

Respiratory Tract Infections and other Ailments, Part 1

Respiratory Tract Anatomy and some statistics

In humans the respiratory tract is the part of the anatomy that has to do with the process of respiration.

The respiratory tract is divided into 3 segments:

- ▶ Upper respiratory tract: nose and nasal passages, paranasal sinuses, and throat or pharynx
- ▶ Respiratory airways: voice box or larynx, trachea, bronchi, and bronchioles
- ▶ Lungs: respiratory bronchioles, alveolar ducts, alveolar sacs, and alveoli

Gas exchange

- ▶ Most of the respiratory tract functions as a piping system for air to travel in the lungs
 - ▶ alveoli are the only part of the lung that exchanges oxygen and carbon dioxide with the blood.
- ▶ The respiratory tract is a common site for infections. Upper respiratory tract infections are probably the most common infections in the world (Average 2.5 billion colds/year in the U.S.
- ▶ In families with children in school, the **number of colds per** child can be as high as 12 a **year**. Adults **average** about 2 to 4 **colds** a **year**, although the range varies widely. Women, especially those aged 20 to 30 **years**, have more **colds** than men, possibly because of their closer contact with children.

Part 1: Symptoms

- Sore Throat, typically from viral infection and inflammation of pharynx (pharyngitis) and nasal cavity.
 - Etiology—loss of sleep, presence of pathogens, cold and damp weather, stress
 - TCM etiology, dx—seasonal invasion of surface level with pathogenic wind-cold or wind-heat; in first stages, often normal; when pathogen penetrates further and the lung system is affected, could be yellow or white thick coating, red tongue, etc.
 - Medical treatment—best rest, fluids, sleep, palliative OTC preparations like antihistamines, cough syrups, lozenges, Tamiflu, etc.
 - Herbal treatment—kava, Echinacea, spilanthes sprays or tinctures; sage leaf tea; garlic syrup with active antivirals and antibacterials to coat the throat (garlic syrup).

Cough

- Etiology—throat irritation, inflammation and congestion from viral or bacterial infection typically; other irritation like excessive talking, singing, throat strain.
- TCM etiology, dx—excess heat and damp, invasion by wind cold, wind heat.
- Medical treatment—antitussives in cough syrups, lozenges containing OTC ingredients like dextromethorphan (Robitussin); expectorants like guaifenesin; pain relievers with codeine.
- Herbal treatment—antispasmodics like California poppy, kava, chamomile, yarrow and mugwort (sesquiterpenes); antitussives like wild cherry bark, loquat leaf, eucalyptus oil steam, drops; thyme tea; sage leaf tea, etc.

Nasal Congestion

- Etiology—release of histamine, inflammation, congestion, mucus discharge in response to viral or bacterial infection; also in response to airborne allergens; chemical irritants (synthetic perfumes, etc.)
- TCM etiology, dx—spleen Qi deficiency with dampness, and when combined with heat, phlegm; invasion by wind-cold or wind-heat pathogen (seasonal).
- Medical treatment—decongestants that are sympathomimetics like Sudafed (contains pseudoephedrine).
- Herbal treatment—For at least 2,000 year, ma huang or *Ephedra* spp. (not all species has ephedrine and pseudoephedrine; cocklebur fruit [cang er zi]; magnolia bud.
 - Note: blue dragon and minor blue dragon are traditional remedies containing ma huang + licorice, cinnamon twig, pinellia, and wild ginger (see table 1 at the end). Note: *Major Blue Dragon* is more for influenza and lung infections with heat (ma huang, apricot seed, cinnamon twig, gypsum, licorice, fresh ginger. Promotes diaphoresis, releases the exterior, clears interior heat).

Myalgia

- Etiology—Release of lactic acid and other products of immune system activity against pathogens.
- TCM etiology, dx—penetration of exogenous wind-heat and wind-damp to muscle level.
- Medical treatment—aspirin, other NSAIDs; analgesics like acetaminophen, etc.
- Herbal treatment—blood movers; lavender, rosemary, ginger, camphor leaf baths. White flower oil, other essential oil + fixed oil external applications (salves, oils).

