

Practical Covid Safety

for Every Furry

April 6, 2024
Golden State Fur Con



Presented by: **Yatchi**
covidsafefurs.org
#GSFC2024CovidTest

Welcome to Covid Safe Furs!

- Thank you for coming! We're so glad you're here! ❤️
- Feel free to grab some **masks** - hopefully you find your perfect fit! But if you're already wearing one, please **keep that one on** until after you leave.
- There's a limited number of **tests** if you need one, too.
- Join our **Telegram** chat: covidsafefurs.org/telegram

Who am I?

- **Yatchi** (he/him, rhymes with “catchy”)
- Spotted hyena
- No special credentials, no con affiliation, just care a lot about Covid
- When indoors, I wear an N95 for pretty much everything: lifting weights, running, DJing, fursuiting
- In 2022, I wore a P100 for a 10-hour flight and back with no breaks



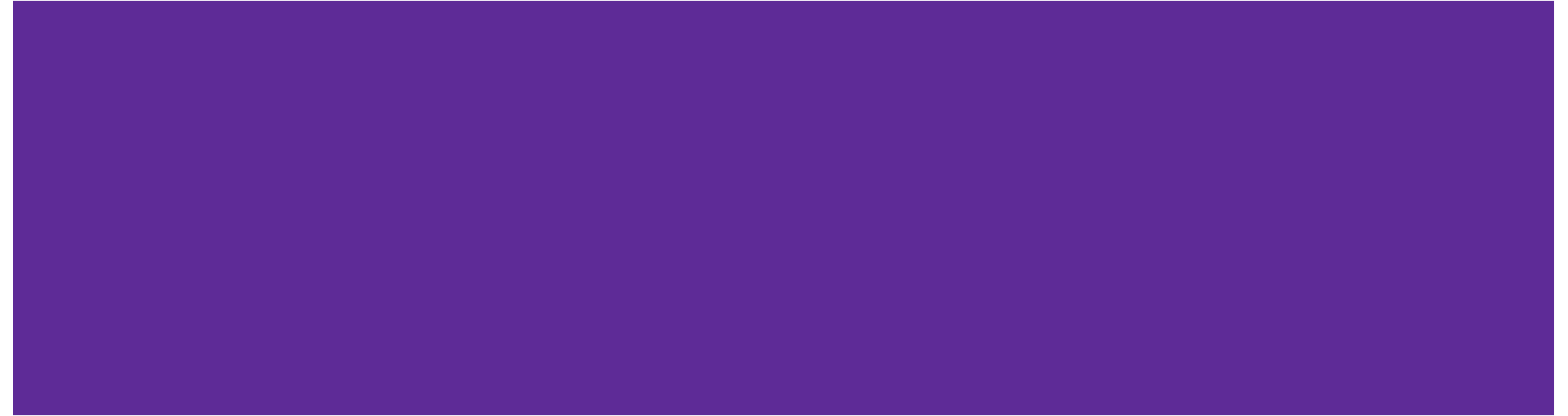
Preliminaries

- I am **not a doctor** and this is **not medical advice**.
- But we believe there is lots of information about Covid that regular people **can** and **should** learn. We're here to share the most important things we've picked up over the past years.
- You don't need a scientific background to learn all of this stuff. You can help share it too!

What are we gonna talk about today?

- You will learn **why Covid still matters, how Covid works,** and **what you can do** to protect yourself and others.
- Our focus is on **practical information** that can help you every single day, including here at the con so you can have fun!
- We are **not** here to judge or dictate your behavior or plans! We just want you to be equipped to make **informed decisions.**

**The current situation, and why you
should care**



Is Covid still a thing? I look around and see...

- There are **essentially no more restrictions anywhere**, not even in hospital cancer wards or NICUs.
- Most people have gone **back to regular life**. Some have gone months or years without incident.
- Authorities have **declared the emergency over**.
- **And yet...** every week in the US, about 1,000 people still die from Covid and over 10,000 are hospitalized.

Is Covid still serious? People keep saying...

