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December COVID-19 Report

UK to refine allergy warning on Pfizer vaccine due to 2 adverse reactions – December 9, 2020

https://www.ctvnews.ca/world/u-k-to-refine-allergy-warning-on-pfizer-vaccine-sparked-by-two-adverse-reactions-1.5223107
https://www.usatoday.com/story/news/health/2020/12/09/covid-pfizer-vaccine-allergic-reaction-uk/6505867002/

- 2 British people with severe allergies are said to have had allergic reactions to Pfizer/BioTech's COVID-10 vaccine
- In response, British regulators advised those with severe allergies to avoid the vaccine
- Allergic reactions were not a significant problem in the U.S trial in which more than 20,000 people have received both doses of the vaccine, but the U.S trials kept out subjects who have had severe allergic reactions
- In the U.S trial, there were more allergic reactions in the group that received the vaccine than among placebo recipients, but both represented a fraction of 1% of trial participants
    - 0.63% of people in the vaccine group and 0.51% of people in the placebo group reported possible allergic reactions in trials
- With the advise of medical experts, the recommendation is now to avoid the vaccine if you have had adverse reactions to vaccines in the past
    - Food allergies do not put you more at risk
- It is not being speculated that the allergic reactions may have been caused by a component of Pfizer's vaccine called polyethylene glycol or PEG, which helps stabilize the shot and is not in otjer types of vaccines

Canada monitoring Pfizer vaccine after U.K. allergic reactions – December 9, 2020

https://globalnews.ca/news/7511302/canada-monitoring-pfizer-vaccine-allergic-reactions/

- Canadian officials announced that they will continue to monitor for any additional side effects from Pfizer and BioNTech's coronavirus vaccine but have given the green light for the vaccine to be administered
- A vaccine will always have potentials risks and it is not uncommon for a vaccine to result in side effects
    - At the time, Canadian experts have deemed there is no serious reason for alarm
- According to Health Canada's current guidelines, people who have had previous allergic reactions to any of the listed ingredients in the Pfizer vaccine should not get the vaccine

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Known side effects of the COVID-19 vaccine - December 8, 2020
https://www.cnbc.com/2020/12/08/pfizer-moderna-covid-vaccine-side-effects-trials.html

- The most common reported side effects include pain at the injection site, tiredness, headache, muscle pains, chills, joint pain, and fever which typically lasted several days
- The FDA said that more people experienced these side effects after the 2nd dose

Reassuring data for Pfizer's COVID-19 Vaccine – December 10, 2020
https://www.mcgill.ca/oss/article/covid-19-critical-thinking-health/reassuring-data-pfizers-covid-19-vaccine

- Pfizer's COVID-19 vaccine seems to be very effective at preventing symptomatic cases of the disease
- It also looks safe, although minor side effects are common
- Pfizer's vaccine ships in multi-dose vials that are kept between -60 and -80 degrees Celsius
    - They have to be thawed and diluted with a sterile saline solution, which yields 5 doses
    - This vaccine is injected into the should muscle
- At the heart of the vaccine is a tiny stretch of fragile RNA that is a set of instructions for the cells that receive them to manufacture the coronavirus' infamous spike protein
    - This is protected by a bubble of fact about the same size as the coronavirus
    - The vaccine also contains salts that act to keep the pH of the solution close to our own and table sugar that prevents these fat bubbles from sticking to each other while frozen
    - The vaccine has no preservatives

Mutated form of COVID-19 has been found in Wales, Scotland, Denmark, and Australia – December 16, 2020

- The new strain of coronavirus which first emerged in South East England has now spread to Scotland and Wales
-

FDA advisers back authorization of Moderna's COVID vaccine – December 17, 2020
https://www.bnnbloomberg.ca/fda-pfizer-revising-covid-vaccine-guidelines-on-side-effects-1.1538018

- Moderna Inc's COVID-19 vaccine won backing from FDA advisers
    - They voted 20 to 0, with one abstention, on Thursday that the benefits of the vaccine outweigh any risk
- The FDA could authorize the shot within the next day → The FDA approved the emergency use of Moderna on Friday

