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NASAL & SINUS HYGIENE (7/13)

This information should help you understand how the nose and sinuses work so that you can maximize the beneficial effects and minimize problems.

Function of the Nose:
A healthy nose is open on both sides. The three most important functions of your nose are to humidify the air you breathe, filter out airborne particles (pollutants, pollen, etc), and warm the air to body temperature. It also lets you smell and taste the food you eat.

The lining of the nose and sinuses normally produce about 2 quarts of liquid mucus each day, which aids in keeping the entire respiratory passage clean, warm, and moist. A conveyor belt of millions of tiny beating hairs called *cilia* move the mucus (along with dirt particles, inactivated bacteria, and viruses) against gravity out of your sinuses and nose. It is then swept towards the back of the throat, where the mucus with germs is swallowed and destroyed by your stomach acid.

Background Information:
When the vital functions of humidifying, filtering, and warming are stressed, the nose responds by swelling. This increases contact time between the air and mucous. It also increases the amount of mucus produced.

The ideal humidity for your nose is 40-60% relative humidity. Your nose is responsible for humidifying the air you breathe to 100% relative humidity for your lungs. Unfortunately, forced air heating during the winter really dries out this air. As a result, the drier the air you breathe, the more nasal congestion occurs.

Excessive dryness inside the nose causes the delicate cilia to stop working and also makes the nose more susceptible to viruses. This is common during the winter months, when many homes and offices are warmed by forced air heating. Many medications (antihistamines, decongestants, diuretics, antidepressants, etc), caffeinated beverages (coffee, tea, cola, etc), and alcoholic beverages result in dryness. When the nose is not properly functioning, excessive moisture is lost by mouth breathing. Sometimes it is thick tenacious mucus that gives the sensation of "excessive" postnasal drip when, in fact, there is a problem with not enough secretions.

The nose filters a tremendous amount of airborne particles each day. Particles which trigger an allergic reaction in only a portion of the population are called allergens (dust mites, grass, molds, trees, animal hair, etc). Other particles (cigarette smoke, pollution, dust, etc) irritate everyone's nasal linings and therefore should be avoided. Nothing is more effective as removing the source of the problem.

Living with a problem nose can be frustrating, but you can make it easier by giving your nose proper care and avoiding unnecessary irritation at home and at work. Fortunately, even troublesome noses can get back into working condition with good nasal hygiene. This care is directed at promoting moisturization and normal clearance of excess mucus from nose and sinus linings.

Nasal Hygiene Suggestions:
- Drink 8-10 glasses of water each day.
- Avoid caffeinated and alcoholic beverages.
- Use preservative free nasal moisturizers (Table 1). Benzalkonium chloride (a commonly used nasal spray preservative) should be avoided since it may cause rebound nasal swelling with prolonged use.
- Avoid the certain medications (Table 2) which dry nasal membranes, such as decongestants.
- Perform nasal saline irrigations twice a day or more (see *Nasal Saline Irrigation* handout).
- Use mucous thinning agents (guaifenesin, plain Robitussin®) for thick mucus.
- Keep the home thermostat at or below 65 degrees.

- Use a humidifier or vaporizer (clean it regularly to prevent mold buildup).
- Use a home air cleaner with a high efficiency particulate filter and change disposable filters regularly.
- If you have a central heating/air-conditioning system with a humidifier and/or air cleaner, set the fan switch to the "On" position, rather than the "Auto" position to improve filtration and humidification.
- Follow environmental control measures for allergies (Table 3).
- Quit smoking and/or avoid tobacco smoke.
- Exercise daily.
- Eat a balanced diet with supplemental vitamins, especially Vitamin C.
- Wash your hands regularly.
- Avoid daycare (for children).
- Sleep with your head elevated 30 degrees.
- Breathe Right® nasal strips (improves nasal breathing when congested).
- Antibiotics as prescribed for bacterial infections of the sinuses.
- Steroid sprays as prescribed (see *Nasal Steroid Spray* handout).

Table 1: Nasal Moisturizers (Preservative free is preferable)

Nasal Moisturizers	Brand names	Instructions	Distributor
Yerba Santa/saline spray	Pretz Spray®	2 sprays each nostril as often as needed.	800-457-4276
Saline nasal spray	Natru-Vent®	2 sprays each nostril as often as needed.	N/A
Nasal saline gel		Apply to inside of nostrils as often as needed.	N/A
Nasal emollient (used by NASA)	Ponaris®	Apply to inside of nostrils morning and night.	201-262-6363
Petroleum jelly	Vaseline®	Apply to inside of nostrils morning and night.	N/A

Table 2: Medications causing nasal dryness.

Preparations	Common Brand Names	Reason to Avoid
Nasal decongestant sprays	Afrin®, Dristan®, Neosynephrine®, etc	Continued use (>3 days) causes dependence and rebound swelling. Dries out the nose and sinuses, thickens mucus, and slows down the cilia. Helpful during the first few days of a common cold.
Oral decongestants	Entex®, Sudafed®, Actifed®, etc	Dries out the nose and sinuses, thickens mucus, and slows down the cilia. Helpful during the first few days of a common cold.
Sedating (Non-Prescription) Antihistamines	Tavist®, Benadryl®, ChlorTrimeton®, Antivert®, etc	Dries out the nose and sinuses, thickens mucus, and slows down the cilia. No benefit in treatment of the common cold. Beneficial only for allergic nose swelling.
Antidepressants	Prozac®, amytriptyline, etc	Dries out the nose and sinuses, thickens mucus, and slows down the cilia.
Diuretics	Lasix®, Diazide®, hydroclorothiazide, etc	Dries out the nose and sinuses, thickens mucus, and slows down the cilia.

Table 3: Environmental control measures for allergies.

General Measures	Specific Measures
General household measures	Dust and vacuum frequently. Cotton (not nylon) mop to gather (not spread) dust. Avoid dust-collecting interior furniture, nonsynthetic drapes, and shag rugs. Use high efficiency particulate air filters on vacuum cleaners. Use air conditioner during peak pollen months.
Bedroom measures	Remove all rugs, non-synthetic drapes, overstuffed furniture, dust-collecting books and toys. Use synthetic foam pillows. Cover box spring and mattress with plastic liners. Keep bedroom window closed during allergy season. Remove pets (particularly cats).
Mold control	Remove houseplant. Clean bathroom crevices and grout with mold-killing cleanser. Use mold killing agents when able. Clean humidifiers regularly as recommended by the manufacturer.