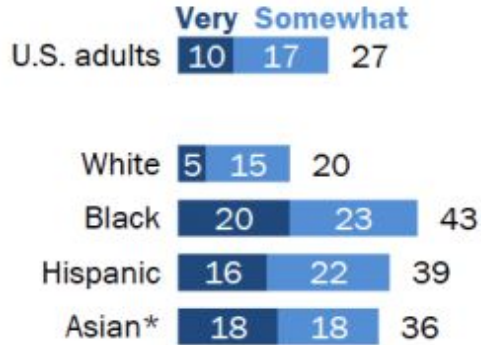
- “Covid is mild/like the flu.”
- “You have to get it over with.”
- “You have to train your immune system.”
- “It’s endemic now.”
- “Only vulnerable people need to worry.”
- **None of these are supported by the scientific evidence.**

Do we still have to worry? People keep telling me...

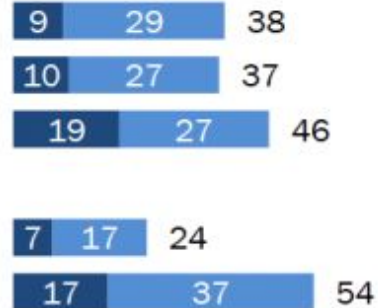
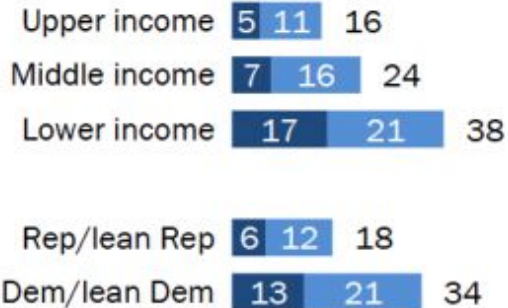
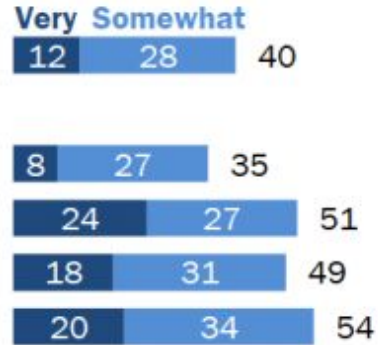
- “We have to learn to live with the virus.”
- “We’ve done all we can. This is just how it’s going to be.”
- “People are tired of Covid.”
- “We have to move on. We have to go back to normal.”
- “You have to live your life.”
- **We don’t believe these are good excuses to give up.**

*% of U.S. adults who say they are **very/somewhat concerned** that they ...*

**Will get COVID-19 and
require hospitalization**



**Might unknowingly spread
COVID-19 to others**



Survey of U.S. adults conducted
Feb. 7-11, 2024.

Pew Research Center

<https://www.pewresearch.org/science/2024/03/07/how-americans-view-the-coronavirus-covid-19-vaccines-amid-declining-levels-of-concern/>

Is infection harmful?

- Yes, **even if you're young and healthy.**
- Yes, **even if you're up-to-date on vaccines.**
- Yes, **even if you've had it before.**
- Yes, **even if you have a mild case.**
- The dangers of Covid are not limited to **death**, **hospitalization**, or **missed time** at work or school (though these are all still real.) Why is this?

Long Covid

- The name of the game is avoiding **long Covid**: symptoms that appear or persist after infection, which can affect nearly every organ and system in the body.
- Long Covid can be **disabling and life-changing**.
- **At least 10%** of everyone who is infected may develop long Covid. **Anyone** can get long Covid, even the young, healthy, and vaccinated. **Any infection** can lead to long Covid, even if the symptoms are mild.

Long Covid

- The more **times you are infected**, the greater the risk of long Covid becomes.
- Long Covid can **weaken and deplete** your immune system, making it harder to fight Covid (or other illnesses) in the future.
- **We do not know enough** about long Covid. We may not know the long-term effects for decades.
- The best known way to avoid long Covid is to **avoid getting infected**.

A few examples of long Covid effects

- Loss of smell and taste
- Breathing problems, pulmonary fibrosis and embolism
- Chronic fatigue, post-exertional malaise
- T-cell depletion, immune dysfunction
- Autonomic dysfunction - problems regulating heart rate, GI system, and other physiological functions
- Brain cell damage, brain fog, cognitive decline

Protecting the vulnerable

- Some people know that getting infected could **ruin their lives**. What does “living with the virus” mean for them?
- Whenever we say Covid only affects the vulnerable, we **exclude** the vulnerable, especially from **places where everyone has to go**.
- Everyone has the **right** to participate in society without endangering their health. If we have tools that can protect people, the right thing to do is to use them.

And don't forget...

- There are **a lot** of conditions that could qualify you as vulnerable.
- You might be **unaware** that you have such a condition.
- Even if you don't think you're vulnerable now, long Covid can **make** you vulnerable.

