

विश्व अस्थमा दिवस



Bronchial Asthma

PRESENTED BY

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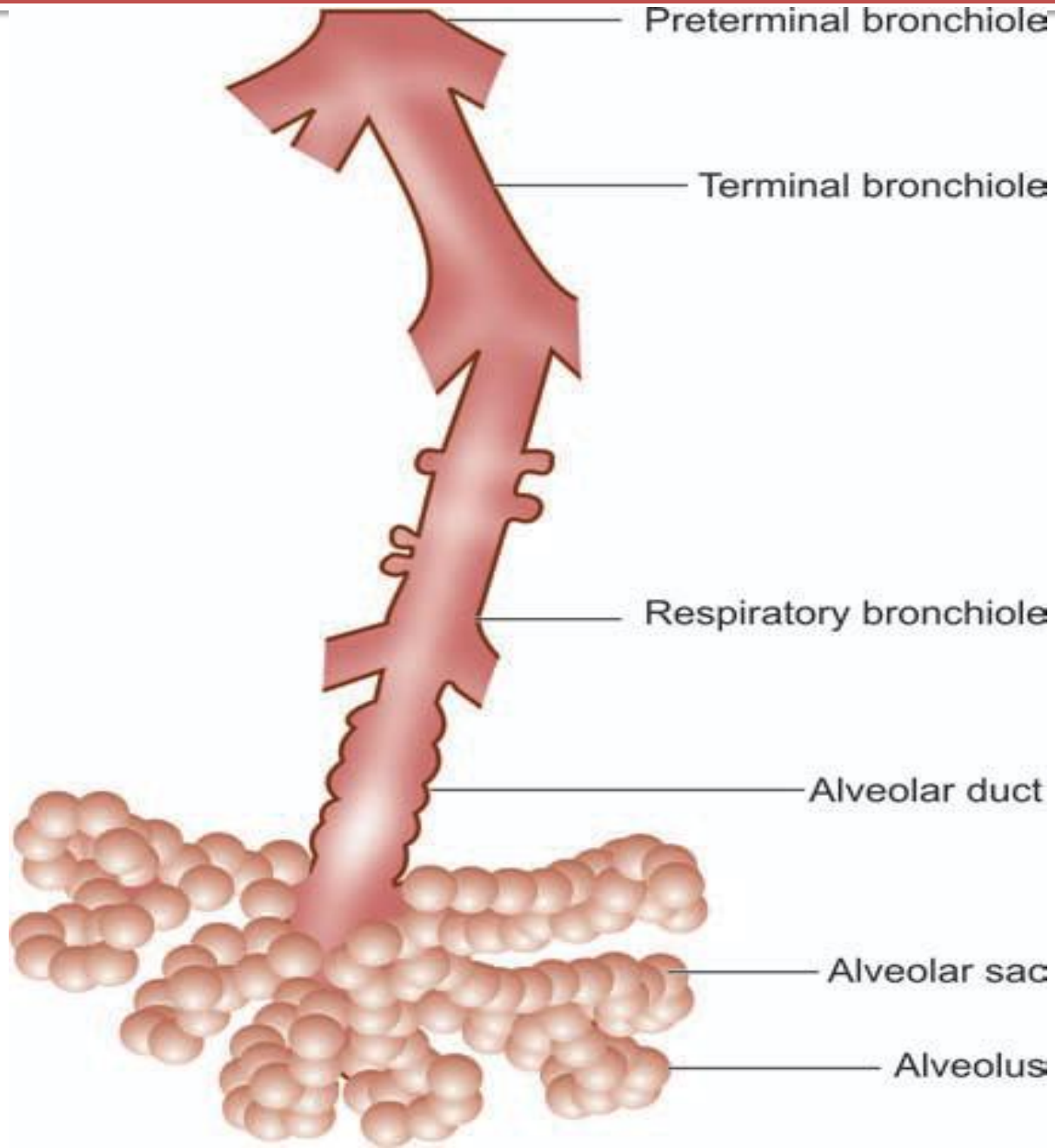
WORLD
ASTHMA

DAY

CHRONIC OBSTRUCTIVE PULMONARY DISEASE(COPD)

- **A GROUP OF PATHOLOGICAL CONDITIONS IN WHICH THERE IS COMPLETE OR PARTIAL OBSTRUCTION TO THE AIRWAY AT ANY LEVEL FROM TRACHEA TO THE SMALLEST AIRWAY RESULTING IN FUNCTIONAL DISABILITY OF THE LUNGS.**

NORMAL ACINUS



- In COPD, less air flows in and out of the airways because of one or more of the following:
- The airways and air sacs lose their elastic quality.
- The walls between many of the air sacs are destroyed.
- The walls of the airways become thick and inflamed.
- The airways make more mucus than usual.

