortable for the patient. MRIs can be quite effective at detecting colorectal cancer that has migrated to the liver.

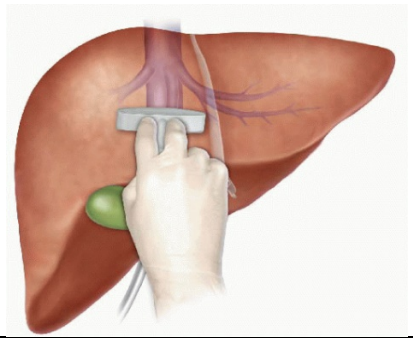
Ultrasound: An ultrasound uses sound waves to create a picture of the internal organs to find out if cancer has spread. **Endorectal ultrasound** is commonly used to find out how deeply rectal cancer has grown and can be used to help plan treatment.



However, this test cannot accurately detect cancer that has spread to nearby lymph nodes or beyond the pelvis. An **Abdominal Ultrasound** can also be used to view the liver, although CT scans or MRIs (see above) are better for finding tumors in the liver.



An **intraoperative ultrasound** can be performed after a surgeon has opened the abdominal cavity. The transducer which produces the images on the screen can be placed against the surface of the liver, making this test very useful in detecting metastases of colorectal cancer to the liver.



Positron Emission Tomography (PET) Scan: PET scans involve injecting a form of radioactive sugar (known as fluorodeoxyglucose or FDG) into the blood. The amount of radioactivity is very low. Cancer cells in the body grow rapidly, and a result, they absorb large amounts of the radioactive sugar. A special camera can then create a picture of areas of radioactivity in the body. The picture is not finely detailed like a CT or MRI scan, but it provides helpful information about the whole body. PET scans are now performed in conjunction with a CT scan at the same time (PET/CT scan). This allows the radiologist to compare areas of higher radioactivity on the PET with appearance of that area on the CT. A PET/CT may be useful if your doctor believes that colorectal cancer may have spread or returned after treatment but does not know where. PET/CT scans can be used instead of several different x-rays because they are able to scan the entire body.

If your doctor finds something suspicious during a screening exam, or if you have any of the symptoms of colorectal cancer, you will likely need to undergo a diagnostic workup. A diagnosis of cancer can be extremely challenging, even when a full recovery is likely. It is, however, precisely at the time that the diagnosis is delivered that a patient is able to start taking the first step towards actively managing the disease and taking control of their life. Furthermore, no matter what their concerns or prognosis, colorectal cancer patients are not alone. Colorectal cancer support groups are available to offer emotional support as well as provide awareness in respect of the disease. To inquire about a colorectal cancer support group in your area, please visit the section entitled "**SUPPORT GREOUPS**". Or call us, we are happy to support you on the phone or with a visit. **1 833 79 CCRAN (22726).**

Sources:

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Medical News Today
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