The following colorectal cancer treatment and research updates extend from October 13th, 2022, to November 17th, 2022, 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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1. Phase II LEAP Clinical Trial For mCRC (Nov.10/22)

The purpose of this study is to determine the safety and efficacy of combination therapy with pembrolizumab (MK-3475) and Levantine (E7080/MK-7902) in patients with triple-negative breast cancer (TNBC), ovarian cancer, gastric cancer, colorectal cancer (CRC), glioblastoma (GBM), or biliary tract cancers (BTC). Participants will be enrolled in initial tumor-specific cohorts, which will be expanded if adequate efficacy is determined. The trial is available at the Odette Cancer Centre and at the Princess Margaret Cancer Centre in Toronto as well as the following Centres throughout Canada: Abbotsford, BC; Winnipeg, MB; CHU de Quebec.

For information, visit the link below.

https://clinicaltrials.gov/ct2/show/study/NCT03797326?term=A+Multicenter%2C+Open-label+Phase+2+Study+of+Lenvatinib+%28E7080%29+Plus+Pembrolizumab&show_locs=Y#locn

2. TRK Fusion Cancer and How to Test for It (Nov.13/22)
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.

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

https://www.bayer.ca/en/media/news/?dt=TmpBPQ==&st=1
3. A Phase II, Open-label, Multicenter, Study of an Immunotherapeutic Treatment for the MSI High CRC Metastatic Population (Nov.13/22)

The purpose of this study is to look at the effectiveness of the vaccine DPX-Survivac in combination with the drugs cyclophosphamide and the immunotherapy Pembrolizumab in patients with solid cancers who are identified to be MSI-High. All patients will receive combination therapy of DPX-Survivac, cyclophosphamide, and pembrolizumab. Patients participating will know which treatment they are receiving. The trial is currently hosted at the Odette Cancer Centre, and a new site is opening at Mt. Sinai Hospital.

4. Phase III Study at the Odette Cancer Centre Comparing Arfolitixorin vs. Leucovorin in Combination with 5FU, Oxaliplatin and Bevacizumab in Patients with Advanced CRC (Nov.12/22)

The purpose of this study is to look at the effectiveness of the drug Arfolitixorin in combination with 5-fluorouracil (5FU), oxaliplatin, and bevacizumab in patients with colorectal cancer (CRC). Patients with advanced/metastatic CRC who meet certain criteria may be able to participate. There will be two groups of patients participating in this study;

- one group will receive Arfolitixorin in combination with 5FU, oxaliplatin, and bevacizumab,
- while the other group will receive the drug Leucovorin in combination with 5FU, oxaliplatin, and bevacizumab (standard of care).

The doctor and study staff will not know which group a patient is in. Patients will be randomized to receive one treatment or the other.

About Arfolitixorin:

Arfolitixorin is Isofol’s proprietary drug candidate being developed to increase the efficacy of standard of care chemotherapy for advanced CRC. The drug candidate is currently being studied in a global Phase 3 clinical trial. As the key active metabolite of the widely used folate-based drugs, arfolitixorin can potentially benefit all patients with advanced CRC, as it does not require complicated metabolic activation to become effective. Treating cancer patients with arfolitixorin – The goals:

- When treating CRC, for example, arfolitixorin is administered in combination with 5-FU to increase cell mortality in circulating cancer cells and in cancerous tumours.
- Arfolitixorin is administered in conjunction with rescue therapy after high-dose treatment with the cytotoxic agent, methotrexate, in order to suppress the cytotoxic effect in surrounding healthy tissue. The treatment is used for certain types of cancer, such as osteosarcoma, a type of bone cancer. This involves administering arfolitixorin separately, 24 hours after the chemotherapy.

5. New Cancer CRISPR Treatment Sees Patients’ Immune System Attack Tumors (Nov.11/22)

According to a report published by the BBC, patients have had their immune system hacked and redesigned to attack their own tumors. The work is centered around T-cells, parts of the immune system that patrol the body and inspect other cells for issues. They do so using proteins, referred to as receptors, to spot cells that have deviated from their natural roles and become cancerous. Cancers are notoriously complicated for T-cells to identify because they consist of a corrupted version of people’s own cells.

