MERCOLA
Take Control of Your Health

9 Things You May Not Know About Mucus

Analysis by Dr. Joseph Mercola | December 15, 2023

STORY AT-A-GLANCE

- Most people don’t talk about mucus, which can lead to not knowing enough about how it is essential to your overall health. It's a good idea to know about this protective barrier and how it helps your respiratory system
- Mucus is composed of a water substance and a sticky substance, which together act a little like flypaper to capture dirt, debris and pathogens, and sweep them into your stomach where enzymes inactivate them before being eliminated through the digestive tract
- You produce roughly 1 1/2 quarts (48 ounces) of mucus or snot each day, most of which is swept to the back of your throat and swallowed. The color is influenced by what it captures and whether you have an upper respiratory infection
- Your nose can "run" when you’re outdoors and cold or when there is an inflammatory response from an infection or allergies. The "stuffiness" you experience is not from mucus but rather from swollen nasal turbinates that may respond to steam, humidity or essential oils like peppermint or eucalyptus
- Don't use Afrin to relieve congestion as it is physically addictive and the focus of structured addiction rehabilitation programs. Instead, take steps to take care of your respiratory system by staying hydrated, maintaining indoor humidity between 40% and 60% and promoting a healthy gut microbiome as part of your viral defense

Most people don’t talk about nasal mucus, which may mean that they don't have a lot of information about how integral it is to health. In addition to producing mucus, your nasal

cavity also has its own microbiome that helps provide natural protection against pathogens.[1] For example, one paper[2] notes that the anterior nares of up to 80% of people are colonized with Staphylococcus aureus.

Your upper respiratory system utilizes both your mouth and nose to pull air in from the outside. Your sinuses are hollow areas, located between the bones in your head that help regulate the temperature and humidity of air when you inhale. Your pharynx is the tube that delivers air from your mouth and nose into your windpipe, also called the trachea, which is a passage that connects your throat or pharynx to your lungs. Mucus plays a role in each of these structures.

Do You Know These 9 Things About Your Mucus?

After you blow your nose, do you open the tissue and look? You might be surprised by what you find. There's a lot you can learn from your mucus as BBC Earth Lab describes in this short video. NIH News in Health calls it "the slime that keeps you healthy."[3] Mucus provides an interface between the inside of your body and the outside world.

It's a lubricant that keeps tissue from drying out and provides a line of defense against pathogens, dirt, debris and other environmental toxins. Joseph Stromberg, a reporter for Vox,[4] took a deep dive into mucus and spoke to an ear, nose and throat surgeon who offered the following on mucous trivia.

1. **The amount of mucus you produce —** Did you know that you produce roughly 1.5 quarts (48 ounces) of mucus every day?[5] When your body is working well, tiny cilia hairs in your nasal passage move the mucus to the back of your throat and you swallow it.

   Your body also secretes mucus along your trachea and other areas in your lungs, where the name is technically changed to "phlegm." Michael Ellis, an ear nose and throat doctor from Tulane University told Stromberg, "You're swallowing, on average, twice a minute — even when you're sleeping at night."[6] That's a lot of snot!

2. **Pathogens and debris —** Snot is sticky and loaded with antibacterial and antiviral proteins that your body uses to fight off pathogens. It's the first line of defense in the respiratory system. A 2016 paper called it an "understudied host-restriction factor for influenza virus."[7] The mucus in your nasal cavity is made up of sticky molecules called mucins that mix with water to form a gluey gel.

   Ellis calls snot the body's flypaper, "Debris that comes into the nose or throat sticks to it, and then you swallow it, so it doesn't get into your lungs."[8] In other words, your snot helps filter a mixture of dust, pollen, pathogens, and other debris you inhale, which you swallow and enzymes in your stomach then render them inactive.

3. **Why it runs —**Your body produces the same amount of sticky mucus but can increase the amount of watery substance that is produced during an inflammatory response.[9]

   Inflammation from a cold or allergies can increase the amount of serous fluid (watery substance) produced, which results in a runny nose. When you take an antihistamine, it reduces the amount of water, but not the amount of mucus, so the mucus gets thicker and dryer. When you're outside in the cold, the tiny cilia hairs become less active, so mucus is not swept to the back of your throat but instead drips out of your nose.

4. **Snot doesn't make you stuffy —** Seasonal allergies and colds can also trigger a stuffy nose, which is not the result of a buildup of mucus, but rather swelling in response to inflammation or dry conditions.[10] The swelling happens along the nasal turbinates that line the nasal cavity.

