CCRAN
Colorectal Cancer Resource & Action Network

RISCC
Réseau d'informations et soutien pour le cancer colorectal

A PATIENT-FOCUSED ORGANIZATION

COLORECTAL CANCER TREATMENT & CLINICAL RESEARCH UPDATES

Month Ending February 15th, 2024

The following colorectal cancer treatment and research updates extend from January 17th, 2023, to February 15th, 2024, inclusive and are intended for informational purposes only.

This content is not intended to be a substitute for professional medical advice. Always consult your treating physician or guidance of a qualified health professional with any questions you may have regarding your health or a medical condition. Never disregard the advice of a medical professional or delay in seeking it because of something you have read on this website.

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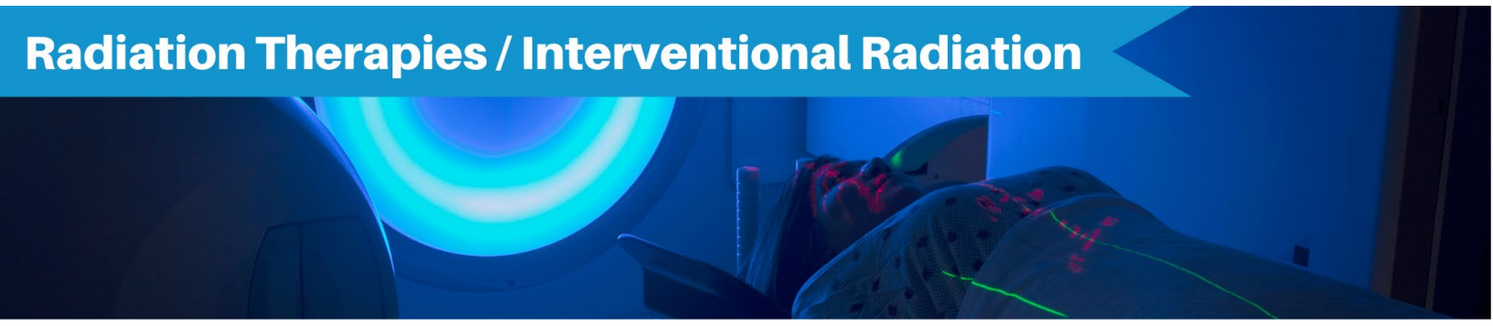

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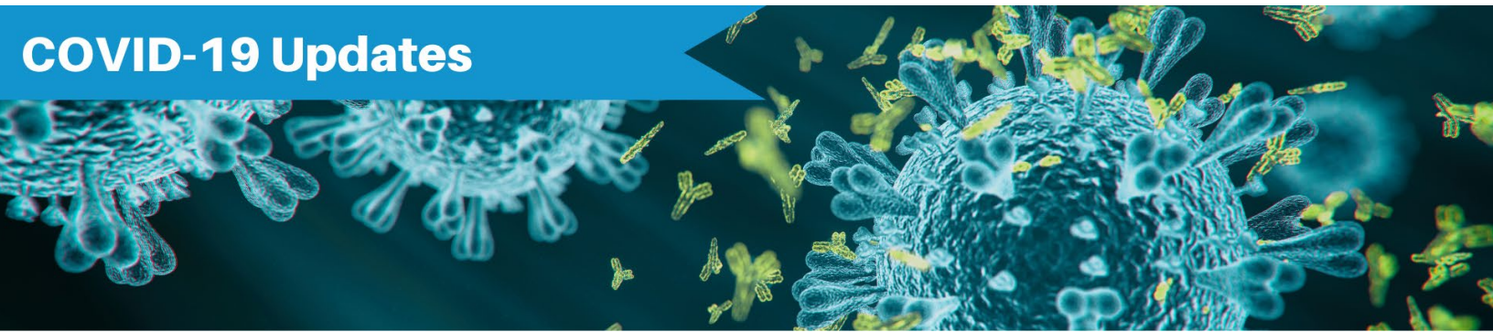


31. Frequently Asked Questions for COVID-19

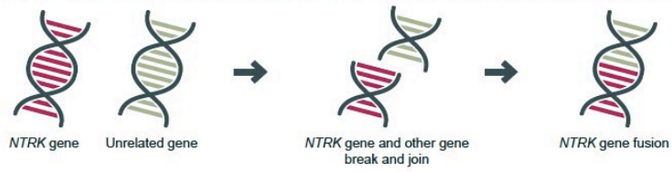
Drug / Systemic Therapies

1. TRK Fusion Cancer and How to Test for It (Feb.13/24)

TRK fusion cancer and how to test for it

What is TRK fusion cancer?

- TRK (pronounced track) fusion cancer is a term used to describe **cancers that are caused by a change to the neurotrophic tyrosine receptor kinase *(NTRK)* gene** called a fusion
- During this fusion, an *NTRK* (pronounced en-track) gene **joins together, or fuses, with a different gene**
- This joining causes the body to make TRK fusion proteins, which can **cause cancer cells to multiply** and form a tumour
- The presence of TRK fusion proteins may be associated with **more aggressive cancer**



Having TRK fusion cancer doesn't change your original diagnosis, it just means that your **tumour is driven by an *NTRK* gene fusion**

Testing is the only way to find out if *NTRK* gene fusion is driving your cancer

TRK=tropomyosin receptor kinase

Who should be tested for *NTRK* gene fusions?

Your doctor may consider testing in people:

- with solid tumours that are metastatic, and
- who are likely to experience severe complications from surgical resection, and
- when there are no satisfactory treatments options available

It's important to know what's driving your cancer to help your doctor take action

*Fast*TRK

***Fast*TRK is a clinical testing program for diagnosing *NTRK* gene fusions**

Sponsored by Bayer, this is a complimentary service for healthcare professionals to find out if their patients' cancer has an *NTRK* gene fusion

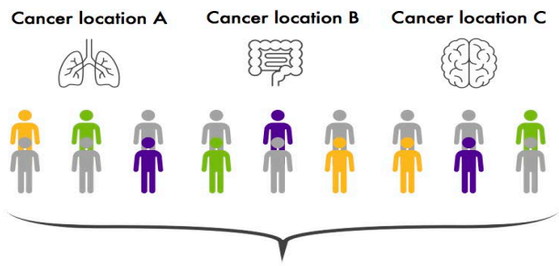
Talk to your doctor about which tests are recommended for you

INTRODUCING

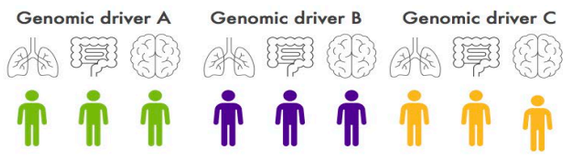
Tumour-Agnostic Therapies

Advances in precision medicine have brought therapies that specifically target what is driving a patient's cancer

Treatment with more traditional cancer therapies is based on where the tumour is located in the body



Tumour agnostic therapies target a specific genomic change in the cancer cells regardless of where the tumour is located in the body



Genomic changes in cancer cells are identified through diagnostic testing of the cancer cells. The results help clinicians decide on a treatment for each patient.

1. Patients undergo a biopsy to obtain a sample for testing
2. Tissue is sent to lab to test for genomic changes
3. Results sent to clinician to help decide on treatment

Advantages of tumour agnostic therapies

- Targets the genomic change that is the root cause of the cancer to suppress tumour growth
- Harnesses our growing understanding of cancer biology
- Offers an innovative, new and effective approach to treating cancer

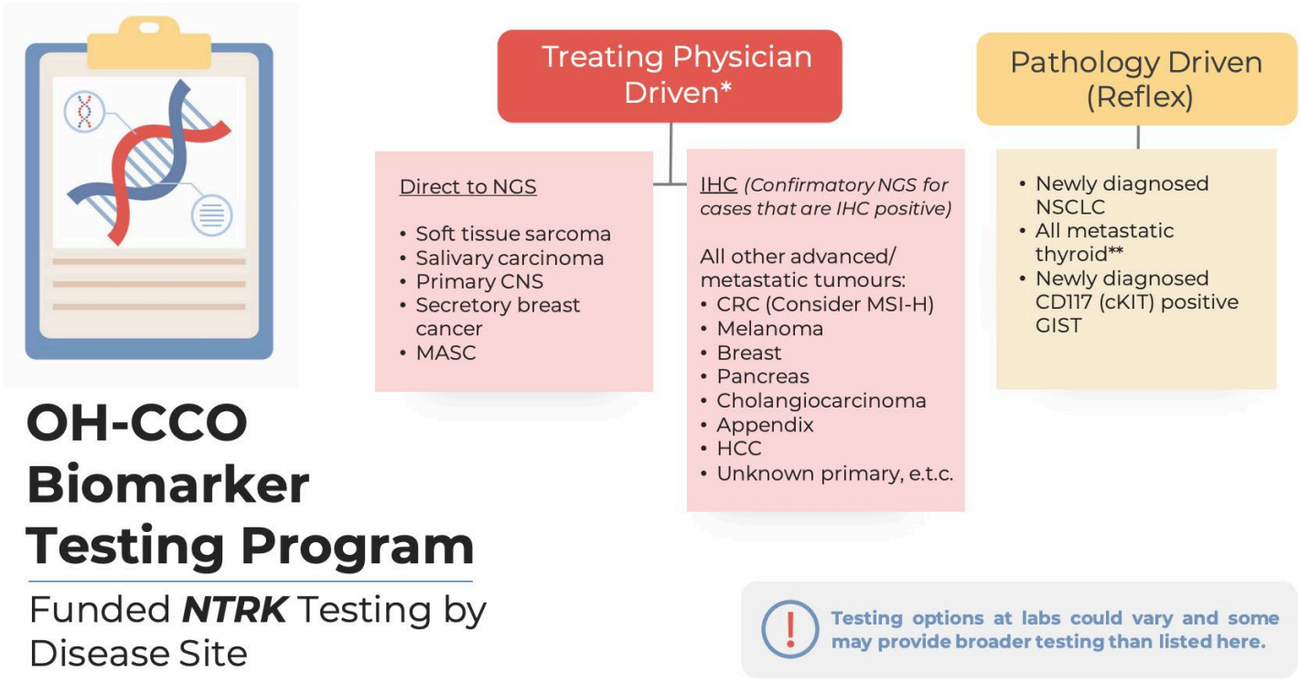
Change required to adopt tumour agnostic therapies in Canada