The new therapy aims to increase the level of T-cells in patients’ bodies to better allow them to spot the disease. The researchers achieved this by examining patient’s blood for the rare T-cells that already had receptors which could sniff out their cancer. They then turned their attention to other T-cells that could not find the cancer and redesigned them to make them adept at this task. They did this by replacing their original receptors with those from the cancer-seeking T-cells and putting them back into the patients to search for and attack tumors. They essentially created receptors that can hunt cancer. This was made possible through the gene-editing technology CRISPR. CRISPR stands for “Clustered Regularly Interspaced Short Palindromic Repeats” and is a technology that enables scientists to edit the DNA of any genome. By editing DNA, scientists can alter certain characteristics of an organism. However, the treatment still has a long way to go before it can be used on larger populations.

6. First-in-class, orally bioavailable KRAS\textsuperscript{G12V}(ON) tri-complex inhibitors, as single agents and in combinations, drive profound anti-tumor activity in preclinical models of KRAS\textsuperscript{G12V} mutant cancers (Jul.1/22)

Researchers built a pipeline of small molecule inhibitors targeting multiple oncogenic RAS(ON) mutants. RAS proteins are small GTPases that drive cell proliferation (growth and division) and survival when bound to GTP. Mutant RAS proteins exist predominantly in the GTP-bound (RAS(ON)) state, leading to excessive downstream signaling via interaction with effectors such as RAF. Targeting the KRAS\textsuperscript{G12V}(ON) state will be critical for maximal suppression of this oncogenic driver (has the potential to cause tumors/cancer). In cancer cell lines bearing KRAS\textsuperscript{G12V} mutations, KRAS\textsuperscript{G12V}(ON) inhibitors trigger an immediate disruption of RAS-effector interactions, leading to attenuation of RAS pathway signaling, potent (sub-nM EC\textsubscript{50}) growth suppression, and apoptosis (cell death). KRAS\textsuperscript{G12V}(ON) inhibitors produce deep, durable, and dose-dependent suppression of tumor RAS pathway activation following oral administration. In KRAS\textsuperscript{G12V} mutant NSCLC, CRC and pancreatic cancers, oral administration of KRAS\textsuperscript{G12V}(ON) inhibitors is well-tolerated and drives profound and durable tumor regressions, with complete responses in some animals. Moving forward, these inhibitors may lead to an attractive, targeted therapeutic option for the treatment of RAS-addicted cancers with a very high unmet medical need.

https://aacrjournals.org/cancerres/article/81/13_Supplement/1260/667136/Abstract-1260

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**Surgical Therapies**

7. Hepatic Artery Infusion Pump (HAIP) Chemotherapy Program – Sunnybrook Odette Cancer Centre (Nov.1/22)

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

8. Living Donor Liver Transplantation for Unresectable CRC Liver Metastases (Nov.2/22)

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.
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

9. Study Offered at the Odette Cancer Centre to Treat Recurrent Rectal Cancer (Nov/9/22)

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 effect 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

10. Trends in the Incidence of Young-Onset CRC with a Focus on Years Approaching Screening Age (Nov.10/22)

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.


11. Colonoscopies Save Lives: Doctors Push Back Against European Study that Casts Doubt (Oct.13/22)

The findings of a big European study published in the New England Journal of Medicine this week seemed to cast doubt on just how beneficial a colonoscopy is in preventing colorectal cancer (CRC). Research going back more than a decade has shown that colonoscopies can save lives. A 2018 study from Kaiser Permanente, for example, found a 67% reduction in cancer deaths among people who got a screening colonoscopy. In contrast, the findings of the NEJM study point to a mere 18% reduction in CRC among thousands of men and women in Europe who were 'invited' to get a colonoscopy. However, it is important to note that a colonoscopy will only work if a patient gets one. It turns out that more than half of the research participants who were 'invited' to get a colonoscopy never showed up for the procedure, only 42% accepted the invitation.

The American Cancer Society (ACS) has weighed in on the study, highlighting a 31% reduction in risk among participants who were screened. They also say it’s important to consider that participants in the study were screened sometime between 2009 to 2014, so some got their colonoscopy as recently as 8 years ago. "The time from polyps to cancer to mortality is almost always greater than this — so a much longer follow-up is needed," an ACS statement concludes. Over time, the reduction in cancer or deaths could be greater. The ACS continues to recommend CRC screening for adults aged 45 and older, as there’s no reason to change that direction.