Fundamentals of Covid transmission



Airborne vs. droplet transmission

- Viruses do not travel “naked” but in **particles of water and mucus**. (Masks and air filters can capture these particles.)
- Sneezing and coughing produce **large droplets** that only travel a short distance before falling to the ground.
- Breathing and speaking produce **small airborne particles** which are light enough to hang in the air and persist.





True or false? Covid can only be spread when you're within six feet of someone.

FALSE!

Airborne transmission

- Airborne transmission is **the** route by which Covid spreads.
- Spread by other routes (e.g. touching surfaces) is **negligible to nonexistent**.
- An infectious person can spread Covid by simply **breathing**.
- If you **share the same air** as an infectious person, “6 feet” doesn’t count for much of anything.
- **Cigarette test:** if someone lit a cigarette near you, how far away could you smell it from? How quickly would it go away?

True or false? Washing and sanitizing hands is a good way to prevent Covid.

DEAD WRONG!

Hand (or paw) washing

- Covid is **airborne**. Washing and sanitizing your hands does **close to nothing!**
- Please **still wash your hands!** Just not because of Covid.
- If you're hosting a gathering, don't just put out hand sanitizer and call it a day.
- The same applies to sanitizing surfaces - do it for other reasons, not for Covid.



True or false? If you don't feel sick, you can't spread Covid.

FALSE.

You can be infected and spread Covid before you feel any symptoms.

Presymptomatic/asymptomatic transmission

- You can become infectious **before** you start feeling any symptoms. Just because you feel okay doesn't mean you're not infectious.
- You should definitely stay home if you feel sick - but that might be **too late** to protect those you were already with.
- If you start feeling sick or testing positive, you need to inform the people you were in contact with **before** then.

True or false? An infection is an infection. If you come into contact with an infectious person, there are only two possible outcomes - getting infected or not.

FALSE.

Some infections are worse than others.

Infective dose

- The **infective dose** is the number of virus copies that enter your body during an infection event.
- Your body can fight off a small amount of virus better than a large amount of virus.
- Even if you can't stop every virus particle, you can try to lower the number that make it through.
- **Imperfect efforts can still reduce infections and reduce their severity.**

True or false? What we know today about how harmful Covid is and how easily it spreads will remain correct in the future.

FALSE.

As Covid mutates, its properties can change.

Mutation

- Covid mutates **fast**. Each infection is an opportunity for more mutation and more **variants**. New variants may be more harmful, spread more easily, and evade our immunity.
- There is no guarantee that Covid will mutate to become more benign - this is an **unfounded theory**.
- Slowing the rate of mutation means reducing infections. Again, **imperfect efforts can still be effective**.

Review: Fundamentals of Covid transmission

- Covid is **airborne**. Sharing the air is enough for transmission.
- Handwashing is **ineffective** against Covid.
- You can spread Covid **before** you have any symptoms.
- A smaller **infective dose** is easier to fight off.
- **Mutations** make the fight against Covid harder.
- All efforts to reduce infections and reduce their severity matter, **even if imperfect**.

Tools



Principles

- No tool can do every single job perfectly. We need to be precise about what we're asking our tools to do.
- **Swiss cheese model:** every tool can fail, but multiple layers of protection make bad outcomes less likely.
- There is no way to guarantee 100% you will not get Covid, but we can try to evaluate the risk and how our tools can lower it.

True or false? A mask can give you effective protection against infection.

Yes...

*if it's an **N95**, and if it fits you and forms a good seal.*

Masks

- Your mask is your **shield**. It is your **first line of defense** and your **most effective and reliable tool**. It is often the only tool you have full control over.
- You must wear a high-quality **N95** (or KN95, KF94, etc.) mask for real protection.
- **Cloth and surgical masks** are better than nothing (and much cheaper than N95s) but should not be considered real protection.

How to wear an N95 mask

- Your mask must form an **airtight seal** around your nose and mouth. (Facial hair compromises the seal.) The metal strip must be **pressed and molded** to the bridge of your nose.
- **Basic fit test:** feel for **air leaks** when you inhale and exhale. Note: masks do not block most smells.
- Shop around for the mask that **fits your face** best!
- Keep out of the rain, and replace when dirty, wet, hard to breathe through, loose, or before high-risk situations.