- A shift in mindset: this is a new concept that differs from the traditional approach of treating cancer based on tumour location
- Access to genomic testing: Identifying patients who would benefit from treatments requires a robust testing infrastructure
- An evolved, more adaptive assessment of treatments for public coverage is required that includes recognition of smaller patient populations, new clinical trial methods, and ability to examine new data over time

MAC-VIT-CA-0007-1

https://www.newswire.ca/news-releases/health-canada-approves-vitrakvi-r-larotrectinib-the-first-tumour-agnostic-cancer-treatment-for-advanced-solid-tumours-harbouring-an-ntrk-gene-fusion-880379419.html
https://www.bayer.ca/en/media/news/?dt=TmpBPQ==&st=1

2. OH-CCO Biomarker Testing Program (Jan.11/24)



3. Immunotherapy Combined with Targeted Therapy in Patients with BRAF V600E–Mutated CRC (Feb.15/24)

In one of the first clinical trials combining immunotherapy and targeted therapy for patients with BRAF V600E–mutated colorectal cancer (CRC), researchers discovered that a combination regimen of **dabrafenib, trametinib**, and **spartalizumab** resulted in long-lasting responses. The study successfully met its primary endpoint and achieved a confirmed response rate of 24.3%, compared with a response rate of 7% in a prior trial where patients were treated with each of the same targeted therapies individually. The researchers also reported improved outcomes in one of the trial's secondary endpoints: durability. Previously, patients with BRAF V600E–mutated CRC have seen only a short-lived clinical benefit after treatment with BRAF or MEK inhibitors. But the combination therapy resulted in an increased durability of response, with a median progression-free survival of 5 months compared with 3.5 months with BRAF or MEK inhibitors alone. The researchers noted that 57% of the patients continued with the treatment for more than 6 months and 18% continued for more than 1 year.

The findings suggested how targeted therapies in combination with immunotherapies may drive a greater immune response and improve treatment overall. This merits further clinical investigation and preclinical experiments to determine the best targeted approach to increase immune reactivity against [BRAF-mutated] CRC. The researchers acknowledged that the implications of their research may go well beyond CRC.

https://ascopost.com/news/january-2023/immunotherapy-combined-with-targeted-therapy-in-patients-with-braf-v600e-mutated-colorectal-cancer/

4. Skincare Tips while on Cetuximab or Panitumumab Treatment for CRC (Jan.28/23)

Amgen has collaborated with FUSE Health and Dr. Nathan Lamond (Medical Oncologist, Dalhousie University) to produce a 5-minute video on the importance of good skin hygiene for patients on EGFRi therapy. During this talk, Dr. Lamond discusses the importance of good skin care to help prevent or lessen skin side effects caused by certain cancer treatments such as cetuximab and panitumumab used to treat colorectal cancer (CRC). Dr. Lamond provides tips for protecting the skin and using appropriate soaps, cleansers, moisturizers, sunscreens, and lip balms.

To view the video:
https://www.youtube.com/watch?v=y2KuGAEK8Mc

5. PERIOP-06 Study at Sunnybrook Hospital to Treat Liver Metastases (Jan.30/24)

We are inviting you to take part in a voluntary research study | PERIOP-06

Why are we doing this study?

The purpose of the PERIOP-06 clinical trial is to see how effective a new medication is. This new medication is called QBECO and is made by a Canadian company called Qu Biologics. We want to see if QBECO can prevent or slow colorectal cancer from coming back in patients who have had surgery to remove cancer that has spread to the liver. To do this, you will be randomly assigned to receive either QBECO or a placebo (a drug that looks like the study drug but contains no medication) so we can compare QBECO to the usual care. Both you and your study doctor will not know if you are receiving the study drug or placebo.

What are the possible benefits of taking part in this study?

- The QBECO medication may benefit you more than the usual care for your cancer.
- There is evidence that QBECO may be effective in preventing the growth of colorectal cancer in humans from a previous Phase I clinical trial.
- The information learned from this study might help other patients in the future.
- You will have close follow ups for 5 years after surgery.

What are the possible disadvantages & risks of taking part in this study?

- QBECO may not benefit you more than the usual care for your cancer.
- You may experience side effects from the QBECO medication.
- You can find more information below and in Section 13: "What risks can I expect from taking part in this study?" of the informed consent document.

Do I have to take part in this study?

Your participation is voluntary. You may choose not to participate. If you choose to participate, you may change your mind at any time. Regardless of your choice, your medical team will continue to take care of you.

Common Side Effects of QBECO

In 100 people receiving QBECO more than 5 and up to 15 may have the following side effects:

- Tenderness at the injection site. This typically gets better in 2 days. If the redness or swelling is bigger than 7 cm, please contact a member of the study team.
- Temporary mild fatigue following the first few doses of QBECO
- Temporary nausea
- Temporary fever
- Temporary headache
- Increased General Inflammation

Additional Drug Risks

QBECO is not known to interact with other drugs.

Rare And Serious Side Effects of QBECO

In 100 people receiving QBECO, 3 or fewer may have:

- Pancreatitis
  - Symptoms include: Abdominal or back pain, nausea, vomiting
- Hepatitis [inflammation of the liver]
- Electrolyte abnormalities [determined with lab test]
- Kidney failure

These serious side effects have only been reported in patients who were given QBECO to treat Crohn's disease and ulcerative colitis. No serious side effects were reported in 109 patients who received QBECO for advanced cancer.

What should I do if I am experiencing symptoms?

If you are experiencing these or any symptoms that you think are related to the study treatment, you should contact your cancer surgeon or the study coordinator to discuss. If the symptoms are serious and require emergency medical attention, then you should present to the emergency room and inform the medical team that you are participating in this study.

Visual Summary of Trial Activities

Day Relative to Surgery	Details	Trial Activities				Notes
		Blood Sample	QBECO Therapy or Placebo	MRI/CT scan	Other Assessments	
Eligibility Screening	The research team will confirm eligibility. Routine bloodwork will be done.	✓		✓	Survey and pregnancy test (if appropriate)	
-11 to -1 days	You will give yourself a subcutaneous injection (QBECO therapy or placebo) every 2 days before surgery for at least 11 days.		✓			If your surgery is delayed, you can take QBECO (or placebo) up to 120 days before surgery
Day of Surgery	You will have your surgery following the usual care procedures. Additionally, a sample of tumor tissue will be collected.	✓			Compliance and side effect assessment	The compliance and side effect assessment may be collected over the phone the day before the surgery
+1 and +4 (±1) Day(s)	You will be monitored in the hospital following your surgery. QBECO or placebo will be taken every 2 days.	✓	✓		Survey on day 4 (±1) only	
+7 to 41 Days	You will continue to give yourself a subcutaneous injection of QBECO therapy or placebo every 2 days after your surgery for 41 days.		✓			
+6 (±10 d) weeks	Once your injections are complete, you will have a follow-up appointment.	✓			Survey and side effect assessment	
+3, 6, 9, 12, 15, 18, 21, and 24 Months	To check for the progression of cancer, imaging and blood samples will be done every three months for 2 years after surgery.	✓		✓	Compliance and side effect assessment will be at 3 months only	There will be a range of ± 14 days for your 3 month visit and a range of ± 28 days for all remaining visits.
+2.5 to 5 Years	To check for the progression of cancer, imaging and a blood sample will be done every 6 months until 5 years after your surgery.	✓		✓		There will be a range of ± 28 days for all visits

Legend: Approximately half-day hospital visit | Overnight hospital visit | At your house

Here is a link to the consent form, containing additional information about the study:

PERIOP-06_ICF.pdf

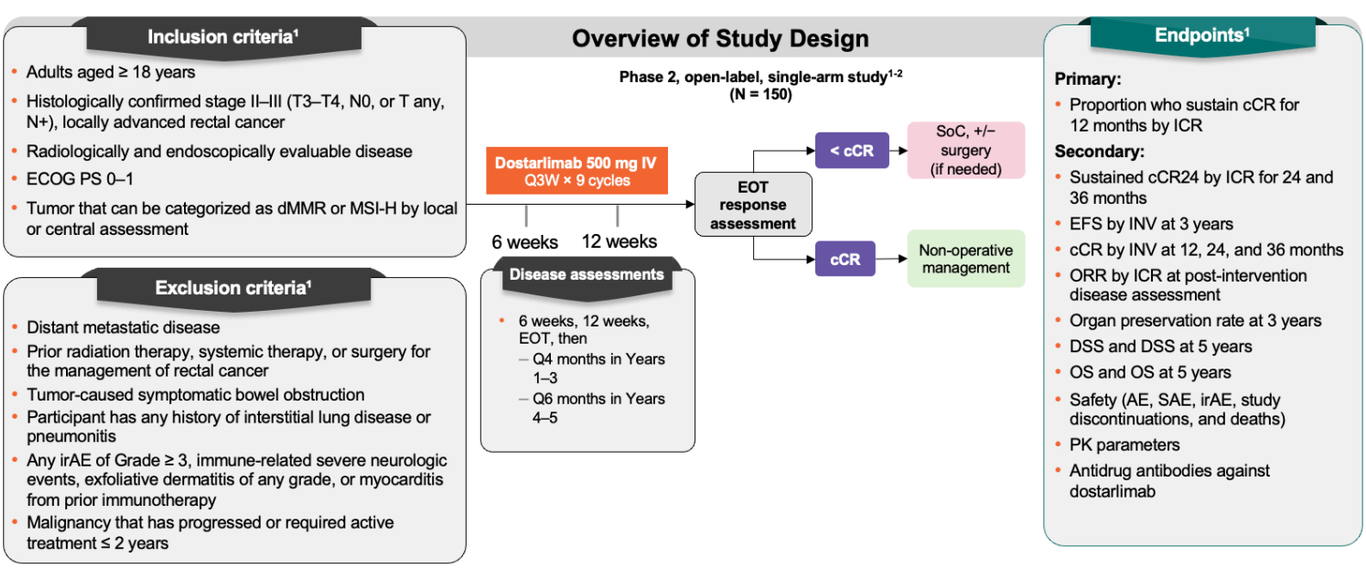
6. Now Available in Canada: AVENIO 324 Gene CGP Panel Matched to FoundationONE CDx Panel (Feb.1/24)

For more information, please visit the OncoHelix website.