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- With the Pfizer vaccine, guidelines from the Centers for Disease Control and Prevention outline that patients must be monitored and that facilities must ensure that they have medication on hand to treat rare, but serious, allergic reactions
    - 2 people in Alaska who received the Pfizer vaccine also suffered reactions
- Moderna is considering giving the vaccine to anyone in its trial that got a placebo, and hopes to start administering the vaccine to those volunteers within 1 to 2 weeks of emergency authorization
- Reducing the size of the placebo group may make it more difficult to detect side effects and raise trust issues
- Pfizer and Moderna will have to file for full FDA approval once they have assessed clinical trial participants for longer than the 2 months of follow-up they compiled for emergency authorization
    - Pfizer expects to file for full approval in April

Russia trials COVID-19 vaccine for domestic animals, including mink – December 18, 2020
https://www.thechronicleherald.ca/news/world/russia-trials-covid-19-vaccine-for-domestic-animals-including-mink-530784/

- Russia is close to completing clinical trials for a COVID-19 vaccine for domestic animals and mink
- The clinical trials will end in January and the regulatory approval process is expected to begin in February
- The Federal Centre for Animal Health began developing the vaccine in the spring after the authorities established the virus could be passed from humans onto some domestic animals
- This vaccine is aimed at rabbits, mink, cats, and some other animals

2nd COVID-19 Vaccine authorized in U.S. is shipped out – December 20, 2020
https://www.cp24.com/world/2nd-covid-19-vaccine-authorized-in-u-s-is-shipped-out-1.5239311

- Initial shipments of the 2nd COVID-19 vaccine authorized in the U.S. left a distribution center on Sunday
    - The shots are expected to be given starting Monday
- The Pfizer and Moderna shots so far and that are going out over the next few weeks are nearly all going to health care workers and residents of long-term care homes
- There won't be enough shots for the general population until spring

New novel coronavirus variant in the U.K. – December 21, 2020
https://www.ctvnews.ca/health/coronavirus/what-we-know-about-the-u-k-s-new-novel-coronavirus-variant-1.5239317

- Lockdowns have been initiated in the U.K. after information was revealed about a new variant of the virus that causes COVID-19

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- British Health Secretary said that the new variant is now "out of control" but not more dangerous
    - The new variant is more than 70% more transmissible, but there is no evidence suggesting it is more lethal or causes more severe illness
- On Sunday, the World Health Organization cautioned against major alarm, saying the fact that researchers detected the new variant means new tools to track the virus are working
    - Official further explained that coronavirus mutations had so far been much slower than with influenza
    - Also, when compared to other diseases, the U.K. variant is less transmissible
- Chief U.K. science advisor Patrick Vallance explained that the variant had first been isolated on September 20, and went on to account for approximately 26% of cases by mid-November
    - However, the number of cases skyrocketed in December
    - In London, over 60% of all cases were the new variant
- Although data is still fairly scant, this new virus variant involves mutations in the sequence that encodes its "spike" protein
- There is no current evidence to suggest that the new strain affects vaccines efficacy although urgent work is underway to confirm this
- In South Africa, there is another variant called as 501.V2, a lineage separate from the U.K. variant, that also has a mutation in the aforementioned "spike" protein

U.K. coronavirus variant may be more able to infect children – December 21, 2020
https://www.reuters.com/article/uk-health-coronavirus-variant-children/uk-coronavirus-variant-may-be-more-able-to-infect-children-scientists-idUKKBN28V2EV

- There is a possibility that the new strain seen in the U.K. has a higher propensity to infect children
    - No causality has been established but the data suggests that this is the case
    - More data will need to be gathered to see how it behaves going forward
- Because there is a long gap between the first observed cases with this variant in late September and recent surgent in cases, it is more likely to have evolved in the U.K
- There are very few examples of this variant in other countries at the moment

Tracking the spread of coronavirus mutations – December,

- Nextstrain.org is an open-source project, that allows labs around the world to contribute genetic sequences of viruses collected from patients
- Nextstrain then uses this data to paint the evolution of epidemics through global maps and phylogenetic charts
- Data from Nextstrain suggests cases in Denmark and Australia have come from the UK
    - The Netherlands has also reported cases
- The D614G mutation emerged in Europe in February and became the globally dominant form of the virus

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- Another called A222V spread across Europe and was linked to people's summer holidays in Spain
- The variant likely emerged in a patient with a weakened immune system that was unable to beat the virus

California has a new COVID-19 Exposure Notification app -December 10, 2020
https://www.eff.org/deeplinks/2020/12/ca-notify-app-useful-arrow-fight-against-covid-19

