COLORECTAL CANCER TREATMENT & CLINICAL RESEARCH UPDATES
Month Ending April 14th, 2022

The following colorectal cancer treatment and research updates extend from March 17th, 2022, to April 14th, 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 (Sept. 10/21)

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 (Feb. 16/21)
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 (Sept.16/21)

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 (Sept.16/21)

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.

https://sunnybrook.ca/trials/item/?i=293&page=49335 and https://clinicaltrials.gov/ct2/show/NCT03750786
https://isofolmedical.com/arfolitixorin/

5. Novel Regimens Demonstrate Efficacy in CRC (Mar.12/22)

Below is a list of updates, provided by Healio, related to colorectal cancer (CRC) drug treatment. To learn more about each regimen, visit the link below for individual articles of each update.

1. A three-drug combination demonstrated activity for patients with microsatellite-stable, BRAF V600E-positive metastatic colorectal cancer (mCRC). The regimen — which consisted of encorafenib, cetuximab and nivolumab — also appeared well-tolerated.
2. The combination of cobozartinib and durvalumab appeared safe and demonstrated efficacy among a small cohort of patients with advanced mismatch repair-proficient/microsatellite-stable CRC.
3. The FDA approved cetuximab in combination with encorafenib for treatment of certain patients with CRC. The indication applies to use of the agents by adults with BRAF V600E mutation-positive metastatic disease detected by an FDA-approved test who received prior therapy. (Please note: this therapy is also Health Canada approved and has received a positive funding recommendation by the HTA expert review committees in Canada.)
4. First-line nivolumab plus standard of care chemotherapy failed to prolong 1-year PFS among patients with mCRC.
5. Sotorasib demonstrated antitumor activity among patients with heavily pretreated advanced KRAS G12C-mutated CRC.


6. HIV Drug Shows Promise Against Metastatic Cancer (Apr.4/22)

Lamivudine, a drug widely used in HIV therapy, has shown to stop disease progression in 25% of patients with fourth-line metastatic colorectal cancer (mCRC). The trial included 32 patients with advanced metastatic colon cancer whose disease progressed despite four lines of previous cancer treatments. The first nine patients received the standard HIV-approved dose of lamivudine. “After giving them only this one drug — nothing else — we saw signs of disease
stability,” says co-senior author David T. Ting of the Mass General Cancer Center. After adjusting the dosing four-fold, another 23 patients received lamivudine therapy where it was highly tolerated. The research team observed that 9 of the 32 patients, or 28%, had disease stability or mixed response at the end of the trial. “This provides evidence that an HIV drug can be repurposed as an anti-cancer therapy in metastatic cancer patients,” says Ting. While the research team did not see tumor shrinkage, the results are encouraging. Disease stability in a cancer patient population this advanced, with just one single agent, is highly unusual and researchers are hoping to initiate a larger Phase III study soon with a three-drug reverse transcriptase inhibitor combination.


**SURGICAL THERAPIES**

7. Hepatic Artery Infusion Pump (HAIP) Chemotherapy Program – Sunnybrook Odette Cancer Centre (Oct.15/21)

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 (Oct.1/21)

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

RADIATION THERAPIES/INTERVENTIONAL RADIOLOGY

9. Study Offered at the Odette Cancer Centre to Treat Recurrent Rectal Cancer (Oct.9/21)

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

SCREENING

10. Trends in the Incidence of Young-Onset CRC with a Focus on Years Approaching Screening Age (Apr.10/21)

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?guestAccessKey=af490637-e53e-44e0-81b9-d1f2ddf7b60c9

11. Steps for Preventing CRC in Young Adults (Mar.4/22)

Over the last decade, colorectal cancer (CRC) has been occurring far more often in those under 50. With regular screenings, however, the cancer is both preventable and highly survivable. Symptoms of CRC include changes in bowel habits, abdominal discomfort, unexplained weight loss, rectal bleeding, and fatigue. However, these symptoms are similar to those of other conditions, and sometimes patients initially overlook them. Often, by the time they go in for evaluation, the cancer has advanced. Because of the increase in incidence in young adults, in 2018, the American Cancer Society changed its guidelines to call for screening patients at age 45. In 2021, the United States Preventive Services Task Force also now suggest that adults have colonoscopies at age 45. Additionally, for patients with a close relative who’s had colon cancer, the screening should start 10 years before the cancer was diagnosed in the family member, or at age 45, whichever is earliest.