Masking guidelines

- “My mask is for you, your mask is for me.” Two-way masking is **significantly** more protective than one-way masking.
- “Feel free to wear a mask if you're worried!” puts all the burden on the vulnerable. Safety should be **everyone's shared responsibility**.
- If you approach someone who is wearing a mask, consider putting your own on **preemptively**. They will appreciate it!
- **Don't pressure people** to unmask. **Make everyone feel included!**

Masks are great for other things too!

- Masks work for other respiratory diseases like **colds, flu, and RSV**.
- They can help retain heat and moisture in cold or dry environments.
- If you are affected by **wildfire smoke**, wear a mask!
- Try wearing a mask while doing dusty housework.
- When **shaving fur**, a mask will help keep the fibers out of your lungs!

Can you fursuit with a mask?

- Difficult, but not impossible!
- **CAUTION:** a fursuit may compromise the seal of your mask.
- Practice getting it on and off!
- Consider using other tools, like going outside.



This may look like a cat, but there's actually a hyena with an N95 under there!

Activity:
Fit testing!

Fit testing: disclaimer

Due to equipment, time, and logistical constraints, we will use a simplified procedure, which will **not** meet the requirements of OSHA Standard 1910.134(F) and will **not** certify your mask to protect you against exposure to respiratory hazards in a workplace. The results of this testing are for informational purposes only. I express or imply no guarantee that your mask will provide adequate protection against Covid or other respiratory hazards.

Fit test procedure

- Keep your mask on.
- Place the hood over your head.
- Bitter or sweet solution will be injected.
- Open your mouth slightly, extend your tongue slightly, and breathe deeply. You may also try moving your head or jaw or talking.
- If you taste bitter/sweet within 30 seconds, the test has failed.

You can read this passage aloud:

When the sunlight strikes raindrops in the air, they act like a prism and form a rainbow. The rainbow is a division of white light into many beautiful colors. These take the shape of a long round arch, with its path high above, and its two ends apparently beyond the horizon. There is, according to legend, a boiling pot of gold at one end. People look but no one ever finds it. When a man looks for something beyond his reach, his friends say he is looking for the pot of gold at the end of the rainbow.

True or false? If you test negative, you can be sure that you don't have Covid.

FALSE, sadly.

Rapid tests and their limitations

- There are different types of tests (e.g. rapid tests and PCRs) used to perform a few different jobs.
- We'll focus on using **rapid tests** to test people with **no symptoms** for reassurance that they're not infectious.
- Rapid tests are better than nothing, but they are at their **least reliable** in this exact situation.
- The false negative rate of rapid tests appears to have been **increasing** recently, probably because of the virus mutating.

Why aren't tests perfect? What can I do about it?

- It takes **time** for an infection to show up on a test. Sometimes people don't test positive until long after symptoms start.
- A negative test is a **sign** you haven't been infected, but it is not a **guarantee**. There is always the risk of a **false negative**.
- Use this sign together with others: Do you have any **symptoms**? Have you been taking **risks** in the past few days?
- If you can, test **frequently**: from just before the start of the con until a few days after. **And tweet your results with #GSFC2024CovidTest!**

What if I test positive?

- **Isolate** immediately. If you must be around others, wear a well-fitting N95 mask, open windows, and run air purifiers.
- Recall where you've been the past few days and **inform your contacts**. A good rule of thumb is 2 days before positive test or 2 days before first symptoms, whichever is earlier.
- Consider getting a lab **PCR test** for documentation.
- Consider seeking **Paxlovid** if you are eligible.
- Get lots and lots of **rest!**

True or false? If you don't have any symptoms, you don't have Covid and cannot infect others.

FALSE, sadly.

About those symptoms of yours...

- Sometimes it really is “just allergies” (or the cold winter weather), but you could be wrong.
- It’s not “just con crud”, either. **Don’t give people a cold!**
- I won’t order you to leave the minute your throat starts feeling dry, but be rational, not reckless.
- Be **considerate** of those around you, who have no way of knowing that you’re not sick. Be **honest** to others and to yourself about the potential risk.

True or false? If you're vaccinated, you don't have to worry about Covid anymore.

FALSE, sadly.

Vaccines

- The Covid vaccines are very good (but not perfect) at reducing **death and severe acute illness**.
- You can still **get infected, infect others**, or contract **long Covid** after being vaccinated.
- The immunity gained from a vaccine **wanes** over time. New **variants** can also make vaccines less effective. That's why it's important to stay **up-to-date**.