- CA notify is built on Google and Apple's Exposure Notification API
- Google and Apple's API is already used in 20 other U.S. states and countries including Germany, the U.K., and Canada
- These apps use mobile phones' Bluetooth functionality to determine if a person has come into contact with someone who recently tested positive for the virus
    - In iOs, there is no app to download – the "Exposure Notification" feature can be turned on via the settings
- If an app user tests positive for COVID, the app will notify others with the app who have come into contact with them, without giving information about the individual who tested positive
- Google and Apple's system does not track user's location, and it uses a "decentralized" approach to keep all the user's identifiers on their device
- The apps are also designed to keep your identifiers on your device
    - If a user tests positive, they can choose to enter the diagnosis code provided by their testing provider and upload their identifiers to a publicly accessible registry
    - These identifiers are random and short-lived, and thus harder to correlate to a specific person
- Whether the benefits outweigh the dangers is user-dependent and the relative costs and benefits of the proximity apps themselves remain unknown
- The benefits of this technology are unevenly distributed as it misses groups that do not have a mobile phone and are more at risk of COVID-19 and in need of resources- for example, elderly people, those living without housing, and those living in rural communities
- Phones can also be turned off, left at home, run out of battery, or set to airplane mode so it will miss millions of contacts each day
- A study of early deployments of the technology in Europe found that an app detected about 50% of true exposures and also incorrectly triggered exposure notifications for about 50% of nearby devices
- However pilot studies have suggested that even a relatively small number of people using a relatively inaccurate app can help flatten the curve

People ate finally downloading COVID-19 exposure notification apps – December 14, 2020
https://time.com/5921518/covid-exposure-notification-apps/

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- For months, slow development, sparse public outreach, and suspicion of the new software stymied the effort of using exposure notifications apps to slow down the outbreak of COVID-19
- Over the summer, only 6 states in the U.S. released apps using the software
    - 4 more joined by October
- Even in states that released EN apps, adoption was slow
- In Ireland, around a third of adults were using COVID-19 tracking apps as of November
- EN app adoption rates in some states are now skyrocketing by comparison due in part to a new approach from Apple and Google
- States using the new protocol called Exposure Notification Express and launched in September, can quickly and easily deploy basic, pre-formatted version of the Apple/Google-enabled contact tracing apps, saving costs and development time
    - EN Express also lets states send push notifications encouraging residents to opt in – this seems to be driving faster adoption
- In a survey of 853 people from every state in the U.S. showed that individuals are highly motivated to use contact-tracing apps, for the sake of their own health and that of society as a whole, however, that they are also concerned about privacy, social disapproval, and surveillance
    - People's trust in the data collectors is dependent on the technology features of these apps and the privacy protection initiatives instigated by the authorities
    - People expect regulatory protection if they are to use contact-tracing apps – this suggests a need for laws and regulations with strict penalties for those who collect, use, disclose, or decrypt collected data for any purpose other than contact tracing

Health Canada greenlights another COVID-19 vaccine candidate for human trials – December 22, 2020
https://www.ctvnews.ca/health/coronavirus/health-canada-greenlights-another-covid-19-vaccine-candidate-for-human-trials-1.5241895

- A Saskatchewan-developed COVID-19 vaccine candidate is the latest to be approved for human trials in Canada
    - It is one of 2 being developed by the Vaccine and Infectious Disease Organization at the University of Saskatchewan
- Participants will be recruited shortly, and vaccinations will start in January
- If the three-phase trials are successful, the vaccine could be ready by late 2021
- Both of VIDO's potential vaccines are protein subunit vaccines
    - This means they are created out of specific parts of a dead germ, rather than a live virus or an entire dead germ
    - This type of vaccine is often used to protect against hepatitis B, human papillomavirus, whopping cough, and shingles among others

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    - This type of vaccines typically simpler to mass-produce than RNA or viral vector vaccines and do not require ultra-cold storage
- According to the World Health Organization, 18 of the 61 vaccine candidates that have reach the clinical trial stage are based on protein subunits
    - This includes the ones developed by Novavax and Sanofi

Quebec-Based Medicago has entered a combined Phase 2 and 3 trial this month – December 15, 2020

https://montreal.ctvnews.ca/montrealers-are-helping-test-the-only-quebec-made-potential-vaccine-1.5230844