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https://www.npr.org/sections/health-shots/2022/10/11/1128531054/colonoscopies-save-lives-doctors-push-back-against-european-study-that-casts-doubt
Image Source: https://www.istockphoto.com/illustrations/colonoscopy

12. Exact Sciences Expands Leadership in CRC Screening with New Data Presented at the American College of Gastroenterology 2022 Annual Meeting (Oct.24/22)

Exact Sciences Corp., a leading provider of cancer screening and diagnostic tests, announced the company will present new data supporting the positive impact of Cologuard as a colorectal cancer (CRC) screening too. Data from Exact Sciences will detail the positive impacts on patients when costs associated with follow-up colonoscopy are eliminated after a positive stool-based test. New data will also provide details on the value of Cologuard in detecting serrated polyps, and the importance of reconsidering the definition of false positive outcomes from stool tests in CRC screening. Data from Exact Sciences at ACG demonstrate the positive impact removing obstacles to CRC screening can have on clinical and economic outcomes associated with this highly preventable form of cancer. These results provide key information to help screen more people for CRC and support the use of Cologuard as an FDA-approved, non-invasive screening option that is included in U.S. Preventive Services Task Force guidelines.


13. Young Adult CRC Clinic Available at Sunnybrook (Nov.5/22)

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), and his team at the Sunnybrook Health Sciences Centre understand the needs of this patient population.

Dr. Ashamalla belongs to a multidisciplinary team of experts in the Young Adult Colorectal Cancer Clinic who will work with young CRC patients, regardless of disease stage, to create an individualized treatment plan to support each patient through their cancer journey. Their 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

14. CCRAN’s Partnership with “Count Me In” (Nov.1/22)

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
15. Patients and Caregivers Needed to Help Shape Early Research for a CRC Therapy (Nov.10/22)

The Project:
Site specific immunomodulators (SSIs) are a new class of therapy, made from dead bacteria. This therapy is designed to help the body’s own defense system (‘immune cells’) fight cancer. SSIs may be a potential new treatment for colorectal cancer and have already been shown to be safe in cancer patients. Our team of scientists and clinicians are planning a clinical trial to determine if SSIs can increase the number of patients who survive colorectal cancer metastatic to the liver. The trial will start this Fall and is being led by Dr. Rebecca Auer (Ottawa) and Dr. Paul Karanicolas (Sunnybrook).

Why do we need your help?
We want patients and family members to help us shape our research, which aims to improve the experience of trial participants. We are currently looking for patients, caregivers, or family members to join our team. As a part of our team, you will:
- Participate in group meetings (online and/or in person) with the research team from May 2022 to March 2024
- Help brainstorm and draft resources and documents for future trial participants
- Provide input on research to evaluate the usefulness of the developed resources

Who can apply?
We are looking for individuals with any of the following:
- A patient, family member, or a caregiver, with lived experience of colorectal cancer, liver metastases, and/or liver surgery
- Interested in helping shape research to assess a new therapy for colorectal cancer

No previous experience with SSIs or research is necessary. An orientation session will provide more information about the research project, and we encourage you to ask any questions you have at any time.

In appreciation for your time, partners will receive compensation for attendance at meetings and activities.

If you are interested in joining our team or would like more information:
Please contact Meredith Conboy, Research Assistant, The Ottawa Hospital Research Institute
Email: mconboy@ohri.ca

16. Under 50 National Colorectal Cancer Information/Support Group Now Available at CCRAN! (Sept.2/22)

ARE YOU AN EARLY AGE ONSET (<50 YEARS) COLORECTAL CANCER PATIENT OR CAREGIVER LOOKING FOR INFORMATION OR SUPPORT?

Meet Hayley Painter R.N. and proud survivor of metastatic colorectal cancer!

Hayley will be assuming the lead on CCRAN’s Monthly National Under 50 Colorectal Cancer Information/Support Group Meetings!