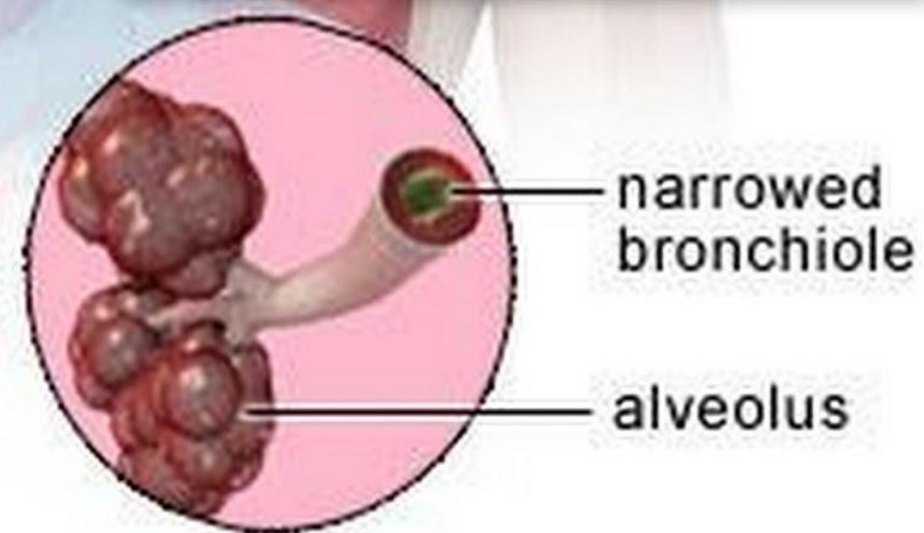
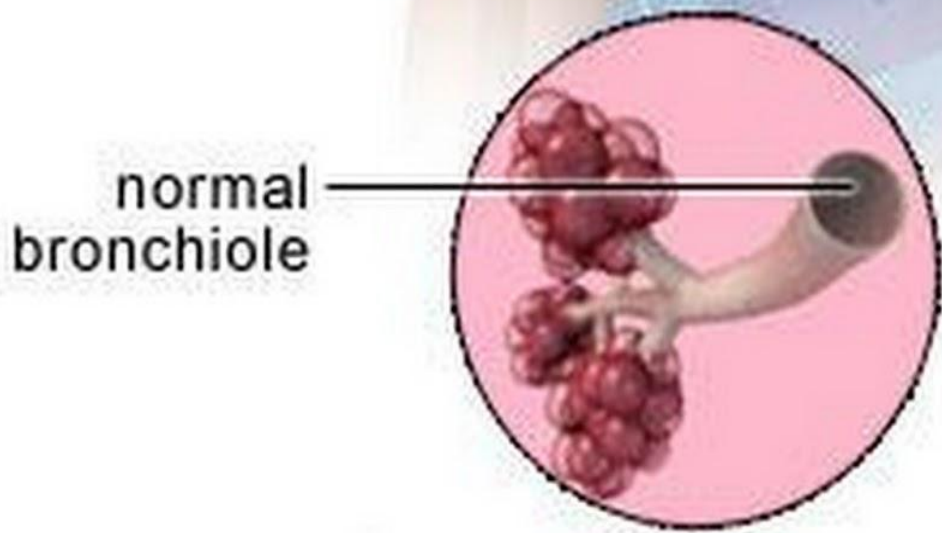