- Medicago entered a combined Phase 2 and 3 trial this month after reporting successful results in early testing
- Medicago's vaccine candidate is derived from "virus-like particles" found in plants
    - The coronavirus-like participles mimic the virus to spur an immune response without introducing any form of the actual virus to the human body
    - Medicago uses plants as living factories to produce the antigen in the vaccine that spurs an immune response
    - This is achieved through recombinant technology – genetic code is transferred to a plant, at which point "the plant will start expressing that antigen like if it was its own"
    - The plant they used it called nicotiana benthamiana
- In their Phase 1 clinical trials, the company stated that 2 doses of their adjuvanted vaccine spurred a significant antibody response in 100% of the trial subjects
    - Those who received the Medicago adjuvanted vaccine had higher antibody levels than the levels found in those who had contracted COVID-19
- In Phase 1 they looked at around 180 healthy subjects between the ages of 18 and 55
    - Participants were given either the vaccine on its own or the vaccine with one of 2 adjuvants mixed in: GlaxoSmithKline's pandemic adjuvant or Dynavax's CpG 108
    - An adjuvant is a substance that is added to vaccines in order to boost the effects and enable a higher immune response
- The study showed that the vaccine candidate on its own produced antibodies in the subjects, but demanded a much higher dosage level in order to get proper results
- The adjuvanted vaccines were what really had an effect
- After 2 doses of adjuvanted vaccine, no matter which adjuvant was used, the antibody response rose significantly
- However, subjected developed anti-spike IgG antibodies after a single dose of the vaccine when mixed with the GSK adjuvant
- The GSK adjuvant provided the best immune response at a very low dose
- The antibody response did not increase as the dosage of the adjuvant went up
    - Only 3.75micrograms were needed to get a significant level of antibody and cellular immune responses

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- Being able to spur an immune response at a lower dose means they would be able to manufacture more of the vaccine if it clears the rest of the phases
- Moving forward on phase 2 and 3 trials, Medicago will only use their vaccine candidate mixed with GSK's pandemic adjuvant
- In phase 2, they will be studying more subjects and those in other age groups not included in the first trial
    - It will involve around 600 subjects between the ages of 18 and 64
- In the final phase of the clinical trials, Medicago hopes to enroll around 30,000 subjects in different regions across the globe
- Everyone in phase 2 was pre-screened before being accepted into the study to ensure they don't have any pre-existing illnesses
- 10 sites in Canada will be testing the vaccine as well as 5 sites in the U.S.
- The company hopes to launch Phase 3 by the end of the year
    - This is when they will evaluate the efficacy of the vaccine

Research shows COVID-19 immunity is different than fly immunity – December 22, 2020

https://globalnews.ca/news/7537652/research-shows-covid-19-immunity-different-than-flu-immunity-antibodies-drop-rapidly-after-recovery/

- Researchers in Montreal and Toronto, Canada are studying the body's immunity response to COVID-19
    - Early finding show that immunity to the novel coronavirus is less protective than that to influenza
- Researchers took blood cells from 13 people who had recovered from COVID-19 within four to 12 weeks since the patients' full recovery, then stimulated their blood cells with parts of the virus to see if their immune cells would recognize the virus and create a response
    - The recovered COVID-19 patients had immune memory responses to both SARS-CoV-2 and to the influenza virus, but with significant differences in how they responded
- The response in individuals whose blood cells were stimulated with COVID-19 showed increased inflammation and showed a response that shows less protection from infection than when people's blood was stimulated with the influenza virus
- The study is looking to find out whether the immune cells in the blood of someone who has recovered from COVID-19 will react similarly or differently to the COVID-19 vaccine
- This early research finding on COVID-19 immunity show that antibody levels in the blood of patients drop rapidly during the weeks after their immune system clears the virus and symptoms have subsided

Researcher think the new UK coronavirus strain could already be in the U.S. – December 22, 2020

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https://www.cnn.com/2020/12/22/health/uk-coronavirus-variant-surveillance/index.html