   When these swell from inflammation or become congested with blood during an upper respiratory infection, it causes respiratory congestion. In some instances, you may be born with slightly larger turbinate tissue that, when removed, improves your ability to breathe.[11] The surgery is relatively common, but in some instances, the tissue can grow back.

5. **Effective decongestant —** Before taking nasal decongestants such as phenylephrine or pseudoephedrine, it helps to consider other strategies. These medications can dry out your nasal cavity as well as thicken the mucus, which is an excellent place for bacteria to grow, potentially leading to dysbiosis, a disruption of the microbiome.[12]

   Instead, try adding hot moist air to your environment by using a humidifier or taking a hot shower to decrease the swelling in the nasal turbinate.[13] Or, simply **use a saline nasal irrigation** several times a day.

   Sometimes a hot washcloth or facial steamer can also help. If you have a steamer that will accommodate essential oil, consider adding peppermint or tea tree oil to help reduce inflammation in the sinus passages.[14] Another option is pairing eucalyptus oil with coconut oil and rubbing that over your chest, which can help relieve head and chest congestion.

6. **You might be dehydrated —** When the mucus gets thicker, it may indicate that you are dehydrated,[15] since your body will conserve water where it can. When the environment is dry, such as during the winter months or in an air-conditioned environment, it can also cause an excess amount of the serous fluid to evaporate, which in turn thickens your mucus.

7. **What are boogers? —** As you may have already guessed, when your mucus dries in your nose, it becomes too thick for the cilia to move to the back of your throat. As it becomes crusty, it becomes what has colloquially been called boogers.

   Whether you care to admit it or not, one small study[16] found 91% of respondents picked their noses, and another 2023 study[17] found 84.5% of health care workers owned up to picking their noses, at least incidentally, with time frequencies varying between daily and monthly.

   This behavior may be linked to an increased risk of **developing Alzheimer's**. A 2022 study[18] published in Scientific Reports linked a bacterium with infection in the

central nervous system, which researchers believe ultimately contributes to a higher risk of Alzheimer's disease.

The bacterium tracked was Chlamydia pneumoniae, which the researchers found reached the brain by traveling along the olfactory nerve. The bacteria triggered amyloid beta protein deposits, which is a known hallmark of Alzheimer's disease.

8. **What the color means —** The color of your snot can give you clues about your health, but not all green or yellow-colored snot means you have an infection. Even seasonal allergies can change the color of your nasal mucus and cause you to have a runny nose.

   The mixture of environmental debris you inhale can change the color of your mucus. Did you know there are seven colors of snot you might have? These are the colors and what they could mean:[19]

   Clear snot — This indicates that nothing is going on in your respiratory system. But 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.

   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.

   Green snot — This color is caused by dead white blood cells and other cellular debris. It indicates your immune system is fighting against a viral pathogen. This is normal during a cold. Green can also be an indication of bacterial infection.[20] If it persists for more than a week or is accompanied by high fever it may require antibiotics.

   Pink or red snot — This 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.

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9. **Afrin: Nose heroin —** The active ingredient in the nasal decongestant spray Afrin is oxymetazoline, which Ellis states is "... not just habit-forming, it's totally addictive, because the lining of the nose becomes completely dependent on it."[21] The drug works by cutting down the blood supply to the nasal turbinate.

   But once it wears off, the turbinates swell even larger than they were before, causing many people to become dependent on the drug. "Once you start spraying, you can't stop," Ellis says. "If you go more than three or four days, the nose becomes so dependent on it that it's almost like heroin."[22]

   The bottle does have a warning in fine print that people should not use the medicine for more than 3 days. But so many people miss the warning that there are structured recovery programs around the world specifically for those needing help with their nasal spray addiction.[23,24]

Steps to Take Care of Your Respiratory System

There are steps that you can take to help lower your risk of contracting an upper respiratory infection, which raises your mucus production. Each of these strategies also helps to support your immune system and promote good health. You can read more about these strategies at "**Does Green-Yellow Snot Mean You Have a Sinus Infection?**"

- Maintain adequate hydration.
- Ensure indoor air has a humidity between 40% to 60%.[25]
- Get seven to eight hours of quality sleep each night to support your immune function.
- Promote a healthy gut microbiome as part of your viral defense.
- Pay special attention to your nutrition to ensure adequate vitamin sufficiency of a combination of nutrients that can alter your immune response.

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