When: Every third Sunday of the month
Time: 7:00 – 9:00 p.m.
Where: Via Zoom
To Register: Hayley.p@ccran.org

Please join Hayley as she will deliver important treatment updates and provide optimal support to each patient in their colorectal cancer journey at these support group meetings. To register for the meeting, please contact Hayley at hayley.p@ccran.org.
17. Can Gut Microbes Impact Chemotherapy? So Far, the Answer is ‘Yes’ (Nov.2/22)

Bacteria in our guts play a significant role in how we digest what we eat, and what we eat includes oral medications we take. But the gut microbiome’s impact on drugs may be different from its impact on food because drugs are often intended to target a specific tissue or organ or process in the body. Researchers wanted to know if the microbiome matters in the metabolism of anti-cancer drugs that are critical for treating colon cancer and other types of cancers. So far the answer is yes. A recently published study looked at how the microbiome effects metabolism of chemotherapy drugs called fluoropyrimidines (FPDs), which are frequently used to treat colon cancer. The researchers suspected that bacteria living in the gut can intercept and inactivate some of the drug before it’s able to get to the tumor. They discovered that multiple types of bacteria in the gut, including E. coli and other common gut bacterial species, produce very similar enzymes, and those bacterial enzymes were breaking down the drug, turning a substance that would be actively killing cancer cells into an inactive metabolite.

Each of us has a very different microbiome. We may all have E. coli in our gut, but we might have different strains of it. And those differences between strains for some bacteria can result in big differences in the genes that are found in their genome. The idea of sequencing the genome of the cancer cells themselves has been incredibly successful. Now, doctors can look at the DNA of the primary tumor, figure out what the mutations are, and tailor their treatment plan to genetic insights about the tumor. Right now, we’re still in the phase of figuring out how and why the microbiome matters for drugs across multiple disease areas, including cancer.

18. Certain CRC Survivors Should Be Closely Monitored for Lung Metastases (Nov.1/22)

Colorectal cancer (CRC) commonly spreads to lungs, but no evidence-based standard exists for post-treatment chest imaging to monitor for lung metastases. Undergoing CT scans too frequently can be costly and come with its own side effects, while too sparse scans — or worse, no scans at all — can potentially allow lung metastases to grow, thereby potentially worsening prognosis.

A recent study sought to remedy this by identifying groups of patients with surgically removed CRC that are at high risk of developing lung metastases. It combined two large databases and found a group of patients who developed spots on their CT scans of their lungs within three months of having had their CRC resected. Study findings showed that patients who were more likely to have pulmonary (lung) metastases were those who needed chemotherapy or radiotherapy before or after surgery, meaning that the cancer was more advanced, as well as those with a KRAS mutation or those who have a higher percentage of cancerous lymph nodes removed during colorectal surgery. Patients who develop these spots really early are the patients who should receive imaging early, since they also have those risk factors and characteristics that might (indicate) that they are at a higher risk of having pulmonary metastases. Knowing who should undergo chest scans more frequently is important because catching lung metastases early can be key in improving survival outcome. Looking forward, the research team plans to build a machine learning algorithm that could be helpful in determining which patients should undergo more frequent screening based on their individual risk factors.

19. Researchers Identify Cells Responsible for Colon Cancer Relapse (Nov.10/22)

Scientists at the Institute for Research in Biomedicine (IRB), in Barcelona have identified residual tumor cells responsible for colon cancer relapse and reveal the underlying mechanism behind their ability to metastasize. Researchers at IRB have now developed a new experimental animal model aiming to recreate the process of colon cancer relapse in patients. Using their model, and a parallel technique, the scientists were able to isolate tiny amounts of residual colon cancer cells that had traveled and hidden in other organs such as the lung and liver making themselves invisible to current clinical diagnostic tools.

The scientists were also able to characterize a population of cells driving colon cancer as High Relapse Cells (HRCs). These cells reportedly do not contribute to the growth of the primary tumor due to little proliferative activity. However, clusters of these cells are able to detach from the tumor and migrate via the bloodstream to other organs such as the liver, where they remain hidden after surgery. Using samples from patients with colon cancer, the researchers verified the presence of HRCs in patients with the greatest risk of relapse. In an attempt to eliminate HRCs, the researchers removed the cells in mice models using genetic techniques, achieving the prevention of the formation of metastases. Mice with colon cancer remained disease-free after primary tumor removal and the cancer did not
The team also demonstrated that treatment with immunotherapy before surgery can remove HRCs that have traveled to other organs, eradicating residual cancer.