- Researchers who are studying the new U.K. strain of the coronavirus think it likely arrived in the U.S. in mid-November and that many people in the U.S. could already be infected
- The UK coronavirus variant has not yet been identified through sequencing efforts in the U.S, however the likelihood that it is in the U.S. in high seeing that only about 51,000 of 17 million US cases have been sequenced
- In the US, only a small number of samples are gathered from infected patients and put through genetic sequencing to look at the order of the letters in its genetic code
- Since November 15, genetic sequencing has been done on viruses found in about 300 people in the U.S. and in about 9000 in the U.K
- On its website, the Centers for Disease Control and Prevention (CDC)notes that of about 275,000 full-genome sequences in public databases, 51,000 are from the U.S. and 125,000 are from the U.K.
    - This difference is striking considering how many more infections have been confirmed in the U.S (18 million in the U.S. co pared with over 2.1 million in the U.K)
- Last month, the CDC launched a strain surveillance program where states will send in at least 10 samples biweekly for analysis
    - The agency expects to have the program fully implemented in January

BioNTech CEO states coronavirus vaccine is "highly likely" to protect against new strain – December 22, 2020

https://globalnews.ca/news/7536953/biontech-ceo-confident-vaccine-uk-coronavirus-variant/

- While further studies are needed to be completely sure, BioNTech is confident that its vaccine will work against the new U.K. variant
- The CEO of BioNtech explained that the proteins on the U.K. variant are 99% the same as on the prevailing strains, and therefore BioNTech has "scientific confidence" that its vaccine will still be effective

Another mutated coronavirus strain found in the U.K – December 23, 2020

https://globalnews.ca/news/7539331/new-coronavirus-strain-uk/

- A new, potentially more infectious variant of the novel coronavirus that causes COVID-19 has been found in Britain in cases linked to South Africa
- South Africa's health department announced last week that a new genetic mutation of the virus had been discovered and might be responsible for a recent surge in infections there
- The U.K. detected 2 cases of another new variant of coronavirus and both are contacts of cases who have travelled from South Africa over the past few weeks

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- Countries around the word have now closed their borders to both Britain and South Africa following the identification of the new, fast-spreading variants of the coronavirus
- For now, it is speculated that the vaccine will work against many variations in the virus

- The National Institutes of Health has awarded over $107 million to support new, non-traditional approaches and reimagined uses of existing tools to address gaps in COVID-10 testing and surveillance
- As part of the Rapid Acceleration of Diagnostics initiative, the awards from the RADx Radical program will support 49 research projects and grant supplements at 43 institutions across the U.S.
    - It will focus on non-traditional viral screening approaching, such as biological or physiological markers, new analytical platforms with novel chemistries or engineering, rapid detection strategies, point-of-care devices, and home-based testing technologies
- The grants will support new approaches to identifying and tracking the current SARS-CoV-2 virus, which causes COVID-19
- 2 intramural projects were supported by this initiatives
    - $1 million award to the National Institute of Environmental Health Sciences for developing barcoded screening of SARS-CoV-2
    - $200,000 award to the National Library of Medicine for Nationwide Early-Warning System and Data Platform to aid policy decisions for public health management of viral diseases with COVOD-19 as a use case

FDA authorizes first over-the-counter COVID-19 test system for home use – December 9, 2020

https://www.cnn.com/2020/12/09/health/fda-over-counter-covid-test/index.html

- The U.S. FDA has granted and emergency use authorization for the first non-prescription, over the counter COVID-19 test kit for at-home use
- The LabCorp Pixel COVID-19 Test Home Collection Kit allows anyone 18 and older to buy the kit and collect nasal swab samples at home
    - The samples are then sent to a LabCorp facility for testing
- Positive or invalid results are delivered back to the consumer by phone or through a healthcare provider
- Users will be notified by email or through an online portal if results are negative
- The new kit is now available through the Pixel by LabCOrp wesbiet
- Last month the FDA issued an Emergency Use Authorization for the first self-test for COVID_19 that can provide rapid results at home - the Lucira COVID-19 All-in-on Test Kit
    - However, this is only available by prescription

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- Therefore, LabCorp Pixel COVID-19 Test Home Collection Kit will be the first non-prescription at-home testing kit

FDA Authorizes Antigen Test for First Over-the-Counter Fully-at-home diagnostic test for COVID-19 – December 15, 2020
https://www.fda.gov/news-events/press-announcements/coronavirus-covid-19-update-fda-authorizes-antigen-test-first-over-counter-fully-home-diagnostic