https://m.ufhealth.org/blog/steps-preventing-colorectal-cancer-young-adults
12. Young Adult CRC Clinic Available at Sunnybrook (Oct.12/21)

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

13. CCRAN’s Partnership with “Count Me In” (Nov.1/21)

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 180 people from across the US & CA have said "Count Me In" to join the Colorectal Cancer Project. By sharing information via surveys and access to medical records & samples, patients can have an impact on the future of colorectal cancer. Learn more at JoinCountMeIn.org/Colorectal


14. Important Updates in CRC (Mar.28/22)

In conjunction with Colorectal Cancer Awareness Month, HemOnc Today and Healio compiled the following important updates in colorectal cancer (CRC) diagnosis and treatment. To read more on each update, visit the link below for their individual articles.
• The burden of CRC has shifted considerably toward younger individuals over the past few decades, according to American Cancer Society's Colorectal Cancer Statistics 2020 report.
• Individuals aged 25 years and younger with colon cancer appeared to be at higher risk for relapse and death than older adults.
• *Fusobacterium nucleatum*, an oral bacterium, may be partially responsible for the sharp increase in CRC incidence among individuals aged younger than 45 years.
• Young adults with CRC who resided in areas with the lowest incomes and high school graduation rates had a 24% increased risk for death than their counterparts in areas with the highest incomes and graduation rates.
• Maintenance chemotherapy following initial treatment appeared to be more beneficial for patients with mCRC than continuing a full induction regimen until disease progression.
• The Affordable Care Act’s dependent coverage expansion provision has resulted in earlier-stage diagnosis and more timely receipt of adjuvant chemotherapy among young patients with CRC.
• Omega-3 supplementation of 1 g per day did not appear to reduce the risk for CRC precursors among the average-risk U.S. population. However, daily supplementation might benefit African Americans and those with low plasma levels of omega-3, according to researchers.


Ulcerative colitis (UC) is an inflammatory bowel disease that affects the large intestine, also known as the colon. Symptoms of UC can include bloody stools, pain, and persistent diarrhea. Research suggests that those with UC are at an increased risk of colorectal cancer (CRC). The exact risk of CRC for people with UC varies depending on these three factors:

1. **Duration of the disease**: It is believed that the risk of developing CRC starts to increase 8-10 years following the onset of UC symptoms. One meta-analysis of 116 studies found that 10 years after onset, the risk is 1.6%; at 20 years, it increases to 8.3%; and 30 years after onset, it increases to 18.4%.
2. **Severity of inflammation**: The more inflammation that is in your colon or rectum, the more damage there is to cells in the colon lining. This causes more cell turnover, which allows more opportunity for mutations (changes) in the DNA of these cells that can lead to cancer.
3. **How much of the colon is affected**: Those with UC of the entire colon are at the highest risk. If UC only affects the left side of the colon, the risk of developing cancer is lower. And those with UC only in the rectum don’t have a heightened risk of CRC.

Regular screening for CRC is important for people living with UC because it increases the likelihood of catching cancer in its earliest, most treatable stages. According to the Crohn’s and Colitis Foundation, those who have had UC symptoms for a period of eight or more years should have a colonoscopy every one to two years. Additionally, those with UC are encouraged to adopt a health-promoting lifestyle that includes a low-fat diet, regular exercise, and keeping up with your medication which can help reduce your risk.

Image Source: https://www.thenutritioncoach.com/chrons-colitis/


The gut microbiome, referring to the collective bacteria inside the digestive system, is of particular and urgent importance to oncology scientists as a new study being conducted aims to help scientists better understand the gut microbiome’s effect on the treatment, diagnosis, and prevention of colorectal cancer (CRC). Researchers on the Argonaut study are working to discover whether the people most at risk for developing CRC have too many or too few of a certain type of microbe or if certain processes in the microbiome, like the production of metabolites or toxins, could lead to a higher risk of developing the disease. The answers could potentially lead to the development of innovative new therapies.