Fever

- Etiology—increased heat to discourage viral growth, sweat to expel pathogen is part of our immune response.
- TCM etiology, dx—invasion of pathogen by wind-cold and wind-heat; clear and dispel heat or cold; dispel wind.
- Diagnostic—signs of excess condition; tongue can be normal or with yellow or white coating that is thicker than usual. Signs of spleen Qi deficiency means possible immune weakness.
- Medical treatment—non-steroidal antiinflammatory drugs (aspirin, ibuprofen-Advil, naproxen, etc).
- Herbal treatment—salicylate-containing herbs such as willow bark extract, tea, meadowsweet; also flavonoid-containing antivirals, anti-inflammatories like elder flower tea, yarrow, linden blossom, etc.

Fatigue

- Etiology—Immune weakness due to invasion by pathogen, buildup of cellular debris from immune destruction of diseased cells, etc.
- TCM etiology, dx—spleen Qi deficiency; invasion by heat or cold pathogen; lung Qi deficiency.
- Diagnostic—signs of spleen or lung Qi deficiency; signs of diagnosed URI; fever, loss of appetite (anorexia).
- Medical treatment—bed rest, ?
- Herbal treatment—ma huang; spleen, lung Qi tonics with caution

Active Categories

- Antibacterial: berberine-containing herbs, oregano, thyme oil
- Antihistamines: eucalyptus oil
- Antiinflammatory: berberine, turmeric, ginger, bromelain
- Antinauseant: ginger, lavender
- Antipyretic: willow bark extract, meadowsweet
- Antispasmodic: California poppy extract, thyme herb; loquat or wild cherry

- Antitussive: coltsfoot herb, loquat leaf, wild cherry bark
- Antiviral: andrographis, elderberry fruit, shiitake, reishi, thuja leaf, wild indigo root
- Bronchodilator: ma huang (can't beat it)
- Calmative: California poppy, kava, valerian, skullcap
- Decongestant: cang er zi, magnolia buds, ephedra
- Demulcent: marshmallow root, plantain leaf, barley tea
- Diaphoretic: elder flower, yarrow herb, peppermint leaf, cayenne
- Expectorant: poplar buds, pine bark, yerba santa, grindelia, licorice; platycodon; fritillary bulb
- Immunomodulators: medicinal mushrooms, astragalus, Echinacea, wild ginger
- Mucolytic: primula root, ivy tips
- Anodyne (Sore throat): kava, sage leaf

Respiratory Herbs by Energy

Cool, Cold

- Andrographis
- Usnea
- Iceland moss
- Lungwort
- Baptisia
- Blue vervain
- Life everlasting (*Gnaphalium* spp.)
- Elder fruit, flowers

Warm, Hot

- Ginger
- Yerba santa
- Grindelia
- Cinnamon
- Eucalyptus
- Thyme
- Ground ivy
- Skunk cabbage
- Yerba mansa
- Osha
- Elecampagne

Table 1 Minor Blue Dragon

【Indications】

Traditional:

Affliction of wind-cold with internal phlegm-retention marked by chills, fever, anhidrosis, asthmatic cough or labored breathing, watery phlegm, a sensation of fullness and discomfort in the chest, and thirst; or body aches, decreased urination, generalized edema, a white and slippery tongue coating, and a superficial pulse.

Modern:

Common cold, influenza, bronchial asthma, acute or chronic bronchitis, allergic rhinitis, whooping cough, pneumonia, pulmonary edema, cor pulmonale, pleuritis, and acute nephritis.

【Herbs and Actions】

Monarch	{	Ma-huang	—	} induces sweating to release the exterior, facilitates the flow of Lung <i>qi</i> , and arrests coughing and wheezing	}	pungent, warm, and dry in nature	}	releases the exterior without damaging Lung <i>qi</i> , warms the Lungs and without damaging Lung <i>yin</i>
		Cinnamon twig	—					
Minister	{	Asarum	}	} expel cold, warm the interior, and eliminate phlegm	}	}	}	}
		Ginger						
Assistant	{	Schizandra	—	} astringes Lung <i>qi</i> , with its sour taste and warm property	}	}	}	}
		Peony	—					
Guide	-	Pinellia	—	transforms phlegm and directs rebellious <i>qi</i> downward	}	}	}	}
		Licorice	—	strengthens <i>qi</i> and harmonizes the action of other ingredients				