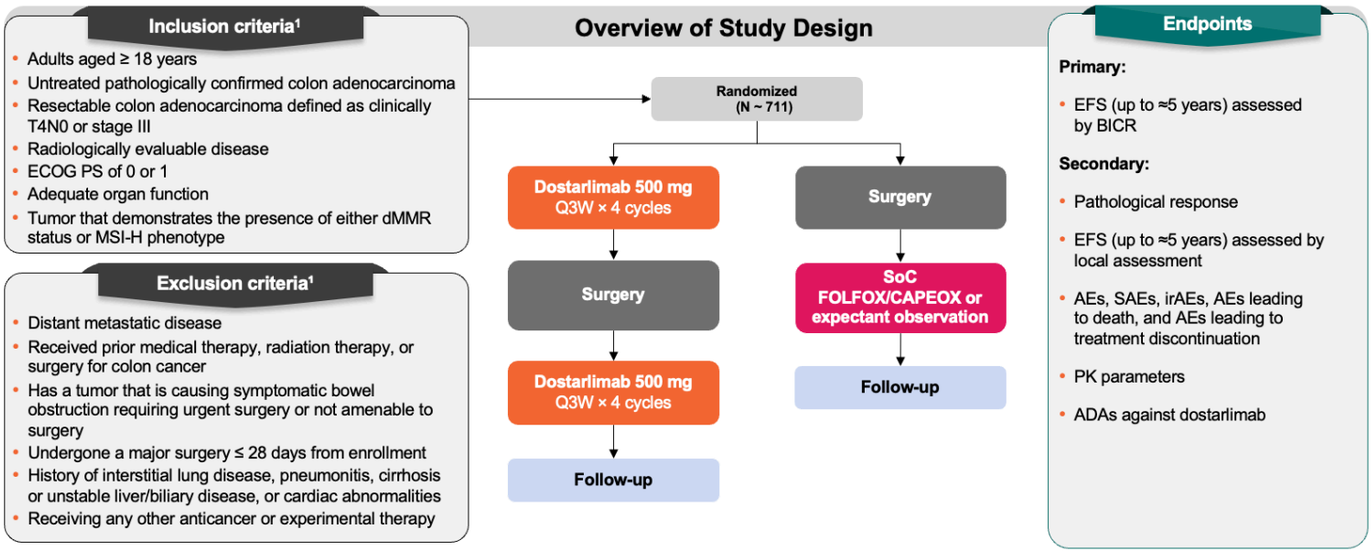
7. AZUR-1 and AZUR-2 Dostarlimab Trials Open in Canada (Dec.13/23)

Dostarlimab is an IgG 4 isotype humanized monoclonal antibody meaning it is made in a lab to serve as substitute antibodies that can restore, enhance, modify or mimic the immune system's attack on unwanted cells. In this case, dostarlimab blocks the interaction of PD-1 to its ligands PD-L1 and PD-L2 found on tumor cells. By blocking PD-1 activity, dostarlimab activates T cells allowing them to attack cancer cells by detecting and killing them. Dostarlimab has been approved for adult patients with mismatch repair-deficient (MMR-D) recurrent or advanced endometrial cancer (EC) in the US, and for MMR-D/microsatellite instability-high (MSI-H) recurrent or advanced EC in the EU. The drug is being investigated in multiple tumor types and in combination with other anticancer agents.

AZUR-1: Phase 2 StudyA single-arm, open label study of dostarlimab monotherapy in participants with untreated stage 2/3 MMR-D/MSI-H locally advanced rectal cancer.



AZUR-2: Phase 3 Study
An open-label, randomized study of peri-operative dostarlimab monotherapy vs standard of care in participants with untreated T4N0 or stage 3 MMR-D/MSI-H resectable colon cancer.



Please connect with CCRAN to receive a list of participating clinical trial sites in Canada.

https://www.gsk.com/en-gb/media/press-releases/european-commission-approves-gsk-s-jemperli-dostarlimab-the-first-anti-pd-1-therapy-approved-for-recurrent-or-advanced-endometrial-cancer/

8. A Study of Tucatinib with Trastuzumab and mFOLFOX6 Versus Standard of Care Treatment in First-line HER2+ mCRC (Jan.23/24)

This phase 3 **Mountaineer** study is being done to find out if tucatinib with other cancer drugs works better than standard of care to treat participants with HER2 positive colorectal cancer (CRC). This study will also test what side effects happen when participants take this combination of drugs.

Participants in this study have CRC that has spread through the body (metastatic) and/or cannot be removed with surgery (unresectable). Participants will be assigned randomly to the tucatinib group or standard of care group. The tucatinib group will get tucatinib, trastuzumab, and mFOLFOX6. The standard of care group will get either:

- mFOLFOX6 alone,
- mFOLFOX6 with bevacizumab, or
- mFOLFOX6 with cetuximab mFOLFOX6 is a combination of multiple drugs. All the drugs given in this study are used to treat this type of cancer.

The primary outcome measure is progression-free survival (PFS). Some of the secondary outcome measures include overall survival (OS), confirmed objective response rate (cORR), duration of response (DOR). The estimated primary completion date is August 31, 2025. To learn more about this study, you or your doctor may contact the study research staff using the contact information provided by the sponsor within the link below.

https://classic.clinicaltrials.gov/ct2/show/study/NCT05253651?term=MOUNTAINEER-03&draw=2&rank=1

9. CARMA BROS: CAnadian CAncers with Rare Molecular Alterations (CARMA) - Basket Real-world Observational Study (BROS) (Dec.12/23)

This study will collect data on Canadian cancer patients that have uncommon/rare changes in their tumors, such as alterations/rearrangements in the genetic material inside cells - known as deoxyribonucleic acid, or DNA, which acts as a map and gives directions to the cells on how to make other substances the body needs - because some of these changes have been found to respond to different drugs that help to stop the cancer. These rare changes occur in genes such as but not limited to ALK, EGFR, ROS1, BRAF, and NTRK which have targeted drugs in a family known as tyrosine kinase inhibitors (TKIs), and KRAS G12C mutation, which now has a targeted inhibitor drug therapy for patients with non small cell lung cancer (NSCLC). The goals for the study are to compare the natural history of such cancers and the treatment outcomes, including toxicities and patient-reported outcomes, for the different therapies.

Primary outcome measures include composite of progression free survival (PFS) or overall survival (OS). The secondary outcome measures include brain metastasis/other metastatic tumours, EORTC quality of life questionnaires (QLQ) - cancer patient-reported health related quality of life, EQ-5D-5L - patient-reported health related quality of life measure, and patient-reported economic impact. The estimated primary completion date is December 2025. To learn

more about this study, you or your doctor may contact the study research staff using the contact information provided by the sponsor within the link below.

https://classic.clinicaltrials.gov/ct2/show/study/NCT04151342?term=CARMA+BROS&draw=2&rank=1

10. Immunotherapy Combo Wins Big on PFS in First-Line mCRC (Jan.23/24)

Findings from the CHECKMATE-8HW trial revealed that first-line nivolumab plus ipilimumab led to a significant improvement in progression-free survival (PFS) compared with chemotherapy among patients with metastatic colorectal cancer (mCRC). More specifically, at 2 years, PFS was 72% among patients with microsatellite instability-high (MSI-H) or deficient mismatch repair (dMMR) randomized to the immunotherapy combination compared with just 14% among those randomized to chemotherapy with or without targeted therapy. The magnitude of the benefit was unexpected, especially considering patients only received four cycles of the immunotherapy combination in the trial. "It's a good surprise," said lead investigator Thierry Andre, MD, who presented the findings at the 2024 American Society of Clinical Oncology Gastrointestinal Cancers Symposium. The findings indicate that nivolumab plus ipilimumab should really be *a new standard*.

In CHECKMATE-8HW, patients were randomized to three regimens. The 202 patients in the combination arm received nivolumab 240 mg plus ipilimumab 1 mg/kg every 3 weeks for four doses, followed by nivolumab 480 mg every 4 weeks. The 101 patients in the chemotherapy group received investigator's choice of mFOLFOX6 or FOLFIRI with or without bevacizumab or cetuximab. And the nivolumab monotherapy arm received nivolumab 240 mg every 2 weeks for six doses, followed by nivolumab 480 mg every 4 weeks.

The combination as well as nivolumab alone has received US Food and Drug Administration's (FDA's) approval to treat MSI-H or dMMR mCRC in the second line, following chemotherapy failure. The FDA also approved pembrolizumab as first-line monotherapy for this CRC indication in 2020. The KEYNOTE-177 trial, which led to the pembrolizumab approval, reported a 2-year PFS of 48% among patients receiving the monotherapy. Andre was the lead investigator on KEYNOTE-177.

To compare PFS results for pembrolizumab and nivolumab alone, the CHECKMATE-8HW trial included a nivolumab monotherapy arm, but these results are pending, as are the overall survival findings, Andre said. Overall, CHECKMATE-8HW must be taken into context with KEYNOTE-177, and "we need a little bit more trial data" for oncologists to decide between the two options, said Neil Newman, MD, a radiation oncologist at the University of Texas Health Science Center, San Antonio, Texas, who co-moderated Andre's presentation. Andre noted, however, that if the nivolumab and pembrolizumab monotherapy results are similar, most patients will likely receive the nivolumab/ipilimumab combination, given the improved PFS outcomes.

The data from CHECKMATE-8HW are shaping up to make nivolumab/ipilimumab "the next great step in mCRC management beyond KEYNOTE-177. The new trial makes it imperative to standardize testing for immunotherapy candidacy upfront. Mark Lewis, MD, a gastrointestinal oncologist at Intermountain Healthcare in Murray, Utah, said “it is completely unacceptable for any patient with mCRC to not have their MMR/MSI status assessed”.

https://www.medscape.com/viewarticle/immunotherapy-combo-wins-big-pfs-first-line-mets-crc-2024a10001p7?ecd=wnl_conf_onc_ASCO-GI-NON-SPON_240204_mscpedit_etid6285886&uac=89059ER&impID=6285886

11. Targeted CRC Combo Improves QoL (Jan.30/24)

In patients with colorectal cancer (CRC) bearing the KRAS G12C mutation, a combination of the Kirsten rat sarcoma viral oncogene homologue (KRAS) G12C inhibitor *sotorasib* and the epidermal growth factor receptor inhibitor *panitumumab* led to an improvement in quality-of-life (QoL) measures compared with standard therapy.