- The FDA issued an emergency use authorization for the first over-the-counter fully at-home diagnostic test for COVID-19 – The Ellume COVID-19 Home Test
    - This is the first COVID-19 test that can be used completely at home without a prescription – with no need to send in samples to a lab
    - This is a rapid, lateral flow antigen test – a type of test that runs a liquid sample along a surface with reactive molecules
    - The test detects fragments of proteins of the SARS-CoV-2 virus from a nasal swab sample from any individual 2 years of age or older
    - The test involves collecting a sample with a nasal swab that users then place into a Bluetooth-connected analyzer that syncs with a smartphone app
- The test does not require sending samples to a lab
- Results are delivered via a smartphone app in as little as 20 minutes and can be shared with healthcare professionals
- Ellume said it expects to produce more than 3 million of the tests in January with a likely cost of $30 or less
- They will be available in pharmacies, drug stores, and online
- The at-home test correctly identified 96% of positive samples and 100% of negative samples in people with symptoms of COVID-19
- In people who were not symptomatic, the test correctly identified 91% of positive samples and 96% of negative samples
- While antigen tests are not as sensitive as polymerase chain reaction testing, the fact that it can deliver fasts results from the convenience of your home can play an important role in response to the pandemic
- The FDA announced that positive results from the Ellume test in people without symptoms shoul dbe treated as presumptively positive until confirmed by another test as soon as possible
    - They also suggest that any person who tests negative but experiences COVID-19 like symptoms should consult with their healthcare provider
- The mobile application requires individuals to input their zip code and date of birth, with optional fields including name and email address, and reports the results as appropriate to public health authorities to monitor disease prevalence

Ferrets and cats most susceptible to COVID-19 infection after humans – Decemeber 14, 2020
https://www.ctvnews.ca/health/coronavirus/ferrets-cats-most-susceptible-to-covid-19-infection-after-humans-study-finds-1.5230315

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- A new study carried out by researchers at the Centre for Genomic Regulation in Barcelona found that ferrets and cats are most susceptible to coronavirus infection after humans
    - Civets and dogs are also among the animals with a high susceptibility to SARS-CoV-2 virus
    - Researchers found that variant of the ACE2 receptor in humans followed by ferrets, cats, dogs, and civets have the highest binding ability to the coronavirus spike protein
    - Humans, chickens, and ducks have the hi
- According to findings published in the peer-reviewed journal PLOS Computational Biology, ducks, rats, mice, pigs, and chickens had lower or no susceptibility to infection compared to humans
- Knowing which animals are susceptible to SARS-CoV-2 helps to prevent building up animal reservoirs from which the coronavirus can re-emerge at a later date

The Mysterious Link Between COVID-19 and Sleep – December 21, 2020
https://www.theatlantic.com/health/archive/2020/12/covid-19-sleep-pandemic-zzzz/617454/

- Feixiong Cheng, a data analyst at the Cleveland Clinic used AI to search for hidden clues in the structure of the virus to predict how it invaded human cells, and what might stop it
- One observation that stood out was that the virus could potentially be blocked by melatonin
- In addition to melatonin's well-known effects on sleep, it plays a part in calibrating the immune system
    - It helps keep our self-protective responses in check
- In a recent study that he conducted, people taking melatonin had significantly lower odds of developing COVID-19, much less dying of it
    - Other researchers have noticed similar patterns
    - In October, a study at Columbia University found that intubated patients had better rates of survival if they received melatonin
- Cheng suggest that the real issue may not be melatonin but the function it controls – sleep
- Throughout the pandemic, the department of neurology at Johns Hopkins University has been flooded with consultation requests for people suffering from insomnia
- After recording from COVID-19, people reported changes in attention, debilitating headaches, brain fog, muscular weakness, and most commonly, insomnia
- Some researchers speculate that sleep disturbances are just the beginning of long-term effects that we will see for years to come
- In the early stages of COVID-19, your body feels extremely tired but as the infection goes on, people find that they often cant sleep and the problems with communication compound one another

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- A central function of sleep is maintaining proper channels of cellular communication in the brain

Canada reports first cases of U.K. coronavirus variant – December 27, 2020
https://globalnews.ca/news/7543498/uk-coronavirus-variant-first-cases-canada-ontario/

- On December 26th, Ontario reported the first 2 cases of the coronavirus strain that was first identified in the U.K
- British Columbia has had 4 known cases of the variant and Quebec has had 1 case
- In Canada, each case is linked to a person who has recently travelled from the U.K. or someone who has come in contact with a recent traveler from the U.K
- It has since spread to Australia, Japan, and several European countries such as France, Spain, Sweden, Switzerland, and the Netherlands