



# So You've Got a Cold?

How to navigate  
the cold and flu season

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# What is a “Cold”?

VIRAL Upper Respiratory infection (URI)

- Nose, Mouth, Throat, Large Airways

Mild and Self-Limited

- Symptoms last 3-10 days, viral shedding peaks on day 3-5

Culprits/Causes - URI's are caused by MANY different types

- **Rhinovirus** (100 subtypes, 30-50% of URI's), **Coronavirus** subtypes (10-15%), **Parainfluenza/Influenza** Virus (5-15%), **Respiratory Syncytial Virus** (5%)

Vaccines available for **SARS-COV-2**, Seasonal **Influenza**, (coming soon = **RSV**)



# Immune System 101



The Players: T-cells, B-cells, Macrophages, Mast Cells, etc..

Foreigner invader (virus) → recognized as “foreign” and “dangerous” by our immune system → defensive tactics employed

Immune cells release *cytokines*, *pyogens*, *prostaglandins*, and other molecules to recruit and fight off invaders - this can cause inflammation, mucus secretion, and generate fever.

These tactics equate to the misery we experience when sick.

# Symptoms of a URI (Common Cold)

- 1) **Inflammation** - sore throat, congestion (nose and chest), body aches
- 2) **Fever**
  - a) A response to *pyogens* released by: damaged tissues, the immune cells, and even the pathogens themselves.
  - b) The resetting of the thermoregulatory center of the brain (*hypothalamus*) - raises the core body temperature.
- 3) **Histamine release** - watery, itchy eyes, sneezing (also triggered with allergies)
- 4) **Mucus production** - released by inflamed tissues, protective also
- 5) **Cough** - Protective reflex, can be prolonged

**Resolution of a cold results from allowing the immune system to do its job: (rest, fluids, patience)**

# The Cold and Flu Aisle at the Pharmacy



## Decongestants: “D”, “Sinus”

- *Pseudoephedrine* (behind the counter), *Phenylephrine* (OTC)
- Relieves inflammation in the soft tissues of the sinuses, nasal cavity, eustachian tubes, etc...
- Stay hydrated

## Antihistamines: “Allergy”

- Drowsy - Older generation, *Diphenhydramine* (Benadryl), *Chlorpheniramine* versus...  
Non-Drowsy - Newer, *fexofenadine* (Allegra), *cetirizine* (Zyrtec), *loratadine* (Claritin)
- *Rarely effective when used alone for a URI (needs to be used in conjunction with a decongestant)*





# Sinus PE + Allergy

CHLORPHENIRAMINE MALEATE - Antihistamine  
PHENYLEPHRINE HYDROCHLORIDE - Nasal decongestant

## MAXIMUM STRENGTH

### Relieves:

- Sinus pressure & Congestion
- Sneezing
- Itchy eyes
- Runny nose



Actual Size

24 TABLETS UNCOATED



### Drug Facts

KEEP OUTER PACKAGE FOR COMPLETE  
PRODUCT INFORMATION

#### Active ingredients (in each tablet)

Chlorpheniramine maleate 4 mg ..... Antihistamine  
Phenylephrine HCl 10 mg ..... Nasal decongestant

#### Purpose

- drowsiness may occur ■ avoid alcoholic beverages
- alcohol, sedatives and tranquilizers may increase drowsiness
- use caution when driving a motor vehicle or operating machinery

#### Uses

- temporarily relieves these symptoms due to hay fever (allergic rhinitis) or other upper respiratory allergies: ■ runny nose ■ sneezing
- itching of the nose or throat ■ itchy, watery eyes
- sinus congestion and pressure ■ nasal congestion

#### Stop use and ask a doctor if

- nervousness, dizziness, or sleeplessness occur
  - symptoms do not improve within 7 days or occur with a fever
- If pregnant or breast-feeding, ask a health professional before use.  
Keep out of reach of children. In case of overdose, get medical help or contact a Poison Control Center right away.

#### Warnings

Do not use if you are now taking a prescription monoamine oxidase inhibitor (MAOI) (certain drugs for depression, psychiatric or emotional conditions, or Parkinson's disease), or for 2 weeks after stopping the MAOI drug. If you do not know if your prescription drug contains an MAOI, ask a doctor or pharmacist before taking this product.

- Ask a doctor before use if you have
- high blood pressure
  - heart disease
  - thyroid disease
  - diabetes
  - glaucoma
  - difficulty in urination due to enlargement of the prostate gland
  - a breathing problem such as emphysema or chronic bronchitis

Ask a doctor or pharmacist before use if you are taking sedatives or tranquilizers.