The phase 3 CodeBreaK 300 trial included 160 patients who were randomized to once daily sotorasib (960 mg) plus panitumumab (Soto960), once daily sotorasib (240 mg) plus panitumumab (Soto240), or investigator's choice of trifluridine–tipiracil or regorafenib. The December 2023 paper described improvements in median progression-free survival, progression or death, and objective response (OR). The authors described statistically significant improvements in disease progression or death in the Soto960 group and the Soto240 group. The OR rate was highest in the Soto960 group, followed by the Soto240 group and the control group. The new analysis showed that both doses of sotorasib also improved patient-reported outcomes from baseline to week 8. At week 9, 63% of patients in Soto960 and 84% in Soto240 reported improvement in the Patient Global Impression of Change score (PGI-C) versus 37% in the chemotherapy arm. At week 17, the percentages were 77%, 59%, and 21%, respectively.

The clinical benefits and the better QoL outcomes associated with sotorasib at the high dose of 960 milligrams plus panitumumab establishes this combination as a potential new standard therapy for patients with chemorefractory KRAS G12C mutant CRC. Additionally, it’s quite reassuring that even if you compare two active drugs versus one active drug, this does not necessarily translate into impaired QoL assessments by the patients. CodeBreaK 300 may point the

way to other dual therapies involving kinase inhibitors. Clinical and preclinical studies had shown that targeted oncogenes like KRAS G12C and BRAF V600E alone would be insufficient in CRC.

https://www.medscape.com/s/viewarticle/targeted-colorectal-cancer-combo-improves-gol-2024a100021c?ecd=wnl_conf_onc_ASCO-GI-NON-SPON_240204_mscpedit_etid6285886&uac=89059ER&impID=6285886

12. Current and Emerging Therapies in Refractory mCRC (Nov.8/24)

New and emerging therapies for refractory metastatic colorectal cancer (mCRC) continue to move the bar in treatment options, according to Dr John L. Marshall, director of the Ruesch Center for the Cure of Gastrointestinal Cancers in Washington, DC.

Standard first- and second-line treatment approaches for mCRC involve a combination of chemotherapies and biologics that can generate 1-2 years of disease control. But metastatic disease becomes refractory to commonly used drugs such as oxaliplatin, irinotecan, and anti-EGFR monoclonal antibodies.

Among the earliest treatment options in the refractory space was the oral multi-kinase inhibitor regorafenib. Dr Marshall discusses how clinicians managed the drug's toxicity through dosing, making it a go-to for patients with refractory disease. A trial of the fixed-dose combination medication trifluridine-tipiracil (TAS-102) mirrored the progression-free survival data seen with regorafenib. A subsequent trial found that treatment with TAS-102 plus bevacizumab resulted in longer overall survival than TAS-102 alone. The tyrosine kinase inhibitor fruquintinib is pending FDA approval. An oral VEGF inhibitor, fruquintinib targets all three of the VEGF receptors.

Dr Marshall goes into further detail in a video for Medscape and closes by discussing emerging targeted therapies and combination immunotherapy approaches that promise further clinical benefit for patients with metastatic disease.

To watch the full video: https://reference.medscape.com/recap/995909?ecd=wnl_conf_onc_ASCO-GI-NON-SPON_240204_mscpedit_etid6285886&uac=89059ER&impID=6285886

Surgical Therapies

13. Hepatic Artery Infusion Pump (HAIP) Chemotherapy Program – Sunnybrook Odette Cancer Centre (Feb.1/24)

The HAIP program is a first-in-Canada for individuals where colon or rectal cancer (colorectal cancer) has spread to the liver and cannot be removed with surgery. The program involves a coordinated, multidisciplinary team approach to care, with close collaboration across surgical oncology, medical oncology (chemotherapy), interventional radiology, nuclear medicine, and oncology nursing. The Hepatic Artery Infusion Pump (HAIP) is a small, disc-shaped device that is surgically implanted just below the skin of the patient and is connected via a catheter to the hepatic (main) artery of the liver. About 95 percent of the chemotherapy that is directed through this pump stays in the liver, sparing the rest of the body from side effects. Patients receive HAIP-directed chemotherapy in addition to regular intravenous (IV) chemotherapy (systemic chemotherapy), to reduce the number and size of tumours. **Drs. Paul Karanicolas and Michael Raphael** are the program leads and happy to see patients who may be eligible for the therapy.

Presently at Sunnybrook Odette Cancer Centre, HAIP is being used in patients with colorectal cancer that has spread to the liver that cannot be removed surgically and has not spread to anywhere else in the body. Patients who have few (1-5) and very small tumors in the lungs may be considered if the lung disease is deemed treatable prior to HAIP. If you believe you may benefit from this therapy and/or would like to learn more about the clinical trial, your medical oncologist or surgeon may fax a referral to **416-480-6179**. For more information on the HAIP clinical trial, please click on the link provided below.

http://sunnybrook.ca/content/?page=colorectal-colon-bowel-haip-chemotherapy

14. Living Donor Liver Transplantation for Unresectable CRC Liver Metastases (Feb.2/24)

Approximately half of all colorectal cancer (CRC) patients develop metastases, commonly to the liver and lung. Surgical removal of liver metastases (LM) is the only treatment option, though only 20-40% of patients are candidates for surgical therapy. Surgical therapy adds a significant survival benefit, with 5-year survival after liver resection for LM of 40-50%, compared to 10-20% 5-year survival for chemotherapy alone. Liver transplantation (LT) would remove all evident disease in cases where the colorectal metastases are isolated to the liver but considered unresectable.

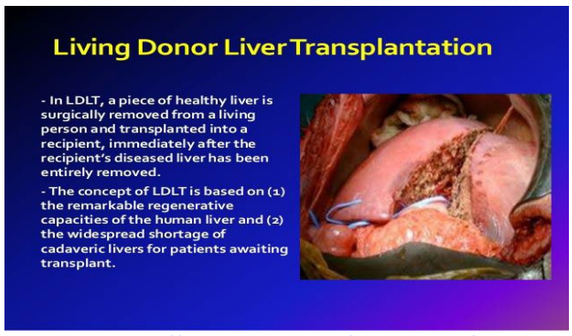


Image Source: ***https://www.slideshare.net/AhmedAdel65/preoperative***

While CRC LM is considered a contraindication for LT at most cancer centers, a single center in Oslo, Norway demonstrated a 5-year survival of 56%. A clinical trial sponsored by the University Health Network in Toronto will offer live donor liver transplantation (LDLT) to select patients with unresectable metastases limited to the liver and are non-progressing on standard chemotherapy. Patients will be screened for liver transplant suitability and must also have a healthy living donor come forward for evaluation. Patients who undergo LDLT will be followed for survival, disease-free survival, and quality of life for 5 years and compared to a control group who discontinue the study before transplantation due to reasons other than cancer progression.

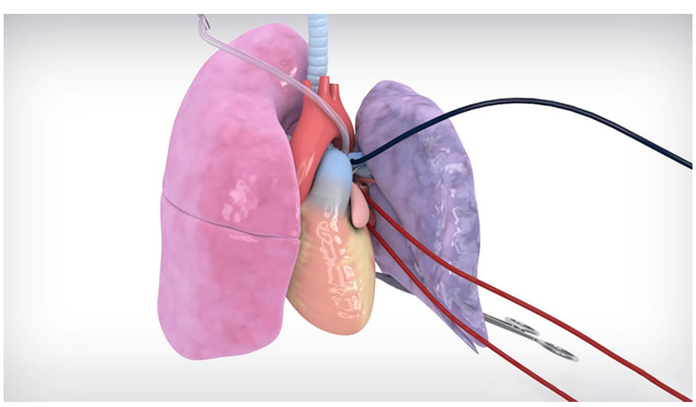
https://clinicaltrials.gov/ct2/show/NCT02864485

15. In Vivo Lung Perfusion (IVLP) for CRC Metastatic to Lung (Dec.9/23)

A new study is investigating a technique called In Vivo Lung Perfusion (IVLP) for delivering chemotherapy directly into the lungs at the time of surgery. Delivering chemotherapy directly to the lungs could potentially kill any microscopic cancer cells that are present in the lungs at the time of surgery, while sparing other major organs in the body from the side effects of chemotherapy.

At the University Health Network, this IVLP technique has been used recently in a Phase I study in patients with sarcoma, and they are now expanding on that experience to include patients with colorectal metastases. The purpose of this study is to test the safety of the IVLP technique and find the dose that seems right in humans. Participants are given oxaliplatin into one lung via IVLP and are watched very closely to see what side effects they have and to make sure the side effects are not severe. If the side effects are not severe, then more participants are asked to join the study and are given a higher dose of oxaliplatin. Participants joining the study later on will get higher doses of oxaliplatin than participants who join earlier. This will continue until a dose is found that causes severe but temporary side effects. The other lung will not be infused with anything, so that researchers can limit unforeseen toxicity to a single lung and see if one lung does better than the other.

The primary outcome is safety as measured by acute lung injury findings and the estimated primary completion date is January 1, 2027.



In Vivo Lung Perfusion Model

https://clinicaltrials.gov/ct2/show/NCT05611034?term=ivlp&draw=2&rank=1
Image Source: ***https://pie.med.utoronto.ca/TVASurg/project/in-vivo-lung-perfusion/***

16. Perioperative or Postoperative Probiotics Reduce Treatment-Related Complications in Adult CRC Patients Undergoing Surgery (Jan.17/24)

Recent investigations have explored the modulation of the intestinal microbiota with the use of probiotics as a therapeutic approach for managing colorectal cancer (CRC). Probiotics may help restore microbial homeostasis, inhibit the growth of pathogenic species, and reduce treatment-related complications. Therefore, the aim of this systematic review and meta-analysis of randomized controlled trials (RCTs) was to assess the efficacy of perioperative or postoperative probiotics as a therapeutic approach for managing CRC treatment–related complications in patients undergoing surgery, with or without adjuvant therapy.