"Could Patterns Early on Indicate That Somebody Is at Risk?"
Everyone’s microbiome is unique. Some patients at a higher risk for CRC may have certain microbes that produce toxins that can lead to DNA damage and specific mutations within a colorectal cell. However, scientists are only beginning to unravel how specific microbes cause these mutations. The Argonaut study may shed some light on this process.
17. Artificial Sweeteners Not So Sweet When It Comes to Cancer Risk (Mar.24/22)

Artificial sweeteners in place of real sugar may not be such a healthy alternative, a French cohort study suggested. Over a median follow-up of 7.8 years, adults deemed "high consumers" of artificial sweeteners faced a higher risk of developing cancer compared with non-consumers. The cut-offs between "high consumers" and "low consumers" were sex-specific: 17.44 mg/day in men and 19.00 mg/day in women. When looking at specific types of artificial sweeteners, aspartame and acesulfame potassium were the two that seemed to drive this overall cancer risk. Artificial sweeteners in general were linked with a 13% increased risk for developing obesity-related cancers, including colorectal, stomach, liver, mouth, pharynx, larynx, esophageal, breast (with opposite associations pre- and post-menopause), ovarian, endometrial, and prostate cancers. Aspartame alone was linked with a 15% higher risk for obesity-related cancers, and a 22% higher risk for developing breast cancer. However, sucralose consumption at any level wasn't linked to cancer risk, including for site-specific cancers, the researchers noted. The implications of these findings are far reaching, since artificial sweeteners are prevalent in foods and beverages consumed by millions daily, they pointed out. The findings need to be replicated in other larger-scale studies.

18. These 6 Diet Changes Can Help Reduce Your CRC Risk (Mar.22/22)

While some factors that increase your risk of developing colorectal cancer (CRC) are completely out of your control, like your family history, other risk factors are not. Specifically, certain lifestyle factors can increase your risk of developing this potentially devastating cancer diagnosis, including not exercising, being obese, smoking tobacco.

Here are six dietary tips that may help you keep a CRC diagnosis at bay.

1. Limit Processed Red Meat — Data shows the risk increase of CRC is 12% for every 100 grams per day increase of red and processed meat intake, making this food one to limit or avoid.
2. Eat More Seafood — The Dietary Guidelines for Americans, 2020-2025 recommends at least 8 ounces of seafood per week (based on a 2,000-calorie diet) for most adults.
3. Focus on Fiber — Fiber helps keep bowel movements regular, indirectly playing a huge role in reducing CRC risk. By moving, cancer causing agents can become diluted and fecal decreasing transit time can become reduced, thus limiting the contact between cancer-causing agents and the lining of the colon and rectum. Eating a wide variety of fruits, vegetables, beans, seeds, nuts, whole grains, and legumes can help keep your body fueled with fiber.
4. Drink Milk — Some data shows that including a little over 2 cups reduces men's colon cancer risk by 26%.
5. Limit Alcohol — Moderate amounts of alcohol (at most two servings) may increase CRC risk. Some data show a 7% increase in CRC risk for each 10 gram/day increase of alcohol intake.
6. Choose Whole Grains — Data shows a CRC risk reduction of 17% for each 90 gram/day increase of whole grains.


Research has suggested that people who follow a vegetarian diet have a lower cancer risk. People who follow a vegetarian diet have lower body mass indexes (BMIs) and different hormonal profiles than people who eat meat. To help determine whether a relationship between avoiding meat and cancer risk truly exists, researchers set out to look for a link between meat consumption and risks of different types of cancer.

The researchers looked at data on 472,377 cancer-free people and categorized them into categories:

- Regular meat-eaters ate processed meat, beef, lamb or mutton, pork, chicken, turkey, or other poultry more than five times a week
- Low meat-eaters ate meat, at most, five times per week
- Fish eaters ate fish but did not eat any meat (e.g., beef, lamb, pork, or poultry)
Vegetarians ate no meat

The researchers looked at how many developed cancer, including colorectal cancer (CRC), postmenopausal breast cancer, and prostate cancer. When they followed up with participants over 10 years, the researchers found that:

- Low meat-eater, fish-eater, and vegetarians had a lower risk of cancer risk compared to regular meat-eaters
- Low meat-eaters had a lower risk of CRC than regular meat-eaters
- Vegetarian postmenopausal women had a lower risk of breast cancer than women who were fish and meat-eaters
- Vegetarian and fish-eating men had a lower risk of prostate cancer than men who were meat-eaters

The results of the study did provide some possible insights into how our diet choices may impact our cancer risk. However, experts say the results should be taken with a grain of salt. It’s important to know that the study was observational, and that correlation does not equal causation. That means that just because there is a link between two things—in this case, meat consumption and cancer risk—it does not mean that one caused the other. Thus, meat doesn’t need to be completely excluded from the diet to reduce cancer risk. To reduce your meat intake without having to cut it from your diet altogether, you can consume fish in place of meat once or twice a week. You can also eat more beans, lentils, nuts, or seeds instead of meat. If you’re a meat-eater, researchers suggests that you try to integrate a few meatless days weekly.

