

Does Green-Yellow Snot Mean You Have a Sinus Infection?

Analysis by [Dr. Joseph Mercola](#)

✓ Fact Checked

December 24, 2022

STORY AT-A-GLANCE

- › The color of your snot, or nasal mucus, offers clues to your health, including a viral or fungal infection. Not all green or yellow-colored snot means you have a sinus infection
- › Seasonal allergies can change the color of your nasal mucus to white and cause a runny nose. However, the common cold or sinus infection will usually also trigger a fever, headaches and a productive cough
- › You can lower your risk of an upper respiratory infection or sinus infection by caring for your immune system through hydration, an adequate amount of quality sleep, promoting the proliferation of healthy bacteria in your gut microbiome and eating a vitamin-rich diet
- › Several natural strategies that help to shorten a cold include zinc lozenges, nebulized hydrogen peroxide, chicken soup, vitamin C and echinacea tea

After you blow your nose, do you open the tissue and look? Although not many people talk about it, it's time to break that taboo and talk about the color of your snot. Snot is the everyday term for mucus that your nasal passages naturally produce. This mucus serves the purpose of trapping allergens, pathogens and dust that you inhale before they reach your lungs.

Snot is sticky and loaded with antibacterial and antiviral proteins your body uses to fight off germs. A 2016 paper called it an “understudied host-restriction factor for influenza virus.”¹ The mucus in your nasal cavity is made up of molecules called mucins that mix with water to form a gluey gel.

Mucus is the first line of defense in the respiratory system. Each day, your lungs manufacture roughly 100 milliliters, which is just over 3 ounces.² The mucus that comes up from your lungs is thicker and stickier than what's in your nose and is also known as phlegm.

This is nothing compared to the one liter (33.8 ounces) of mucus your nose and sinuses produce each day when you are healthy.³ When the mucus dries it becomes boogers. Picking boogers irritate the inside of your nose and one 2022 study⁴ published in Scientific Reports found there was an association between people who picked their nose and those who had a [higher risk of Alzheimer's disease](#).

If you have ever looked in a tissue after blowing your nose, you realize that the color of your snot can change when you are sick or suffering from seasonal allergies. The color of your snot is a good indicator of the health of your upper respiratory system.⁵

There Are Clues in the Color of Your Snot

Respiratory viruses first infect the nose and sinuses. Your sinuses are four paired air-filled, interconnected cavities within the skull.⁶ They are linked to your nasal passages and create mucus that flows into your nose. The sinuses also serve to warm and humidify the air you breathe before it moves into your lungs.

While the color of your mucus or snot gives you an indication of what's going on, it is the consistency with which it happens that is the best indicator. For example, snot may turn yellow or green during the initial stages of a cold, but it must stay green-colored for 12 or more days to indicate that the infection has moved into the sinuses.

The color of your snot is not the only indication of a sinus infection. Your doctor will use a physical examination and reports of symptoms that include fever, headaches, facial pain, nasal congestion, teeth pain and bad breath⁷ to diagnose a sinus infection. Did you know there are seven colors of snot you might have? These are the colors and what they may mean:⁸

Clear snot – This is an indication that nothing is going on in your respiratory system. However, excess clear snot could signal the beginning of a cold or a reaction to an allergen.

White snot – This could indicate dehydration, a nasal infection or a reaction to an allergen. Oftentimes when your snot is white you might be congested and have swollen, irritated nasal mucous membranes.

Yellow snot – This can indicate that you are fighting a cold or an infection. The color comes from dead white blood cells that your body is expelling. You may feel sick but do not necessarily need to see your doctor.

Green snot – The color of the mucus is caused by dead white blood cells and other cellular debris. It indicates your immune system is fighting hard against a viral pathogen. This is normal during a cold. However, if the color remains green for 12 or more days and you have other symptoms, it may be time to see your doctor as it could be a sinus infection.

Pink or red snot – The color comes from small amounts of blood released from dry, irritated or damaged nasal tissue. This can happen if you pick your nose, blow your nose aggressively or if the humidity in the room is consistently lower than 40%.

Brown snot – This color could be from dried blood or the result of inhaling colored dust particles. It's not an immediate cause for alarm but should resolve quickly and spontaneously. If you're coughing up brown mucus or consistently blowing brown mucus out of your nose, it may be time to see the doctor.

Black snot – This color can occur in smokers or drug users. If you suddenly begin blowing black snot, it could signal a fungal infection, which is a strong indicator to see your physician as soon as possible.

Allergy or Infection?

For some, it's easy to tell the difference between seasonal allergies and a mild cold. However, some individuals have such significant reactions to seasonal allergies that they may appear just as sick and miserable as if they had contracted a cold or flu.

Each of these conditions shares many of the same symptoms, such as a runny nose, cough and congestion. One of the significant differences is fever. People experiencing seasonal allergic reactions rarely have a fever while those who have a cold nearly always have a low-grade temperature.

Allergies and colds cause people to experience sneezing, runny or stuffy nose, headaches, coughing and fatigue.⁹ Seasonal allergies follow a pattern and symptoms tend to stick around longer than the 7 to 10 days of a normal cold virus.

Allergies usually cause a dry cough while a cold may produce a wet cough. Colds typically occur during the winter and spring months while allergies often show up during the spring and summer months when pollen is more prevalent. Interestingly, you can develop a sinus infection, middle ear infection and an exacerbation of your asthma with both a cold and seasonal allergy.¹⁰

Tips Help Lower Your Risk of an Upper Respiratory Infection

There are several strategies you can use to lower your risk of contracting an upper respiratory infection at any time during the year. Each of these strategies helps to support your immune system and promote good health.