Ten RCTs with 1276 patients were included. There was a significant decrease in the incidence of diarrhea, surgical site infection, urinary infection, pulmonary infection, abdominal distention, length of ATB therapy (mean difference (MD)− 1.66 days), and duration of postoperative pyrexia (MD− 0.80 days) in the probiotic group. Nevertheless, length of hospital stay, time to first defecation, and time to first solid diet were not different between groups. The findings suggest that perioperative or postoperative probiotics is effective for reducing treatment-related complications in patients with CRC undergoing surgery, with a lower rate of adverse events.

https://link.springer.com/article/10.1007/s12029-024-01016-8
Image Source: https://www.everydayhealth.com/diet-nutrition/can-probiotics-help-manage-chronic-health-conditions/

Radiation Therapies / Interventional Radiation

17. Study Offered at the Odette Cancer Centre to Treat Recurrent Rectal Cancer (Feb.9/24)

Magnetic resonance-guided focused ultrasound (MRg-FU) is a less invasive; outpatient modality being investigated for the thermal treatment of cancer. In MRg-FU, a specially designed transducer is used to focus a beam of low-intensity ultrasound energy into a small volume at a specific target site in the body. MR is used to identify and delineate the tumour, focus the ultrasound beam on the target, and provide a real--time thermal mapping to ensure accurate heating of the designated target with minimal affect to the adjacent healthy tissue. The focused ultrasound beam produces therapeutic hyperthermia (40-42°C) in the target field, causing protein denaturation and cell damage. Currently, there is no prospective clinical data reported on the use of MRg-FU in the setting of recurrent rectal cancer. Recurrent rectal cancer is a vexing clinical problem. Current retreatment protocols have limited efficacy. The addition of hyperthermia to radiation and chemotherapy may enhance the therapeutic response. With recent advances in technology, the investigators hypothesize that MRg-FU is technically feasible and can be safely used in combination with concurrent re-irradiation and chemotherapy for the treatment of recurrent rectal cancer without increased side-effects. The study is being offered at the Odette Cancer Centre. Here is the link to the study protocol:

https://clinicaltrials.gov/ct2/show/NCT02528175?term=magnetic+resonance+guided+focused+ultrasound&recr=Open&rank=1

Sunnybrook
ODETTE CANCER CENTRE
A Cancer Care Ontario Partner

Screening

18. Trends in the Incidence of Young-Onset CRC with a Focus on Years Approaching Screening Age (Feb.10/24)

With recent evidence for the increasing risk of **young-onset colorectal cancer (yCRC),** the objective of this population-based longitudinal study was to evaluate the incidence of yCRC in one-year age increments, particularly focusing on the screening age of 50 years. The study was conducted using linked administrative health databases in British Columbia, Canada including a provincial cancer registry, inpatient/outpatient visits, and vital statistics from

January 1, 1986 to December 31, 2016. Researchers calculated the incidence rates per 100,000 at every age from 20 to 60 years and estimated annual percent change in incidence (APCi) of yCRC using joinpoint regression analysis. 3,614 individuals were identified with yCRC (49.9% women). The incidence of CRC steadily rose from 20 to 60 years, with a marked increase from 49 to 50 years. Furthermore, there was a trend of increased incidence of yCRC among women. Analyses stratified by age yielded APCi's of 2.49% and 0.12% for women aged 30-39 years and 40-49 years, respectively and 2.97% and 1.86% for men. These findings indicate a steady increase over one-year age increments in the risk of yCRC during the years approaching and beyond screening age. These findings highlight the need to raise awareness as well as continue discussions regarding considerations of lowering the screening age.

https://academic.oup.com/jnci/advance-article/doi/10.1093/jnci/djaa220/6119347?questAccessKey=af490637-e51e-44d0-81b9-d1f2df7b60c9

Other

19. Young Adult CRC Clinic Available at Sunnybrook (Feb.5/24)

A recent study led by the University of Toronto doctors has observed a rise in colorectal cancer (CRC) rates in patients under the age of 50. The study mirrors findings from the U.S., Australia and Europe. The growing CRC rates in young people come after decades of declining rates in people over 50, which have occurred most likely due to increased use of CRC screening (through population-based screening programs) which can identify and remove precancerous polyps. Patients diagnosed under the age of 50 have a unique set of needs, challenges and worries. They are unlike those diagnosed over the age of 50. **Dr. Shady Ashamalla (colorectal cancer surgical oncologist), along with Dr**. **Petra Wildgoose (Hepatobiliary and Colorectal Oncology Surgical Assistant)**, and their team at the **Sunnybrook Health Sciences Centre** understand the needs of this patient population.

Dr. Shady Ashamalla, Head
Young Adult Colorectal Cancer Program

Dr. Petra Wildgoose, Lead
Young Adult Colorectal Cancer Program

Both belong to a multidisciplinary team of experts in the ***Young Adult Colorectal Cancer Clinic*** who work with young CRC patients, regardless of disease stage, to create an individualized treatment plan to support each patient through their cancer journey. Patients' needs and concerns will be addressed as they relate to:

- Fertility concerns and issues
- Young children at home
- Dating/intimacy issues
- Challenges at work
- Concerns about hereditary cancer
- Relationships with family and friends
- Psychological stress due to any or all of the above

The team of experts consists of:

- Oncologists (medical, surgical, radiation)
- Social workers
- Psychologists
- Geneticists
- Nurse navigator

Should a patient wish to be referred to Sunnybrook, they may have their primary care physician, or their specialist **refer them to Sunnybrook via the e-referral form, which can be accessed through the link appearing below.** Once the referral is received, the **Young Adult Colorectal Cancer Clinic** will be notified if the patient is under the age of 50. An appointment will then be issued wherein the patient will meet with various members of the team to address their specific set of concerns.

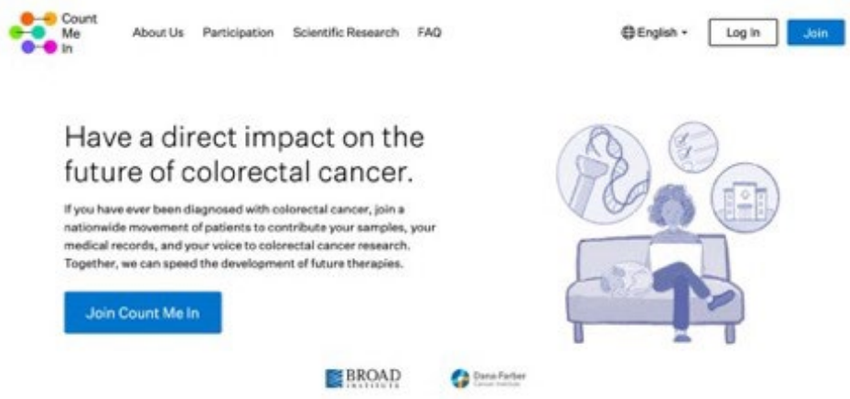
http://sunnybrook.ca/content/?page=young-adult-colorectal-cancer-clinic

20. CCRAN's Partnership with "Count Me In" (Feb.1/24)

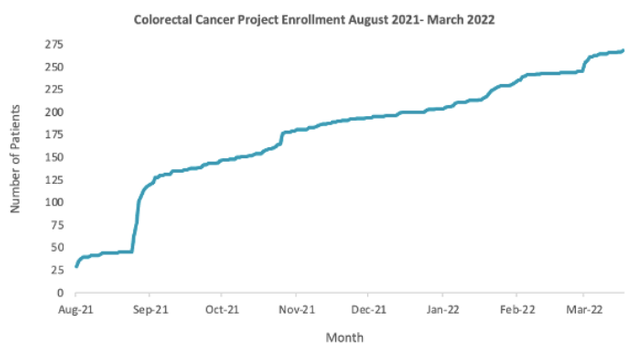
CCRAN is proud to partner with Count Me In, a nonprofit research initiative, on The Colorectal Cancer Project. This new project is open to anyone in the United States or Canada who has ever been diagnosed with colorectal cancer (CRC). Patients can find out more and join at **JoinCountMeIn.org/Colorectal**.

Through the project, patients are asked to complete surveys to share information about their experience with CRC, to share biological sample(s), and to allow for the research team to request copies of their medical records. The project team then de-identifies and shares data from these with the entire research community.

Every patient's story holds a piece of the puzzle that can help us better understand CRC. By discovering more about what drives cancer and sharing this data, CCRAN and the Colorectal Cancer Project believe insights can be gained to develop more effective therapies. One of the aims of the project is to reach populations that have been understudied, including individuals who are diagnosed with CRC at a young age, individuals from marginalized communities who have historically been excluded from research, and patients with metastatic CRC. Together, we can accelerate our understanding of CRC. To learn more or sign up to participate, visit **JoinCountMeIn.org/Colorectal**.

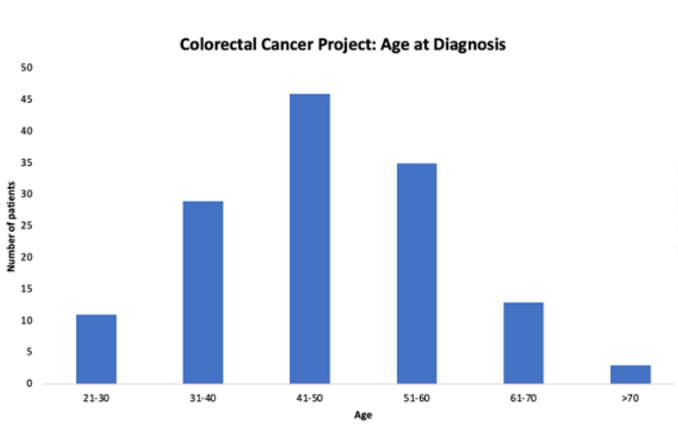


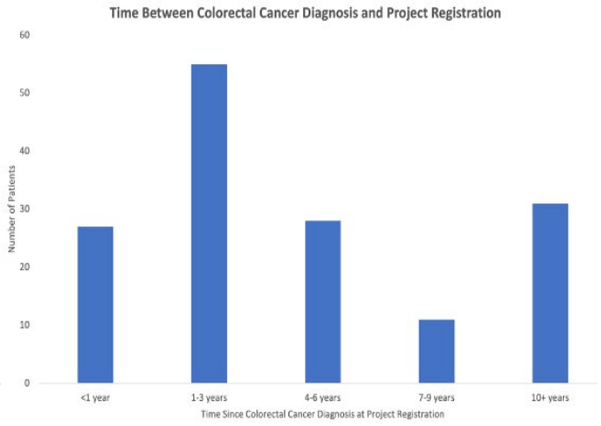
"***Count Me In***", a nonprofit cancer research initiative, is inviting all patients across the United States and Canada who have ever been diagnosed with colorectal cancer (CRC) to participate in research and help drive new discoveries related to this disease. The Colorectal Cancer Project will enable patients to easily share their samples, health information and personal lived experiences directly with researchers in order to accelerate the pace of research. Patients who have been diagnosed with CRC at any point in their lives can join the project by visiting JoinCountMeIn.org/colorectal. From there, patients will be invited to share information about their experience through surveys and to provide access to medical records as well as saliva samples and optional blood, stool, and/or stored tissue samples for study and analysis. Researchers from the Broad Institute of MIT and Harvard and Dana-Farber Cancer Institute use this information to generate databases of clinical, genomic, molecular, and patient-reported data that is then de-identified and shared with researchers everywhere. To date, more than 9,000 patients with different cancers have joined Count Me In and shared their data. "We still do not know why there is an alarming rise in CRC in young adults", said Andrea Cercek, MD Co-Director, Center for Young Onset Colorectal and Gastrointestinal Cancers Memorial Sloan Kettering Cancer Center and co-scientific leader of the Colorectal Cancer Project. "What we do know is that this is a global phenomenon that affects otherwise healthy individuals with no known risk factors. The Colorectal Cancer Project will provide researchers important information that will lead to a better understanding of this disease."