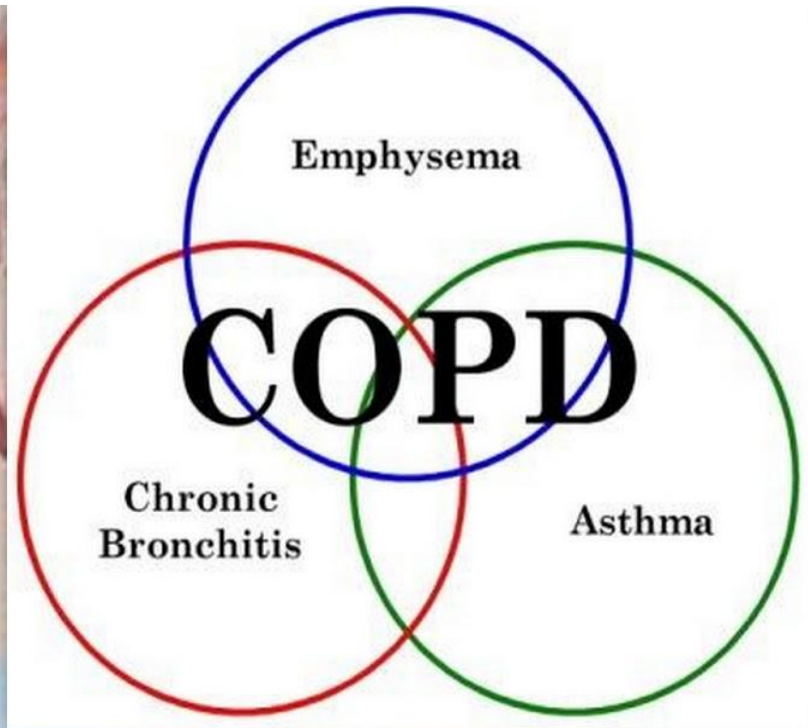
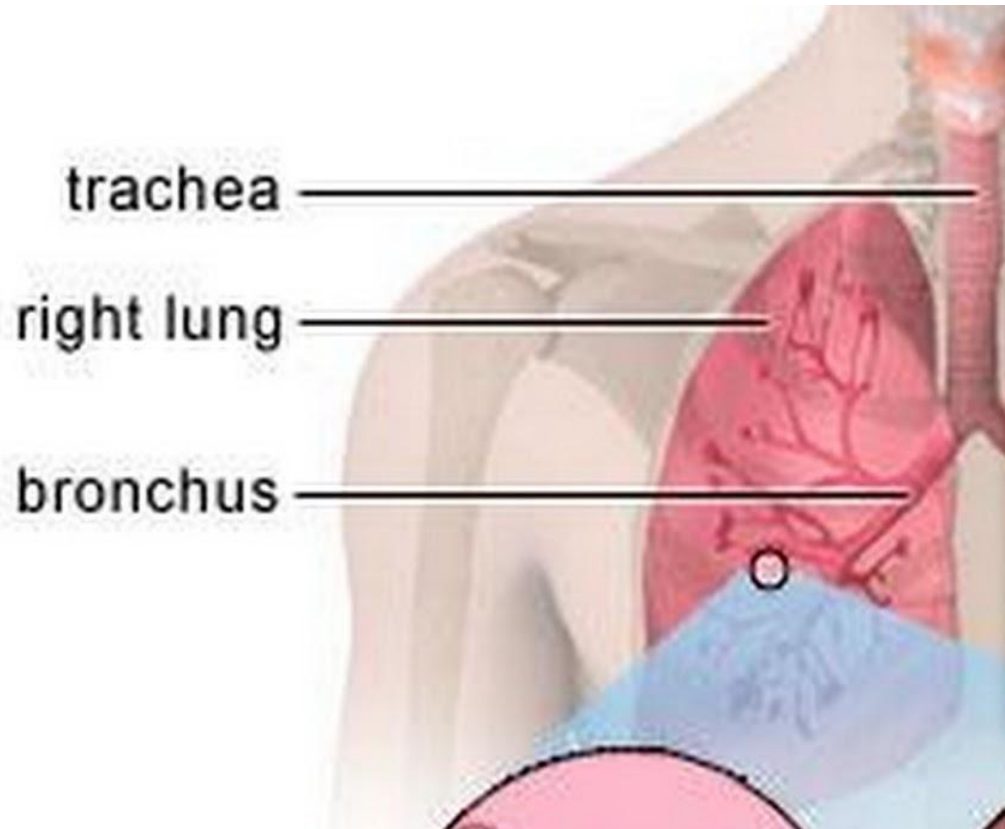
WHO IS AT RISK FOR GETTING COPD?