- When using this product
- do not exceed recommended dosage
  - excitability may occur, especially in children

#### Directions

- adults and children 12 years and over: take 1 tablet every 4 hours. Do not take more than 6 tablets in 24 hours.
- children under 12 years: do not use

#### Other information

- TAMPER EVIDENT: DO NOT USE IF OUTER PACKAGE IS OPENED OR BLISTER IS TORN OR BROKEN
- store at 25°C (77°F); excursions permitted between 15°-30°C (59°-86°F)
- see end flap for expiration date and lot number

**Inactive ingredients** croscarmellose sodium, lactose anhydrous, magnesium stearate, microcrystalline cellulose, silicon dioxide, stearic acid

**Questions or comments?** 1-800-426-9391

# “Cough” Medicines



**Cough suppressants** - “DM” (*dextromethorphan*), *Codeine*, *Benzonatate (Tessalon)*

- Control the *cough reflex*
- Better for DRY cough
- **Codeine, Tessalon** - need Rx

**Cough expectorants** - *Guaifenesin (Mucinex, Robitussin)*

- Thinning the mucus so you *cough more easily*
- Better for a productive cough
- Also good for thinning out mucus in sinuses (notice a more runny nose)



# Anti-inflammatory/ Anti-pyretic Medications “Pain”, “Headache”, “Fever”



Targets *Prostaglandins* - created in damaged/inflamed tissues, mediates pain and fever

**Acetaminophen** (first synthesized in 1878, first used in 1893)

- i) Still somewhat of a mystery how it works
- ii) Inhibits production of prostaglandin in the *central nervous system* - BOTH pain receptors in the brain and hypothalamus receptors (thermoregulatory)

**Ibuprofen/Aspirin** - fever reducer, pain reliever, anti-inflammatory

- iii) Stops the injured muscle from making/releasing prostaglandins
- iv) Probably: altering immune cell function, and decreasing proinflammatory cytokine levels.

# Nasal Sprays

- a) **Steroid-based** (OTC)  
(Flonase, Nasacort, etc)
- b) **Antihistamine-based** (Rx)  
(Olopatadine, Azelastine)
- c) **Cromolyn-based** (OTC) - Mast cell stabilizers  
(NasalCrom)
- d) **Decongestant-based** (OTC)  
(AFRIN) - use with caution
- e) **Saline-based** (salt water)
- f) **Atrovent/Ipratropium** (Rx) - best for runny nose (rhinorrhea)



# Airway “Cooling” + “Natural” Products

Humidifier, Menthol, Vicks Vapo-Rub, targets *inflammation* → inconsistent data, no real benefit



# What REALLY Works?

## Most Benefit

*Combination* antihistamine and decongestant (NOT antihistamine alone)

Analgesics (Tylenol, ASA, or Advil)

NasalCrom (nasal cromolyn) - OTC

Atrovent/Ipratropium Nasal spray (Rx, best for rhinorrhea)

## Moderate Benefit

Nasal saline

Cough Medicines -  
Suppressants/Expectorants

Decongestants

Honey, especially in children (use after age 1)



Adobe Stock / 123254948

# What DOESN'T Work

- 1) Antihistamines
- 2) Steroid nasal sprays
- 3) Vitamins (except for chronic use of vitamin C?)
- 4) Zinc - beware of the intranasal form of this, can cause permanent loss of smell
- 5) Herbs (elderberry, echinacea) - for treatment or prevention
- 6) Antivirals - for use with the standard “common cold” viruses
- 7) Antibiotics - more harm than good



# Special Considerations

- **Hypertension** - avoid decongestants (Pseudoephedrine/Phenylephrine); consider “Coricidin products”
- **Glaucoma** - avoid decongestants, steroid nasal sprays, and many antihistamines (Chlorpheniramine, Diphenhydramine or Benadryl)
- **Prostatic Hypertrophy (BPH)** - avoid decongestants and many antihistamines
- **Kidney Stones** - avoid expectorants
  - Guaifenesin





# Complications from URI's/Colds

Bacterial Sinusitis

Pneumonia

Otitis Media/Ear infections

Asthma/COPD Exacerbations



# How To Prevent URI's

- 1) **Hand washing** - Definitely
- 2) **Vitamin C** - maybe (need to be used for a long period of time)
- 3) **Probiotics** - maybe
- 4) **Exercise** - maybe, probably
- 5) **Sleep** - maybe, probably
- 6) **Montelukast/Singulair** (studied in patients with asthma only) - some benefit
- 7) **Gargling with salt water** - maybe



## True/False #1

Being outside in the cold weather can make you sick/give you a cold.

FALSE

## True/False #2

You should feed a cold, and starve a fever.

FALSE

## True/False #3

You can get sick (the flu) from getting the flu shot.

FALSE

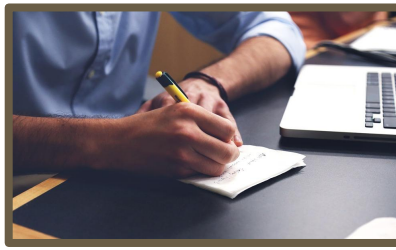
## True/False #4

My mucus is green - It must be a bacterial infection.

FALSE



# In Summary



- Colds are usually **self-limited** (3-10 days) and easily managed at home.
- Symptoms are mostly caused by our own **immune system** responding to the virus
- Mainstays for treatment are: **rest, fluids**, and other **supportive care** measures, including pain/fever reducers (NSAID's/Tylenol).
- **Cold Medicine treatments** that work the best are:
  - Decongestant/antihistamine preparations
  - NasalCrom nasal spray
  - Honey (especially in children above the age of 1)
- **Wash your hands** (a lot) to prevent spreading and getting a cold
- See your health care provider for colds that last more than 10 days that are not getting better, or if you have a severe cough/wheeze/shortness of breath

# Questions/Comments?

Thanks for listening!

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