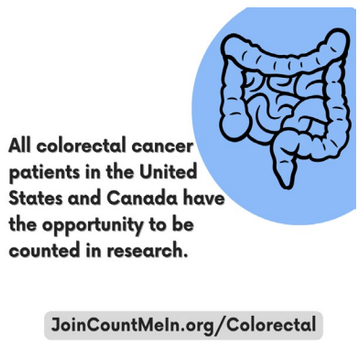


Over 250 patients have joined the Colorectal Cancer Project since the launch in fall 2021. Every patient that joins the Colorectal Cancer Project enables us to learn more about colorectal cancer. Pts diagnosed at any age, whether newly

diagnosed or years from their diagnosis, can enroll. If you have ever been diagnosed with colorectal cancer, you can visit **JoinCountMeIn.org/Colorectal** to enroll and have a direct impact on research and future treatment strategies.







Every colorectal cancer patient's story holds a piece of the puzzle that can help us better understand how to treat this disease. Join our partners at *@joincountmein* to help generate more data for CRC by sharing your medical records, samples, and unique experiences with researchers everywhere.

Learn more at JoinCountMeIn.org/colorectal

https://www.news-medical.net/news/20210914/Colorectal-Cancer-Project-launches-to-improve-understanding-of-the-disease-and-accelerate-research.aspx
https://www.medicalnewstoday.com/articles/antibiotic-use-linked-to-increased-risk-of-colorectal-cancer#Use-of-antibiotics-and-an-increased-risk-of-colon-cancer

21. CCRAN Has Launched 4 New Information/Support Groups Based On Age and Disease Stage (Feb.2/24)

CCRAN is pleased to announce a new format for monthly information / support group meetings. To ensure peer support is relevant, meaningful and timely for each participant, CCRAN has stratified the groups according to disease stage and early vs average onset colorectal cancer.

Meetings will begin with a brief presentation on a topic of relevance. Following the presentation, patients and caregivers will be assigned to the support group of relevance to them. Please RSVP to **Cassandra Macaulay**: Cassandra.m@ccran.org. We look forward to hosting you at our monthly information/support group meetings.

22. LifeLabs Has Launched Signatera, Offering Canadians an Innovative and Personalized Approach to Managing Cancer (Feb.1/24)

LifeLabs is pleased to share the launch of Signatera, a highly sensitive, personalized molecular residual disease (MRD) assay developed by Natera for treatment monitoring and molecular residual disease assessment in patients previously diagnosed with cancer. This innovative test uses circulating tumor DNA (ctDNA) and is personalized for each patient to help assess recurrence risk and identify relapse up to two years earlier than the current standard of care tools. The clinical utility of Signatera across cancer types has been validated by multiple studies. In those trials, Signatera demonstrated predictive values such as:

88% sensitivity to relapse

Average lead time 8.7 mos

89% sensitivity to relapse

Average lead time 9.5 mos

92% sensitivity to relapse

Average lead time 4.0 mos

100% sensitivity to relapse

Average lead time 2.8 mos

Signatera testing involves two phases with pre-supplied collection kits. The first phase is an initial test that analyzes both a tumour tissue and blood sample, and the second phase involves subsequent blood tests on an as-needed basis. It is a safe, non-invasive way to monitor ctDNA levels to help physicians understand treatment efficacy and detect relapse without the inconvenience of repeated tissue biopsies and/or imaging.

https://www.lifelabs.com/lifelabs-launches-signatera-offering-canadians-an-innovative-and-personalized-approach-to-managing-cancer/

23. Natera Announces Publication of Prospective, Multi-Site CIRCULATE Study in Nature Medicine Demonstrating Signatera's Ability to Predict Chemotherapy Benefit in CRC (Jan.17/24)

Natera, Inc., a global leader in cell-free DNA testing, announced the publication of a new study in *Nature Medicine*, which demonstrates the ability of the Signatera molecular residual disease (MRD) test to identify patients with stage II-IV colorectal cancer (CRC) who are at an increased risk of recurrence and predict who is likely to benefit from adjuvant chemotherapy (ACT).

The paper describes results from the GALAXY arm of the ongoing CIRCULATE-Japan trial, which is one of the largest and most comprehensive prospective studies of MRD testing in resectable CRC. The data builds on results previously presented at the 2022 ASCO Gastrointestinal Cancers Symposium (ASCO GI), now with median clinical follow-up extended to 16.74 months and DFS assessment at 18 months.

In the study, 1,039 patients with stage II-IV resectable CRC were monitored prospectively using the Signatera MRD test. Key takeaways include:

- **Post-surgical MRD status was predictive of chemotherapy benefit**
- **Post-surgical MRD status was the most significant prognostic risk factor for recurrence**, in a multivariate analysis that accounted for all clinicopathological risk factors currently used for prognostication (HR 10.82, p-value <0.001).
- **Pre-surgical detection rate of 95.9%** in patients with pathologic stage II-III disease and 93.1% in patients with stage II-IV disease.
- **Signatera dynamics are indicative of treatment response**

This study provides strong evidence that Signatera MRD-positive patients will benefit significantly from adjuvant therapy, while MRD-negative patients may be safely observed, regardless of clinical or pathological stage.

https://www.natera.com/company/news/natera-announces-publication-of-prospective-multi-site-circulate-study-in-nature-medicine-demonstrating-signateras-ability-to-predict-chemotherapy-benefit-in-colorectal-cancer/

24. The Childhood Cancer Identity Project (CCHIP): Examination of Cancer Identity and Wellbeing in Adult Survivors of Childhood Cancer (Jan.30/24)

The Childhood Cancer Identity Project (CCHIP) aims to better understand how individuals view themselves after cancer treatment has ended, referred to as cancer identity. The project also intends to understand the impact cancer identity has on mental and physical health. Following completion of this study, the findings will be used to integrate cancer identity into overall care of childhood cancer survivors. Findings may also support the use of patient-preferred terminology in clinical practices, aftercare clinics, research, and among the public.

Adult survivors of childhood cancer are welcome to complete the survey using the following link:
https://concordia.yul1.qualtrics.com/jfe/form/SV_eRvL6U1F8Yv1BfU

25. More Young People Under 50 are Getting Cancer, Here's What We Know About Why (Jan.24/24)

The epidemiological landscape of cancer incidence is changing, an editorial in the journal BMJ Oncology recently warned after a global study found "early-onset" cancers — cancer diagnosed in people under 50 — increased by 79%,

and the number of deaths from those cancers by 28%, over three decades. One Canadian analysis showed that, between 1983 and 2012, rates of cancer among the under 50s increased significantly at 13 cancer sites: colon, rectum, bone, breast, connective and soft tissue, uterus, gallbladder, kidney, esophagus, pancreas, testis and thyroid. The most dramatic increase involved colon and rectal cancers in the 20 to 39 age group. Among 20 to 24 year olds, the rates increased annually by four to six per cent. The increase in colorectal cancer (CRC) diagnoses in Canadians under 50 continued beyond 2012 and is "possibly accelerating," another study warned.

Even before these studies came out, anecdotally doctors were reporting far more young adults with CRC, and fewer over 50s. What's not understood is why. There are plenty of theories, including diets high in processed, fatty and sugary foods and low in fruits, vegetables, fish and fibre; processed meats like bacon and cold cuts; antibiotic use that can alter the gut's microbiome and cause chronic inflammation in the bowel; moderate or heavy alcohol consumption; sedentary lifestyles (too much sitting); women putting off having babies (pregnancy reduces a woman's lifetime number of menstrual cycles and, therefore, her exposure to circulating estrogen levels that can increase the risk of breast cancer); and excess body fatness. Obesity has been linked to at least eight of the cancers increasing in the under 50s. First-degree relatives (a parent, sibling or child) with cancer also increases a person's risk. So do some hereditary disorders. But even then, doctors say they're seeing younger cancer patients who don't fit into any of the risk categories. **The only expert answer, the only truly scientific-based answer is in many cases we don't know the exact cause.**

Signs of CRC include an abrupt change in bowel habits (thinning, or less formed stools), blood in stool, abdominal pain, or masses people can feel. One U.S. study found the total time from the first sign of bleeding to treatment was 217 days for younger people, versus 58 days for the over 50s. Younger people tend to put off seeking medical attention when symptoms arise, thinking, "I'm too young for cancer." Doctors might not also think, "CRC" in a 30-year-old with blood in his stool and take steps to rule it out.

In Canada, screening, whether stool tests or colonoscopies, typically starts at age 50. "We're reaching lots of people and finding lots of polyps and pre-cancers and treating it before it matures into cancer. But we're just not applying (screening) to everybody yet," Dr. Shady Ashamalla said. As the cancer tide shifts, programs need to adapt "to make sure you aren't ignoring these people at different stages of life."

https://nationalpost.com/health/young-people-under-50-cancer-rates
Image Source: https://coloncancerfoundation.org/rise-in-crc-among-young-adults-continues-to-baffle-researchers/

26. New Research Points to a Better Biomarker for MSI mCRC (Jan.2/24)

David Kerr, a professor of cancer medicine at the University of Oxford, talked with Medscape News about a paper published earlier this year in Annals Oncology. They looked at how we can identify patients who are likely to be more responsive to immune checkpoint inhibitors. The study included 110 patients with metastatic colorectal cancer (mCRC) who had been treated with programmed death-ligand 1 (PD-L1) inhibitors plus or minus a cytotoxic T-lymphocyte–associated protein 4 (CTLA-4) inhibitor.