https://www.verywellhealth.com/can-avoiding-meat-can-reduce-cancer-risk-3222005

COVID-19 UPDATES

20. COVID-19 Updates (Mar.18/22)

The FDA issued Class I recalls -- the most serious type -- for SD Biosensor’s Standard Q COVID-19 Ag Home Test and Celltrion’s DiaTrust COVID-19 Ag Rapid Test.

In other news, Moderna asked the FDA to okay a fourth shot of its COVID-19 vaccine as a booster dose for all adults, a plan that’s broader than Pfizer’s recent request for a booster for all seniors. In a press release, the company said its request for approval for all adults was made “to provide flexibility” to the Centers for Disease Control and Prevention and medical providers to determine the “appropriate use” of a second booster dose of the mRNA vaccine, “including for those at higher risk of COVID-19 due to age or comorbidities.”


21. One-Dose J&J COVID Vaccine Quietly Effective Throughout Delta Surge (Mar.17/22)

Vaccine effectiveness with one dose of the Johnson & Johnson COVID-19 vaccine remained remarkably stable for preventing symptomatic disease and hospitalizations, even during times when the Delta variant was predominant in the U.S., researchers found. Researchers examined U.S. health insurance claims data from March 2020 through August 2021. 422, 034 adults ages 18 and older who received a single dose of Johnson & Johnson vaccine from March 1, 2020 to Aug. 17, 2021 were matched with 1,645,397 unvaccinated controls. Throughout the study, vaccine effectiveness against recorded COVID symptomatic disease was 76% and 81% against COVID-related hospitalization. Not surprisingly, effectiveness was higher among adults younger than 65 versus those 65 and up (78% vs 72%, respectively), and among non-immunocompromised individuals versus those who were immunocompromised (77% vs 64%). Notably, sustained and stable vaccine effectiveness, to a maximum of 183 days after vaccination, was observed in both the national cohort and in states with a high incidence of Delta. The authors concluded that these
results suggest that the vaccine effectiveness observed in the trial translate into clinical practice, last for at least 6 months after vaccination, and remain effective amid high Delta variant incidence.


22. Here’s Why COVID-19 Impacts Your Ability to Smell (Mar.25/22)

One distinctive symptom of COVID-19 remains the loss of sense of smell and taste that can affect people for weeks or months after developing the disease. The decreased or altered sense of smell, called olfactory dysfunction, was originally thought to be due to damage of the olfactory nerves. But new research finds that loss of smell due to COVID-19 may also be because of swelling and blockage of the nasal passages. Researchers combed through medical reports that detailed changes in olfactory structures through imaging tests of patients with COVID-19. They found a prevalence of an olfactory cleft abnormality. The olfactory cleft is the channel through which airborne molecules reach the olfactory neurons, which connect to the brain in order to determine smells. In patients with COVID-19 and olfactory dysfunction, the cleft abnormality was 16x higher. This means that a contributing factor of the loss of smell and taste is due to the tissues instead of nerves. The good news is that cells turn over and heal much more easily than nerve damage.

Reccovery times vary widely from one to three weeks to months or years. While there are limited treatment options, people have been using smell training as a treatment option with mixed outcomes. Smell training involves smelling items like specific scents of items like oranges or coffee grounds. However, it is important to note that the findings may not fully account for people living with the extended loss of sense of smell or taste. More research will have to be conducted.

https://www.healthline.com/health-news/heres-why-covid-19-impacts-your-ability-to-smell?slot_pos=article_1&utm_source=Saithru%20@email&utm_medium=email&utm_campaign=daily&utm_content=2022-03-28&aid=15071678&uuid=0f70f7aada60b2c9bf3350000b5e3a769f1ab89292aco3a379e264fc111d37cf3b#Can-loss-of-sense-of-smell-and-taste-be-returned


Researchers at Cornell University have been testing a nasal spray that blocks COVID-19 infection. The nasal spray releases a molecule that may help stop the virus from attaching to cells in the nose and respiratory tract. The researchers found that a molecule, N-0385, can both protect against infection in healthy subjects and ease symptoms in patients if used within 12 hours of exposure to COVID-19. The study is still in its early stages and is currently only being tested in mice. But experts are hopeful that this type of study may help lead to better protection against the virus.

