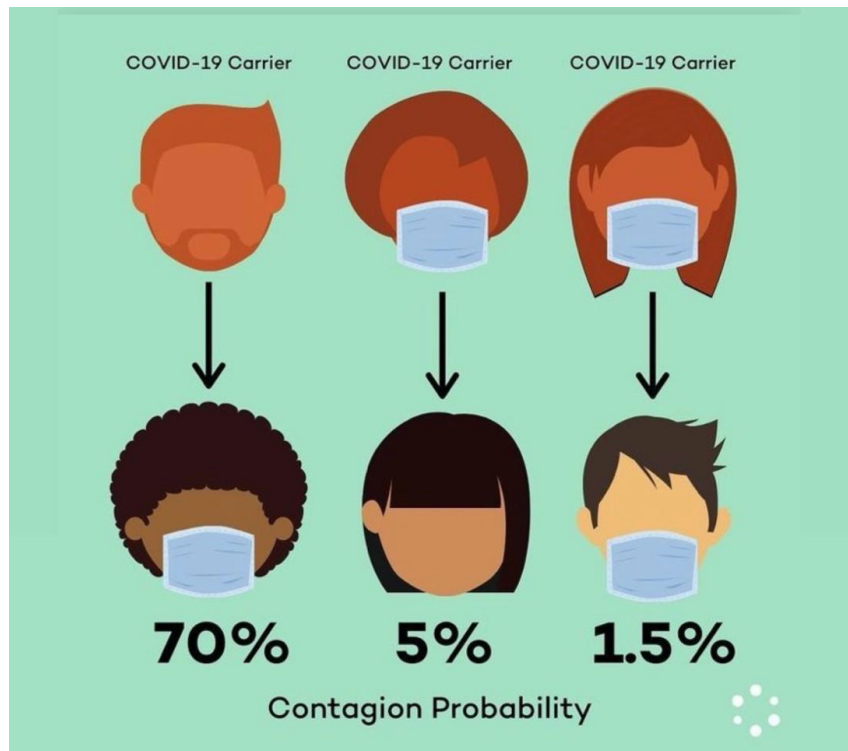


I wondered how much there would be to present since the last COVID talk was only 6 weeks ago, but as it turns out, many scientific papers have been released in this short time frame. The new information is rather disjointed so I tried to organize the random facts into categories.

Prevention

- **Wear eye glasses** - Wearing eyeglasses is still a good idea as wearing glasses for more than 8 hours reduces the risk of COVID-19 by 26%
- **No indoor dining** (with people other than your household member) - Indoor restaurants remain one of the most risky locations, and as you know, Governor Polis has once again closed down indoor dining... This message should be translated to holiday dinners.
- **No cruises** - While cruises have been banned in the United States, a cruise began in the Caribbean in which they tested all passengers and crew on their way on to the boat. Within 24 hours, 3 people had symptomatic COVID and by the next day the cruiseship was forced to disembark.
- **Limit flying** to emergencies- While flying is generally thought to be safe (not necessarily the airport), as far as I know only one flight was studied. On this flight passengers were tested getting on the plane from the United States to Europe and followed coming off the plane. Reportedly, 79 people contracted COVID from the 7 hour flight. I'm feeling less mean now that the CDC has announced no travel for Thanksgiving and meals should only be shared between household members.
- **Masks protect** - CDC says masks protect the wearers too! Near universal mask wearing could save >150,000 lives.
- **Don't marry a healthcare worker** - Healthcare workers make up 1/6 of the COVID hospital admissions. If a healthcare worker gets COVID their risk of hospitalization is 11.5%, that's 3.3x higher than the general public. Spouses have a 1.8x increase risk of hospitalization due to COVID.
- **Don't stop your PPI yet** - Patients on proton pump inhibitor (like Nexium, Protonix, Prevacid) for reflux seem to have worse symptoms but the relationship doesn't seem to be causal.



- **Careful at the grocery store** – In Massachusetts, 1/3 of grocery store workers were positive and mostly asymptomatic
- **If your spouse has COVID, run!** – If your spouse gets COVID, your chance of getting COVID is 53%.
- **Avoid Group Sports** – Yet again, there was another team sport reporting widespread COVID. A mens' hockey team in Florida spread COVID to all players willing to get tested (13) and a rink worker. They were wearing helmets but not masks.

Vaccine

- Two companies have reported ~95% success in their COVID-19 vaccines – Moderna and Pfizer. Pfizer reports that it will have 12.5 million vaccinations available for the United States by the end of the year and much more in early 2021.
- This morning, hot off the presses, AstraZeneca, announced their vaccine with 75-95% effectiveness.
- I suspect that our office will not have access to the vaccine for distribution but that it will be distributed through the state at country level distribution centers.
- Colorado does have a distribution plan that is tiered with healthcare workers and elderly in the first tier and patients with illness and those who live in group housing in the second tier.
- It should make you feel even more reassured that the vaccine will be further tested on millions of healthcare workers before you receive it.
- Side effects are similar to that of the flu vaccine.
- There is also a nasal spray, bioRxiv, in development that contains a lipoprotein that inhibits fusion of the virus to the nasal cell membrane.

Testing

- Personal health trackers detected with 80% accuracy whether a person tested positive for COVID based on heart rate, sleep duration and activity.
- The deep nasopharyngeal and saliva tests (not readily available in Denver) are better at detecting COVID 19 than the rapid tests or the front of the nose tests.
- If you come in contact with someone with COVID or symptoms, you should be tested, so that you know if your contacts also need to isolate for 14 days.

Treatment

- 10 days of dexamethasone significantly improved mortality in hospitalized COVID 19 patients, the findings did not support the use of other steroids or their use in less ill people.
- Anticoagulation decreased mortality for hospitalized patients, so please call us if you test positive as we will talk to you about thinning your blood
- Remdesivir decreases duration of illness in hospitalized patients but not mortality
- In the pipeline:
 - Studies show that convalescent plasma was not helpful as we had hoped.
 - The REGN-COV2 antibody cocktail reduced the COVID viral load and lowered the need for additional medical care in outpatients with COVID. Portion of the trial for

- severely ill patients was stopped due to unfavorable risk/benefit profile (high flow/vents).
- Investigational neutralizing antibody treatment, LY-CoV555, for outpatients with mild to moderate COVID is currently in phase 2 of trials, and has shown decreased viral load.
 - Bamlanivimab when administered to outpatients decreased hospitalization and ED visits, but this treatment is currently not accessible for a wide variety of reasons. While it may work, it is not very practical.
 - Tocilizumab, an IL-6 inhibitor had no mortality benefit, clinical improvement, or need for intubation.
 - Inhaled interferon beta-1a showed higher odds of clinical improvement in phase 2 trials with 100 hospitalized patients who's odds of clinical improvement were 3x greater and demonstrated a 79% lower risk of severe disease or dying. Although, there was no change in time to discharge from the hospital.

After COVID

- 15% of patients hospitalized with COVID end up back in the hospital within 2 months
- 62% of patients hospitalized with COVID show injury to the heart muscles
- 44% with severe COVID develop autoimmune antibodies (ANA), that have the potential to attack one's own tissue like in Lupus or Rheumatoid arthritis
- Antibodies against COVID seem to be lasting at least 5 months