The research team looked at tools that we had considered to be reasonable markers of response, such as tumor mutational burden, other work that had been done taking a deeper dive into microsatellite insufficiency and infiltrating immune cells — things that seem very plausible in terms of identifying patients who would respond better to immune manipulation, if you like. However, these didn't figure when they made their deep sequencing effort.

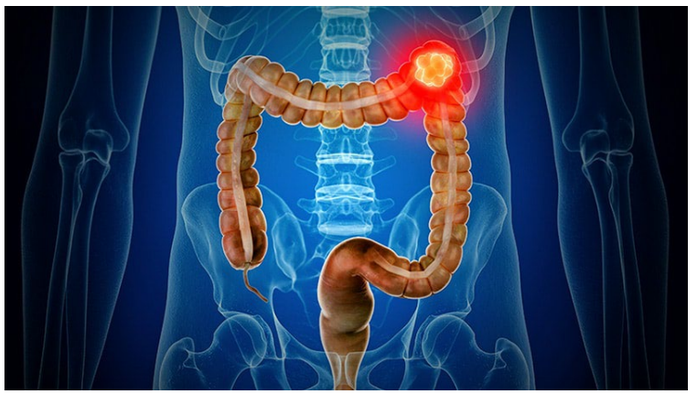
If you take a harder look at the genes associated with microsatellite instability (MSI) and the whole set of 182 RNA sequences, which were around the transforming growth factor beta (TGF-beta) pathway, we know that TGF-beta is a very important player in terms of controlling the immune microenvironment. It has an anti-immunological effect. By putting two new components that they've discovered through the sequencing experiments, they've come up with a rather nice *set of biomarkers that do identify patients with a significantly higher chance of responding to treatment*.

"This is a step in the right direction. We're not quite there yet, but this is a very commendable piece of work," said Kerr, "I think we need to do some work looking at the wider community of oncologists to get feedback from the frontline. To

those of us who are interested in biomarkers, what do we need to design into our biomarker studies to make them sufficiently compelling to be used by the clinical frontline?".

https://www.medscape.com/viewarticle/995426?ecd=wnl_conf_onc_ASCO-GI-NON-SPON_240204_mscpedit_etid6285886&uac=89059ER&impID=6285886

27. CRC Risk Increasing Across Successive Birth Cohorts (Jan.30/24)



Colorectal cancer (CRC) epidemiology is changing due to a birth cohort effect, also called birth cohort CRC — the observed phenomena of the rising risk for CRC across successive generations of people born in 1960 and later. Birth cohort CRC is associated with increasing rectal cancer (greater than colon cancer) diagnosis and distant-stage (greater than local-stage) CRC diagnosis, and a rising incidence of early-onset CRC (EOCRC), defined as occurring before age 50.

Generation X (individuals born in 1965-1980) experienced an increase in EOCRC, and rates subsequently increased in this generation after age 50. Rates are 1.22-fold higher among people born in 1965-1969 and 1.58-fold higher among those born 1975-1979 than among people born in 1950-1954. Now rates are also increasing across younger generations, particularly among Millennials (individuals born in 1981-1996) as they enter mid-adulthood. Incidence rates are 1.89-fold higher among people born in 1980-1984 and 2.98-fold higher among those born in 1990-1994 than among individuals born in 1950-1954. These birth cohort effects are evident globally, despite differences in population age structures, screening programs, and diagnostic strategies around the world. Due to this ongoing trend, physicians anticipate that CRC rates will likely continue to increase as higher-risk birth cohorts become older, the authors wrote.

"The changing epidemiology means that we need to redouble our efforts at optimizing early detection and prevention of CRC," said Samir Gupta, MD, the review's lead author and professor of gastroenterology at the University of California, San Diego, California.

For those younger than 45, it is critical to raise awareness about the signs and symptoms of CRC, such as hematochezia (rectal bleeding), iron deficiency anemia, and unintentional weight loss, as well as family history. For ages 45 and older, a major focus should be placed on increasing screening participation and follow-up after abnormal results, addressing disparities in screening participation, and optimizing screening quality. In addition, as CRC incidence continues to increase, health systems and policymakers should ensure every patient has access to guideline-appropriate care and innovative clinical trials.

https://www.medscape.com/viewarticle/colorectal-cancer-risk-increasing-across-successive-birth-2024a1000226?ecd=wnl_conf_onc_ASCO-GI-NON-SPON_240204_mscpedit_etid6285886&uac=89059ER&impID=6285886

Nutrition / Healthy Lifestyle

28. EXercise for Cancer to Enhance Living Well (EXCEL) Study (Jan.29/24)

Exercise for Cancer to Enhance Living Well (EXCEL) is a 5-year Canada-wide project, which offers free, 8-12-week exercise classes designed specifically for individuals undergoing or recovering from cancer treatment. Classes are delivered online through a secure video-conferencing platform, and where possible, in-person. These group classes run for 60 minutes, twice a week for 8-12 weeks. They are offered three times a year: January, April, and September. The next programs will be running around **early-to-mid-April until the end of June**.

Physical activity can help overcome treatment-related side effects such as fatigue and pain, improve mental health by reducing anxiety and depression, and improve overall quality of life for individuals living with and beyond cancer. Studies show that physical activity may even reduce the risk of recurrence for some cancers. Many urban centres in Canada offer cancer-specific exercise programs, however, rural and remote areas tend to lack exercise resources to support cancer survivors, resulting in lower activity levels, poorer health, and diminished quality of life. Thus, EXCEL targets cancer survivors living in rural and remote regions across Canada, empowering them to move more and providing opportunities to benefit from physical activity.

To learn more about the EXCEL study: https://kinesiology.ucalgary.ca/labs/health-and-wellness/research/research-studies/exercise-cancer-enhance-living-well-excel

To hear about participant experiences: https://www.youtube.com/watch?v=c01oo4Yd3oA

29. AICR's Healthy10 Challenge (Jan.30/24)

The American Institute for Cancer Research (AICR) has a free, 10-week interactive program called the Healthy10 Challenge which gets you on track to achieving your diet and exercise goals, while reducing your cancer risk at the same time. Each week you'll conquer a different challenge focused on making better food decisions and being more active. And you'll get all the tools you need along the way.

The weekly goals are as follows:

Week 1 - Strive for a Healthier Plate
Use the 2/3 - 1/3 plate principle for at least 5 meals this week. Focus on following the New American Plate by filling at least 2/3 of your plate with cancer-protective, healthy weight-promoting, plant foods (I.e., vegetables, fruits, whole grains, beans, nuts and seeds). The remaining 1/3 or less of your plate should be filled with animal foods such as poultry, seafood, lean red meats, eggs and dairy.

Week 2 - Get Up and Going
Add an extra 5-10 active minutes or 500-1,000 additional steps each day to maintain a healthy weight and keep active.

Week 3 - Add Some Colour
Add at least 1 serving of colorful vegetables or fruits to your meals. These can help promote health and protect against cancer by:

- Stimulating the immune system
- Reducing the kind of inflammation that makes cancer growth more likely
- Preventing DNA damage and help with DNA repair
- Slowing the growth rate of cancer cells
- Helping to regulate hormones

Week 4 - Up and At' Em
Add an extra 5-10 minutes or 500-1,000 steps of more intense physical activity to maintain a healthy weight and keep active.

Week 5 - Enjoy Whole Grains
Eat 3 or more servings a day of whole grains, every day this week. Focus on replacing refined grain foods you eat, such as white bread, white rice and refined ready-to-eat breakfast cereals, with WHOLE-grain foods:

- Swap your refined breakfast cereal for a high-fiber, whole-grain cereal that contains at least 5 grams of dietary fiber
- Replace white bread with bread labeled as 100% whole-wheat bread
- Try quick cooking whole-wheat couscous or whole-grain angel hair spaghetti as a base for stir fries and thick stews

Week 6 - Move More Strategies
Replace sitting time with 5-10 minutes or 500-1,000 steps of physical activity.

Week 7 - Make Plants the Center of Your Plate
Eat no more than 18 ounces of cooked red meat. If you do eat processed meat, limit it to once a week with the ultimate goal of avoiding it.

Week 8 - Shake Up Your Routine
Add 30 minutes or take 4,000 additional steps while doing a NEW physical activity at least 3 days this week.

Week 9 - Quench Your Thirst
Replace sugar-sweetened beverages with water, tea, coffee, and milk. Replace alcoholic beverages with alcohol-free fizzers or reduced alcohol spritzers. Too many sugary drinks mean too many extra calories. And that can lead to excess body fat, which increases risk for many cancers, heart disease and diabetes. Alcohol-containing beverages are also high in calories and alcohol itself increases cancer risk.

Week 10 - Putting It All Together
Focus on making 5 improvements to your home, work and social environments to eat smart and move more.

- In your kitchen: look for ways to arrange food and beverages on counters, shelves and in the fridge to make healthier choices convenient
- At work: pay attention to how your workplace supports or doesn't support your healthy choices. Make a plan to help it work for you
- With friends and family: ask for their support to make choices that will help you reach your goals

https://healthy10challenge.org/

30. Too Tired for Physical Activity? Here Are The Top 12 Ways to Get More Energy (Jan.2/24)

Physical activity is recommended for cancer prevention, but sometimes it is hard to add it in to your busy life. And other times, you may just be too tired, drained or unmotivated to be active. You can take control by making choices that boost your energy level and shape a mindset to help you overcome barriers to exercise.

Add flexibility to how you meet your goal.
Research suggests that when exercise is a routine part of your day, it's easier to stick with the habit. However, being too rigid can make it harder to stick with the plan, especially when you're low on energy. Instead, have a plan for when you want to be physically active, and then have a "plan B" to save the day. Remember, any movement is better than none. Your plan B may be to shorten the time, reduce the intensity or slow your pace. Physical activity has benefits even in short blocks. If you're recovering after a cancer diagnosis, make sure to have back-up plans for days that may be particularly challenging.

Get the restorative sleep you need.
When you're short on sleep or don't sleep well, you may lack energy to exercise. Studies suggest that the sleep-exercise relationship goes in both directions. Physical activity makes it easier to sleep and improves sleep quality.