- **Hydration** – Your nasal mucus¹¹ includes water so when you get dehydrated, your nasal mucus gets thicker and does not work as well. When you are dehydrated it is difficult for your body to transport the necessary nutrients to your organ systems and it slows lymphatic drainage of foreign invaders and waste material.
- **Humidity** – Scientists have known that cold and flu transmit more easily during the winter months when the humidity in the air is lower. Indoor heating contributes to

making the air dryer, and the author of a 2009 paper¹² wrote that past studies had demonstrated the virus survives better and is more easily transmitted in lower humidity.

A 2019 animal study showed that not only were the mice more susceptible to flu when housed in low humidity conditions, they also got sicker. The researchers concluded that “dry air impairs host defense against influenza infection, reduces tissue repair and inflicts caspase-dependent disease pathology.”¹³

- **Sleep** — Sleep and your circadian system exert a strong regulatory influence on immune functions.¹⁴ During sleep, there's an increased production of cytokines that contribute to recovery from illness and injury. Sleep may also strengthen immune memory and reinforce the system's ability to recognize and react to dangerous pathogens.

A modest amount of sleep loss can reduce the activity of natural killer cells by an average of 72% when compared to individuals who had a full night's sleep.¹⁵ When participant sleep was restricted to 4 hours for one night, there was an increase in the release of inflammatory cytokines that play a role in heart disease and metabolic disorders.

- **Gut microbiome** — Your gut microbiome is part of your antiviral defense. A 2020 article by Harvard Medical School reported on a recent study, writing:¹⁶

“The work ... pinpoints a group of gut microbes, and a specific species within it, that causes immune cells to release virus-repelling chemicals known as type 1 interferons. The researchers further identified the precise molecule — shared by many gut bacteria within that group — that unlocks the immune-protective cascade.”

- **Vitamin insufficiency** — A poor diet, excess weight and exposure to environmental toxins¹⁷ such as those you find in foods sprayed with pesticides, can depress your immune system and increase your risk of illness. Eating a poor diet also reduces your vitamin and nutritional intake which is linked to your immunity.

Diets that are high in ultraprocessed foods can negatively affect your immune system, as well as foods that are high in refined sugars and a diet low in fruits and vegetables. A deficiency of a single nutrient can alter the immune response, including deficiencies in zinc, selenium, iron, folic acid and vitamins A, B6, C, D and E,¹⁸ even when the deficiencies are mild.

Tips to Combat Viral Respiratory Illnesses

There are several natural strategies you can use to shorten the length of a cold.

Zinc lozenges – Zinc is an effective natural remedy that can shorten the common cold by an average of 33%.¹⁹ Zinc lozenges are most effective when started in the first 24 hours you experience symptoms.²⁰

Hydrogen peroxide – One of my favorite treatments for upper respiratory viruses, including SARS-CoV-2 that causes COVID-19, is nebulized hydrogen peroxide. The treatment is simple and effectively helps kill the virus in your respiratory tract. The video below demonstrates how to administer the treatment, which must use food-grade hydrogen peroxide and not the product you purchase in the grocery store.

Chicken Soup – Homemade chicken soup is soothing when you're sick, and it contains the amino acid cysteine²¹ that may thin the mucus in your lungs, so it clears more easily.²²

Vitamin C – Eating foods high in vitamin C may shorten the duration of your cold.²³ Food high in vitamin C includes red bell peppers, tomatoes, sweet potatoes, broccoli, kiwi and citrus fruits.

Echinacea tea – Echinacea is one of the more popular Native American medicinal plants that may help shorten your cold when you start drinking the tea on the first or second day. Researchers have found it will reduce the recurrence of a viral

infection.²⁴ Drinking two or three cups of hot tea a day may also help soothe a sore throat.

Propolis – This material is collected from trees by bees to maintain the hive. One study showed a propolis nasal spray improved children’s recovery from the common cold.²⁵

Sources and References

- ¹ Cell Host Microbe, 2016; 19(2)
- ² Science News Explores, February 20, 2019
- ³ MDLive, What Your Mucus Tells You About Your Health
- ⁴ Scientific Reports, 2022;12(2759)
- ⁵ Business Insider, December 5, 2022
- ⁶ Maryland ENT Center, What Are the Sinuses Responsible For?
- ⁷ American College of Allergy, Asthma & Immunology, Sinus Infection, Symptoms
- ⁸ PennMedicine, March 4, 2020
- ^{9, 10} NIH News in Health, October 2014
- ¹¹ University of California Irvine, April 13, 2020
- ¹² Science, February 9, 2009
- ¹³ PNAS, 2019;116(22)
- ¹⁴ Sleep Foundation, April 22, 2022
- ¹⁵ Centers for Disease Control and Prevention, Sleep and the Immune System
- ¹⁶ Harvard Medical School November 18, 2020
- ¹⁷ Harvard T.H. Chan School of Public Health, Nutrition and Immunity
- ¹⁸ The American Journal of Clinical Nutrition, 1997;66(2)
- ¹⁹ JRSM Open, 2017;8
- ²⁰ Journal of the American Pharmacists Association, 2004;44 Data Synthesis
- ²¹ My Food Data, November 10, 2019
- ²² Daily Mail, December 23, 2015
- ²³ Oregon State University, Vitamin C, Common Cold section
- ²⁴ Advances in Therapy, 2015;32(3)
- ²⁵ Journal of Biological Regulators and Homeostatic Agents, 2017;31(4)