- **People most at risk for getting COPD are those who:**
- **Are current or former smokers**
- **Have occupations that put them in long-term contact with harmful chemicals, dust, fumes, and other pollutants;**

CONT.....

- **Live in areas or buildings with high levels of air pollution, chemical fumes, asbestos, and other harmful dust particles.**
- **Have a genetic condition known as alpha-1 antitrypsin deficiency; about 1 out of 5,000-7,000 people have this inherited defect.**

MAJOR DISEASES OF COPD



normal

COPD

MAJOR DISEASES OF COPD

1. CHRONIC BRONCHITIS

2. EMPHYSEMA

3. BRONCHIAL ASTHMA

BRONCHIAL ASTHMA

ASTHMA IS A EPISODIC DISEASE OF AIRWAY THAT IS CHARACTERISED BY INCREASED RESPONSIVENESS OF THE TRACHEOBRONCHIAL TREE TO A VARIETY OF STIMULI RESULTING IN WIDESPREAD SPASMODIC NARROWING OF AIR PASSAGES WHICH MAY RELIEVED SPONTANEOUSLY OR BY THERAPY, CHARACTERISED BY PROXYSMS OF DYSPNOEA, COUGH & WHEEZING.

ETIOLOGICAL TYPES

- **1. EXTRINSIC(ATOPIC OR ALLERGIC) ASTHMA - PERSONAL OR FAMILY HISTORY OF ALLERGIC DISEASE.**
- **2. INTRINSIC (IDIOCYNCRATIC OR NON-ATOPIC) ASTHMA – AFTER AN UPPER RESPIRATORY TRACT INFECTION OR HYPERSENSIVITY TO DRUGS**
- **3. MIXED TYPE – MIXED FEATURES OF BOTH**

Features of the Two Major Types of Asthma

Feature	Extrinsic Asthma	Intrinsic Asthma
<i>1. Age</i>	<i>In childhood</i>	<i>In adult</i>
<i>2. family history</i>	<i>Commonly present</i>	<i>Absent</i>
<i>3. allergic illness</i>	<i>Present</i>	<i>Absent</i>
<i>4. Allergens</i>	<i>Present</i> <i>(dust, pollens etc)</i>	<i>None</i>
<i>5. Drug hypersensitivity</i>	<i>None</i>	<i>Present (usually to aspirin)</i>
<i>6. Serum IgE levels</i>	<i>Elevated</i>	<i>Normal</i>
<i>7. Emphysema</i>	<i>Unusual</i>	<i>Common</i>

TRIGGERS

inflammatory factors



allergens

respiratory infections

work

medication

temperature change



strong odors

others



food additives

tabacco

gastric reflux

irritants



exercise

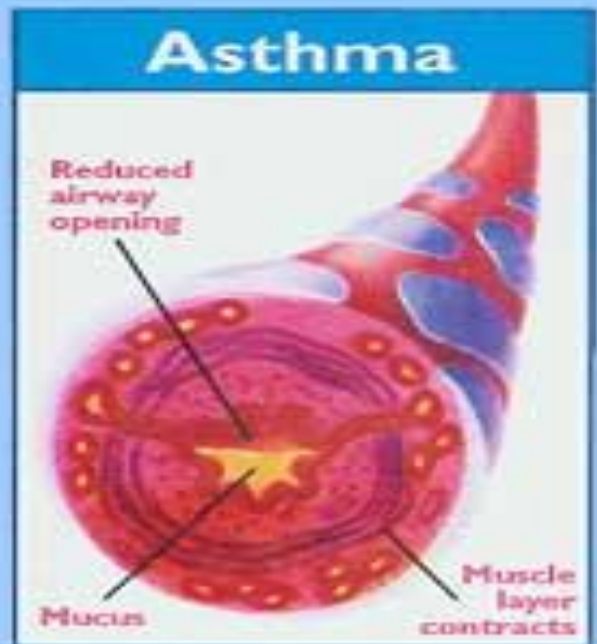
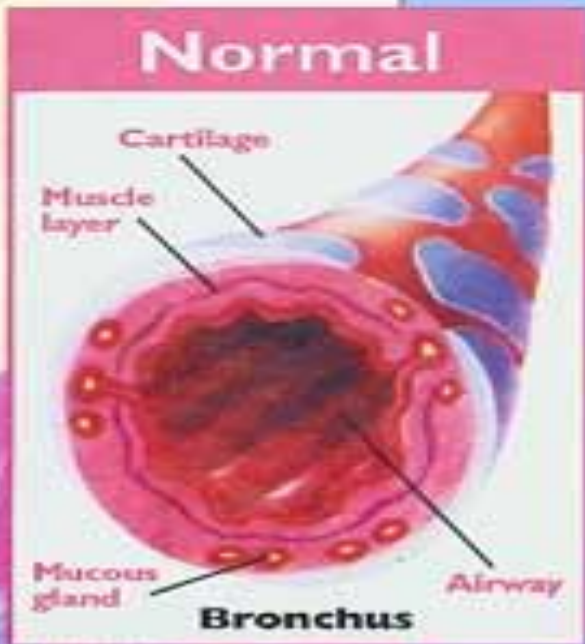
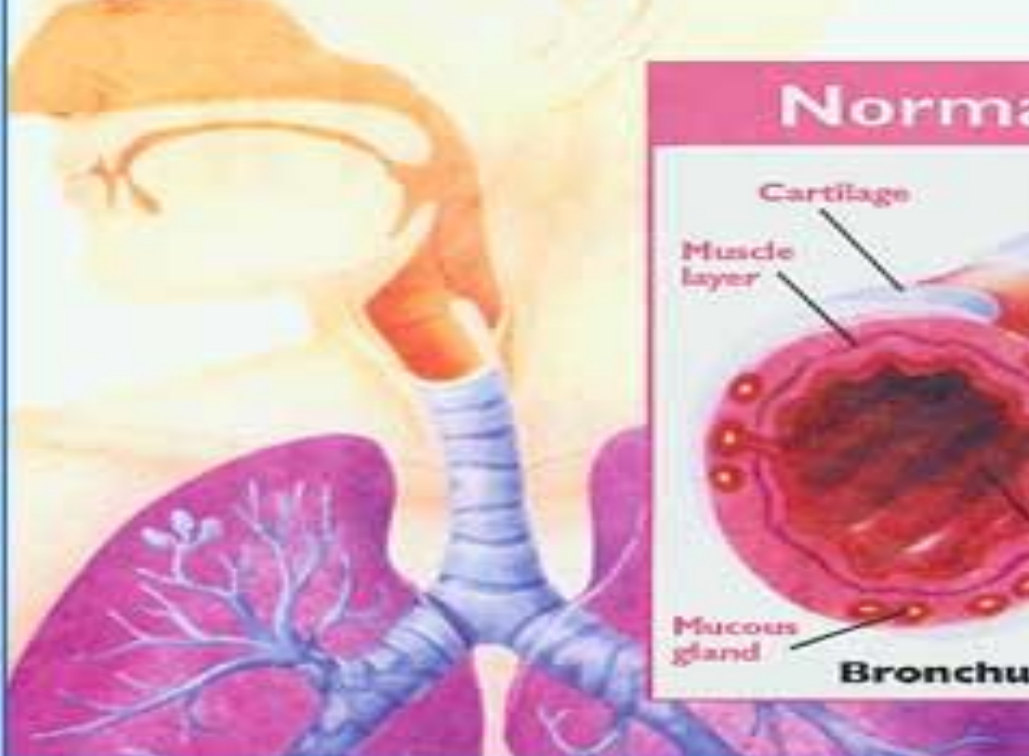
cold a