Vaccines

- Vaccines work best **together** with other tools that reduce infective doses.
- They are **not enough** on their own to end Covid.
- They are our **last line of defense**, not our first. (That's masks!)

True or false? You can't get infected outdoors.

You can, but it's a heck of a lot harder!

What can I do about air quality?

- **Go outside** - it's dramatically safer!
- But remember that not all outdoor conditions are the same. Examine your surroundings, use the cigarette test, and be careful around crowds.
- If you're inside, **ventilate** by opening windows and using fans.
- Air purifiers can **filter** Covid out of the air!

CO₂ monitoring

- Since people exhale CO₂, you can use it as a **proxy measure of ventilation**.
- Outside CO₂: 420 ppm. Generally **>1000 ppm** is considered bad.
- CO₂ itself isn't healthy either!
- Watch out if CO₂ sources are present or if air purifiers are used.



Aranet4, a common CO₂ monitor. A lot cheaper now (~\$160) than it used to be.

Commercial air purifiers

- High-filtration **HEPA** filters are designed to clean the air very thoroughly in **one pass**.
- Full effectiveness is at **full fan speed**, which is usually **noisy!**
- If people turn it off because it's too loud, it's useless!
- Must buy proprietary filters; difficult to repair.



Corsi-Rosenthal boxes

- By using a bigger, more permeable filter, but pushing more air through it, we can clean the air faster!
- A **Corsi-Rosenthal box** is made from a box fan, 20" furnace filters (MERV-13), duct tape, and cardboard - cheap parts available at the hardware store.
- Box fans can still be loud.



PC fan Corsi-Rosenthal boxes

- PC fans are designed to push lots of air **quietly** and using **little power**. (And some of them come with RGB lights.)
- You can 3D print or laser-cut your own cases! You can also buy DIY kits or assembled units.
- Efficient, quiet, customizable, and repairable.

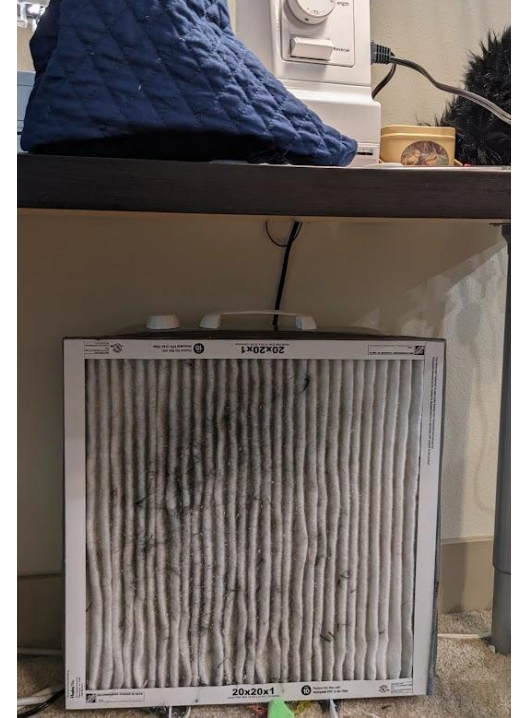


How to choose an air purifier

- Compare air purifiers based on **price** (including filter replacement), **CADR** (clean air delivery rate) relative to **room size**, and **noise**.
- **Commercial air purifiers** look nice, but are expensive and may not be quiet at full speed.
- **Traditional CR boxes** are cheap and quick to build, but noisy.
- **PC fan CR boxes** cost a little more and take more work to assemble, but are efficient and quiet.

Air purifiers are great for other things too!

- Air purifiers remove dust, pollen, pet dander, mold, car exhaust, and smoke, all of which impact your health and comfort.
- You might not need to vacuum as often!
- Help control fur when making fursuits!



True or false? If you look up Covid cases, that's how many people in your area have Covid right now.

FALSE. Only people who test positive on laboratory tests are counted.