This discovery reveals how the group of tumor cells responsible for relapse behaves and also the genes that define them. In addition, it represents a proof of concept that paves the way for the development of new therapies, specifically aimed at eliminating residual disease, as well as new diagnostic tools to identify those patients at the greatest risk of relapse.


**Nutrition / Healthy Lifestyle**

**20. Exercise for Cancer to Enhance Living Well (EXCEL) Study (Nov.11/22)**

Exercise for Cancer to Enhance Living Well (EXCEL) is a 5-year Canada-wide project, which offers free, 12-week exercise classes designed specifically for individuals undergoing or recovering from cancer treatment. Classes are online through a secure video-conferencing platform, and where possible, in-person (post-COVID). 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


The Mediterranean diet consistently has been linked to a lower risk of cancer, cardiovascular disease and mortality. A traditional Mediterranean diet is rich in fish, olive oil, vegetables, whole grains, nuts, and legumes and lower in red meat and dairy with modest alcohol consumption. Studies suggest that adherence to this diet can both reduce an individual’s risk of developing cancer and delay the progression of cancer in those with a cancer diagnosis.

The Mediterranean diet may also improve response to immunotherapy. Immune Checkpoint Inhibitors (ICIs) drugs are a standard treatment for melanoma and other cancers. They work by blocking immune system checkpoints, which then force the body’s own T-cells to attack their cancer. Participants in a multi-centre study had their dietary intake recorded and were treated with ICI drugs. The researchers found and improved overall response to treatment and...
delayed cancer progression at 12 months in individuals on the Mediterranean diet. The study also found that eating whole grains and legumes reduced the likelihood of developing drug induced immune-related side effects, such as colitis. In contrast, red and processed meat was associated with a higher probability of immune-related side effects. The study underlines the importance of dietary assessment in cancer patients starting ICI treatment and supports a role for dietary strategies to improve patient outcomes and survival.


Image Source: https://nutrition.org/living/mediterranean-lifestyle/

22. Metabolite From Pomegranates May Help Fight CRC (Nov.2/22)

Recent studies show that concentrated forms of urolithin A (UA), a natural product of pomegranate digestion, induce mitophagy — the breakdown of old or redundant “cellular powerhouses” known as mitochondria. In turn, this encourages the creation of new mitochondria and slows the progression of age-related diseases. Other studies have found that UA has immunomodulatory effects in cells that reduce inflammation alongside cells that enhance immune function. Recently, researchers explored the effects of UA on colorectal cancer (CRC) in mice. They found that UA induced “strongly protective” anti-tumor T cell immunity in mice both when consumed in food and when used alongside CAR-T cell therapy, a treatment in which T cells — a type of immune cell — are altered to attack cancer cells. These findings are particularly exciting because the focus is not on the tumor cell but on the immune system, the natural defense against cancer. This is where reliable therapeutic approaches are still lacking in the reality of CRC patients. By possibly improving the combination therapy with existing immunotherapies, the study opens up meaningful possibilities for further application in the clinic.


23. Lower Risk of CRC Associated with Dietary Flavanone and Anthocyanidin Intake (Oct.31/22)

Flavonoids, found in plant-based foods, are a group of polyphenols divided into six sub-classes — isoflavones, flavanols, flavones, anthocyanidins, flavanones, and flavonols. Flavonoids act in pathways involving cellular transformation, proliferation, and apoptosis. Several epidemiologic studies have reported an inverse relationship between the risk of colorectal cancer (CRC) and dietary flavonoids. In the present study, researchers analyzed the association of flavonoid intake with CRC risk and circulating bacterial DNA. Results suggested that total flavonoid intake was not related to the risk of CRC. Nevertheless, there was a significant inverse relationship with the risk of CRC for the intake of flavanones and anthocyanidins. This means increased dietary flavanones and anthocyanidins decrease the risk of CRC.


24. Frequently Asked Questions for COVID-19

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

A: Coronavirus are a large family of viruses that can cause illnesses in humans and animals. Coronavirus 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-coronaviruses
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-a-detail/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