“The problem with the [vaccine] shots is that they are not affecting transmission. What they are doing is amazing because they prevent severe disease, which is the whole point. But it would be even better if we could prevent transmission,” said Dr. Jennifer Lighter, pediatric infectious disease specialist at NYU Langone. “With the nasal spray, what you can imagine is that it starts working quicker in a localized area. There is hope that your mucosal immunity would rev up quicker and would be able to kill the virus before it became a breakthrough infection.”

https://www.healthline.com/health-news/in-early-testing-nasal-spray-shows-signs-it-can-fight-covid-19?slot_pos=article_2&utm_source=Saithru%20@email&utm_medium=email&utm_campaign=daily&utm_content=2022-04-11&aid=15071678&uuid=0f70f7aada60b2c9bf3350000b5e3a769f1ab89292aco3a379e264fc111d37cf3b#How-does-the-COVID-19-nasal-spray-work


The Centers for Disease Control and Prevention (CDC) currently recommends COVID-19 vaccine boosters for everyone ages 12 years and older. In addition, the Food and Drug Administration says a second booster dose of the Pfizer-BioNTech or the Moderna COVID-19 vaccine can be given to people 50 years of age and older at least 4 months after getting their first booster dose. The agency also recommends that some immunocompromised people 12 years and older get a second booster 4 months after their first one. The National Institutes of Health says mixing vaccines may enhance immune response. They add that mixing vaccines can also increase flexibility when doses of one particular vaccine are not readily available.

Many experts are questioning the need for second boosters. Dr. Michael Daignault points to a 2022 study based on data from Israel, which started giving fourth doses to people 60 to 100 years old in January. It showed that those with
a second booster had a lower chance of severe illness for up to 6 weeks afterward, but only minimal added protection against infection, which quickly waned. While the data compared two groups — those who only have had a first booster to those who got a second booster — the study authors didn’t control for demographics, comorbid conditions, or behaviours. The bottom line is that a second booster can be given to older high-risk adults (perhaps 80 years and older), but there’s no clear evidence that vaccine protection against severe disease is waning in adults under the age of 80. It is best to talk with your healthcare professional about a second booster because they have your full medical history and understand your overall risk. 

https://www.healthline.com/health-news/4th-covid-19-shot-should-you-get-one-it-to-ask-to-mix-and-match-vaccines_article?utm_source=Saltwire&utm_medium=Email&utm_campaign=daily&utm_content=2022-04-11&apid=35071678&rvid=05f7ada06c0c8f350009b5e3b7e953bbf9292ac3a379e264fc1114d7c7fb4#What-to-know-if-you-are-over-50-years-old

25. What to Know About the COVID-19 XE Variant (Apr.7/22)

In late March, the U.K. Health Security Agency (UKHSA) announced a new COVID-19 variant called XE. This new, more infectious variant is recombinant, meaning it’s a mix of two strains. In this case, highly infectious Omicron BA.1 has combined with the more recent BA.2 variant. The World Health Organization is citing estimates that show the XE is 10% more transmissible than the BA.2. However, experts say that increased infectiousness doesn’t mean it’s more dangerous and that current treatments will likely remain effective. 

https://www.healthline.com/health-news/what-to-know-about-the-covid-19-xe-variant?slot_pos=article_5&utm_source=Sailthru%20Email&utm_medium=Email&utm_campaign=daily&utm_content=2022-04-11&apid=35071678&rvid=f0f57ada60cbf4f350009b5e3b7e953bbf9292ac3a379e264fc1114d7c7fb4#More-infectious-doesnt-mean-more-dangerous


The following COVID-19 guidelines are specific to Ontario. To view guidelines for the other provinces, visit the link below.

https://mcusercontent.com/cd2e2c87bb7cfd6ca8070a603/files/8e47c3e6-f659-2e2b-5652-8f124d041520/National_COVID_19_Guidelines_Tracker_APR132022.pdf?mc_cid=f3b80fff63&mc_eid=5c784ad19e

27. 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. 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 mouth, nose, 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](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-a-detail/q-acoronaviruses](https://www.who.int/news-room/q-a-detail/q-acoronaviruses)

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.

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](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
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 @NSHealthAuthority, Twitter @NSHealth, 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 @santeqc
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