Community monitoring

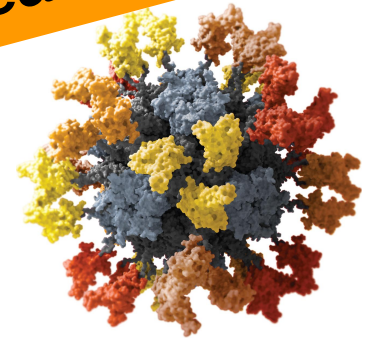
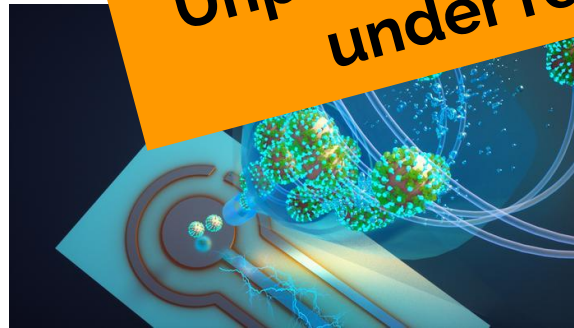
- Official case numbers do not paint the whole picture, especially when testing infrastructure has been reduced.
- Deaths and hospitalizations are **lagging indicators**.
- **Wastewater monitoring** is the most reliable indicator. It catches surges before they show up in case numbers!
- See [BioBot](#) and [CDC NWSS](#).

Potential future tools

- Nasal sprays
- Far-UV sterilization
- Airborne detection
- Sterilizing vaccines



**Unproven/speculative/
under research**



Review: Tools

- Masks
- Tests
- Symptom monitoring
- Vaccines
- Outdoor gatherings
- Ventilation
- Air purifiers
- CO₂ monitoring
- Wastewater monitoring
- Potential future tools

**Putting it all
together**



True or false? Caring about Covid means wearing a mask 24/7 and never leaving the house.

FALSE!

This is not all-or-nothing. You don't have to be perfect to make a difference.

Risk management

- Risk management is about **managing unknowns**. Your risk in a given situation is always somewhere between 0% and 100%. In the face of uncertainty, you must decide what your **risk tolerance** is.
- You can also vary your own risk tolerance in **different situations**, varying your level of caution accordingly. Ask when it's worth it to be more careful or less careful.

Risk evaluation

- **What are the chances that an infectious person is near me?**
Wastewater monitoring, crowdedness, tests, symptoms
- **If an infectious person is near me, what are the chances that they will infect me?**
Indoors/outdoors, ventilation, air filtration, masks
- **What choices can I make to change these odds?**

Good places to consider masking

- Places that **aren't fun** (e.g. grocery store, work), where people might not have a choice about going to
- Places that are **high-risk**, i.e. crowded or poorly-ventilated (e.g. public transportation, airports and airplanes)
- Places where there are **many vulnerable people** (e.g. hospitals, nursing homes)

Good times to consider masking

- The days **before** you go do something fun - so you can feel more confident that you're not bringing Covid in with you
- The days **after** you did something fun/risky - so that you avoid infecting people who didn't take that risk
- The weeks before and after getting a **vaccine**
- Whenever **community levels** are high

Good situations to consider masking

- In **crowded areas** (including when outdoors)
- When **ventilation** seems poor
- When **CO₂ levels** are high
- When you have any kind of **symptoms**, no matter how slight, even if you're "pretty sure" they're just allergies
- When you see **others** wearing masks - they will appreciate you joining them!

When you really can't wear a mask

- **Eating out:** instead of eating inside a restaurant, try outdoor dining, picnics, or delivery/takeout.
- **Room parties:** consider running air filters, asking people to test, and asking people to be up-to-date on vaccines. Make sure that people feel comfortable and included if they choose to wear masks.
- **You don't have to be perfect to make a difference.** Masking some of the time is better than never!

How to talk about it: be honest and respectful

- Instead of saying “**Don't worry about it, just relax!**”, ask what you can do to help others feel safe and comfortable.
- Instead of “**It's not Covid, I promise!**”, give specifics about your symptoms and past behavior, and offer to take precautions.
- Instead of “**It's not a big deal, you'll be fine!**”, acknowledge that others' circumstances may differ from yours, and respect their feelings and the decisions they make about their own safety.

Conclusion: inclusivity means Covid safety!

- Furry should be an **inclusive** place.
- Many furs are vulnerable. Others may just be concerned.
But we **all** deserve to have our health and safety prioritized.
- Covid can be difficult to talk about, but communicating **honestly and respectfully** is the best policy.
- **Let's protect each other so we can all be here together!**

What can I do to help?

- Join our **Telegram** group at covidsafefurs.org/telegram!
- **Spread the word** and reach out to those in need.
- Implement **safety measures** at your furmeets and cons: we have a special [guide](#) for organizers.
- Send us **feedback/testimonials**!
- **Host** your own version of this panel - we'll help!