Try making a sleep routine. Aim for a consistent bedtime and set a timer to start winding down 30 minutes ahead. Experiment with different relaxing activities like reading, listening to music, practicing slow yoga, stretching or sipping a warm caffeine-free beverage. Taking a hot bath or shower can also help you relax, and the drop in body temperature that follows can increase readiness to sleep.

Watch out for sleep disruptors.
It's hard to have enough energy for exercise when you had trouble sleeping the night before. One solution for sleep problems is to cut off caffeine intake eight hours before your usual bedtime. Caffeine in coffee, black or green tea, cola and energy drinks is a stimulant that can take eight hours or more to wear off. Alcohol can also disrupt sleep. Although an alcohol-containing "nightcap" before sleep may help you relax, studies show that it can interrupt sleep quality and reduce the restorative stages of sleep.

Take a nap.
A lunchtime or early afternoon nap for 15 to 30 minutes can provide a valuable energy boost for some people. But set an alarm, since napping for too long can make it harder to fall asleep at night. Try to set your nap before 3 pm. Napping later than this tends to make it harder to fall asleep later on.

Stay hydrated.
Being even a little under-hydrated can increase feelings of fatigue and make tasks seem more difficult. Start the day with a glass of water and carry a water bottle with you so you sip all day long. You can also enjoy non-caffeinated drinks in the afternoon and evening, such as unsweetened sparkling water and herbal tea.

Get enough calories.
You need to provide your body with food as fuel to feed your physical activity. When your calorie consumption is too low, energy levels fall short. It's important to find the right calorie level to manage weight while still providing enough energy for workouts.

Maintain muscle with exercise and healthy eating.

Adults gradually lose muscle over time unless they create a lifestyle with frequent physical activity and a diet with enough calories, protein and other nutrients. As muscle drops, exercise that was once easy becomes harder. That may drop your motivation to keep going.
Muscle lost during lack of use or health challenges can be rebuilt. Older adults and people with (or recovering from) cancer need a bit more protein than other people. But that doesn't require big portions of meat. You can get protein from chicken, fish, eggs, dairy food, beans, soy, nuts and seeds.

Refuel with purpose.
When you are very physically active, your body uses up proteins (stored in muscle) and carbs (stored as glycogen), and these need to be replaced. Try to have a small meal or snack within two hours of significant exercise. It should contain some grains to replenish carbohydrates and some protein to support muscle tissue. Drinking water also helps your body recover more quickly and reduce fatigue.

Make healthy eating fit in your lifestyle.
If you're short on time or energy for preparing meals, that doesn't mean you need to settle for quick snacks and fast food that leave you feeling too wiped out to exercise. Instead, build a list of nourishing meals you can pull together quickly. Choose convenience foods that save time without shortchanging nutrients. Before you start cooking, decide if it is a dish you can freeze for later. If so, make a double amount to have in a few days or freeze for later use.

Focus on moving forward – not perfection.
When it comes to changing habits, your mindset often poses a more powerful barrier than physical limitations. A few mindset hacks can help you find ways to take some steps forward even amidst challenges. It's easy to fall into the trap of thinking it needs to be done perfectly. But that mindset can be what keeps you from moving forward.
Find one task in your day where "good enough" creates time to work out. When you tell yourself that you're too busy to exercise, get enough sleep, or put together a healthy meal, find one thing in your day you can do in 15 fewer minutes.

Flag your to-do list for what's most important.
You can easily spend all day dealing with things that seem pressing but run out of energy for doing what matters most. Instead, prepare for the day in advance by naming the three most important tasks for the day. Midday, stop and check to see how you may need to adjust your to-do list to be able to move forward on top priorities – including a workout.

Notice the immediate pay-off.
Physical activity, nourishing food and good quality sleep all pay off in health benefits. But it's human nature to be more motivated to do things that pay off right away. Switch from "I should" to "I feel better when" talk. Mood and energy improve with even a brief walk, a bit more sleep, or a small shift to less sweets and more food that sustains energy and satisfaction. Rather than relying on guilt or willpower for these choices, remind yourself of how much better a savvy choice can leave you feeling today.

https://www.aicr.org/resources/blog/too-tired-for-physical-activity-here-are-the-top-12-ways-to-get-more-energy/?utm_medium=email&utm_source=WH1CF1W&utm_campaign=W241CF&sl_tc=&sourceid=WH1CF1W&eType=EmailBlastContent&eId=6ce4b03e-f72f-49d8-b704-19a950a4cb37
Image Source: https://www.shutterstock.com/search/cartoon-workout

COVID-19 Updates

31. Frequently Asked Questions for COVID-19

Q: What is COVID-19 (or novel Coronavirus Disease - 19)?

A: Coronaviruses are a large family of viruses that can cause illnesses in humans and animals. Coronaviruses can cause illnesses that range in severity from the common cold to more severe diseases such as Severe Acute Respiratory Syndrome (SARS) and most recently, COVID-19. COVID-19 or novel coronavirus originated from an outbreak in Wuhan, China in December 2019. The most common symptoms associated with COVID-19 can include fever, fatigue, and a dry cough. Though additional symptoms have now been linked with the disease, which may include aches and pains, nasal congestion, runny nose, sore throat, diarrhea, skin rash and vomiting. It is also possible to become infected with COVID-19 and not experience any symptoms or feeling ill. The spread of COVID-19 is mainly through the transmission of droplets from the nose or mouth when a person coughs, exhales or sneezes. These droplets land on surfaces around a nearby person. COVID-19 can be transmitted to that nearby person who may end up touching the surface contaminated with COVID-19 and then end up touching their nose, mouth, or eyes. A person can also contract COVID-19 through inhaling these droplets from someone with COVID-19. Although research is still ongoing, it is important to note that older populations (over the age of 65), those with a compromised immune system and those with pre-existing conditions including heart disease, high blood pressure, lung disease, diabetes or cancer may be at a higher risk of severe illness due to COVID-19.

https://www.who.int/news-room/q-a-detail/q-acoronaviruses

Q: What can I do to avoid getting Coronavirus?

A: There are various ways in which we can reduce our risk of contracting COVID-19. Below are some measures suggested by the World Health Organization
1. Keep at least 2 metres (or 6 feet) between yourself and other people. This will reduce the risk of inhaling droplets from those infected with COVID-19.
2. Regularly clean your hands for at least 20 seconds with warm water and soap, or an alcohol-based hand rub. This will kill any viruses on your hands.
3. Avoid touching your eyes, nose and mouth. If the virus is on your hands, it can enter the body through these areas.
4. Follow good respiratory hygiene by covering your mouth and nose with a tissue or elbow when you cough and sneeze. This prevents the droplets from settling on surfaces or being released into the air around you.
5. Stay home as much as possible, especially if you are feeling unwell. If you think you may have the Coronavirus, please see "What should I do if I think I have Coronavirus?" section.
6. Please wear a face covering or mask in public when physical distancing is not possible.

https://www.who.int/news-room/q-adetail/q-a-coronaviruses

Q: Are there special precautions that people with cancer can take?

A: People with cancer (and other chronic ailments such as heart disease, diabetes, high blood pressure and lung disease) are at a higher risk of severe illness due to COVID-19 as cancer is considered a pre-existing health issue. Some cancer treatments including chemotherapy, radiation and surgery can weaken the immune system, making it harder for the body to fight infections and viruses, such as Coronavirus. It is important to diligently follow the World Health Organization's recommendations above to reduce the risk of contracting COVID-19. If you have any concerns about your risk, it is best to contact your doctor or healthcare team.

Q. Will anything change with regards to my cancer related medical visits?

As each patient and treatment plan is unique, it is always best to contact your health care provider for updated information about your treatment plan. In some cases, it is safe to delay cancer treatment until after the pandemic risk has decreased. In other cases, it may be safe to attend a clinic that is separate from where COVID-19 patients are being treated. Oral treatment options could be prescribed by your care provider virtually, without the need to attend the clinic. Finally, some follow-up appointments or discussions could be held virtually (via skype or zoom for example) or over the phone to minimize your risk. As we know, conditions and protocols are changing daily due to the nature of the COVID-19 outbreak, and vary based on location, therefore, the best first step is to reach out to your care provider for guidance.

https://www.cancer.gov/contact/emergencypreparedness/coronavirus

Should you wish to contact your local public health agency, please see below.

Alberta
COVID-19 info for Albertans
Social media: Instagram @albertahealthservices, Facebook @albertahealthservices, Twitter @GoAHealth
Phone number: 811

British Columbia
British Columbia COVID-19
Social media: Facebook @ImmunizeBC, Twitter @CDCofBC
Phone number: 811

Manitoba
Manitoba COVID-19
Social media: Facebook @manitobagovernment, Twitter @mbgov
Phone number: 1-888-315-9257

New Brunswick
New Brunswick Coronavirus
Social media: Facebook @GovNB, Twitter @Gov_NB, Instagram @gnbca
Phone number: 811

Newfoundland and Labrador
Newfoundland and Labrador COVID-19 information

Social media: Facebook @GovNL, Twitter @GovNL, Instagram @govnlsocial
Phone number: 811 or 1-888-709-2929

Northwest Territories
Northwest Territories coronavirus disease (COVID-19)
Social media: Facebook @NTHSSA
Phone number: 811

Nova Scotia
Nova Scotia novel coronavirus (COVID-19)
Social media: Facebook @NovaScotiaHealthAuthority , Twitter @healthns, Instagram @novascotiahealthauthority
Phone number: 811

Nunavut
Nunavut COVID-19 (novel coronavirus)
Social media: Facebook @GovofNunavut , Twitter @GovofNunavut, Instagram @governmentofnunavut
Phone number: 1-888-975-8601

Ontario
Ontario: The 2019 Novel Coronavirus (COVID-19)
Social media: Facebook @ONThealth, Twitter @ONThealth , Instagram @ongov
Phone number: 1-866-797-0000

Prince Edward Island
Prince Edward Island COVID-19
Social media: Facebook @GovPe, Twitter @InfoPEI,

Quebec
Coronavirus disease (COVID-19) in Québec
Social media: Facebook @GouvQc, Twitter @sante_qc
Phone number: 1-877-644-4545

Saskatchewan
Saskatchewan COVID-19
Social media: Facebook @SKGov, Twitter @SKGov
Phone number: 811

Yukon
Yukon: Find information about coronavirus (COVID-19)
Social media: Facebook @yukonhss, Twitter @hssyukon
Phone number: 811