stress and emotions

tabacco

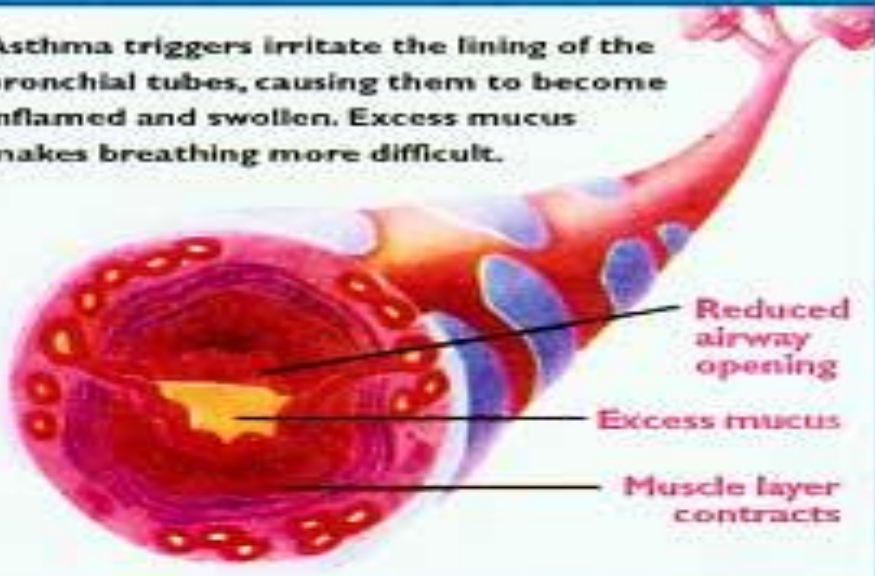
BRONCHIAL ASTHMA

- Reversible Bronchial Constriction
- Bronchial Mucous Plugs
- Bronchial Wall Thickening



Inflammation

Asthma triggers irritate the lining of the bronchial tubes, causing them to become inflamed and swollen. Excess mucus makes breathing more difficult.



Bronchoconstriction

During an asthma attack, bands of muscles surrounding the bronchial tubes contract, causing the airway to narrow.



MORPHOLOGIC FEATURES.

Grossly-

The lungs are over distended due to over-inflation.

The cut surface shows characteristic occlusion of the bronchi and bronchioles by viscid mucus plugs.



Lung



Asthmatic bronchiole



Normal bronchiole

Microscopically-

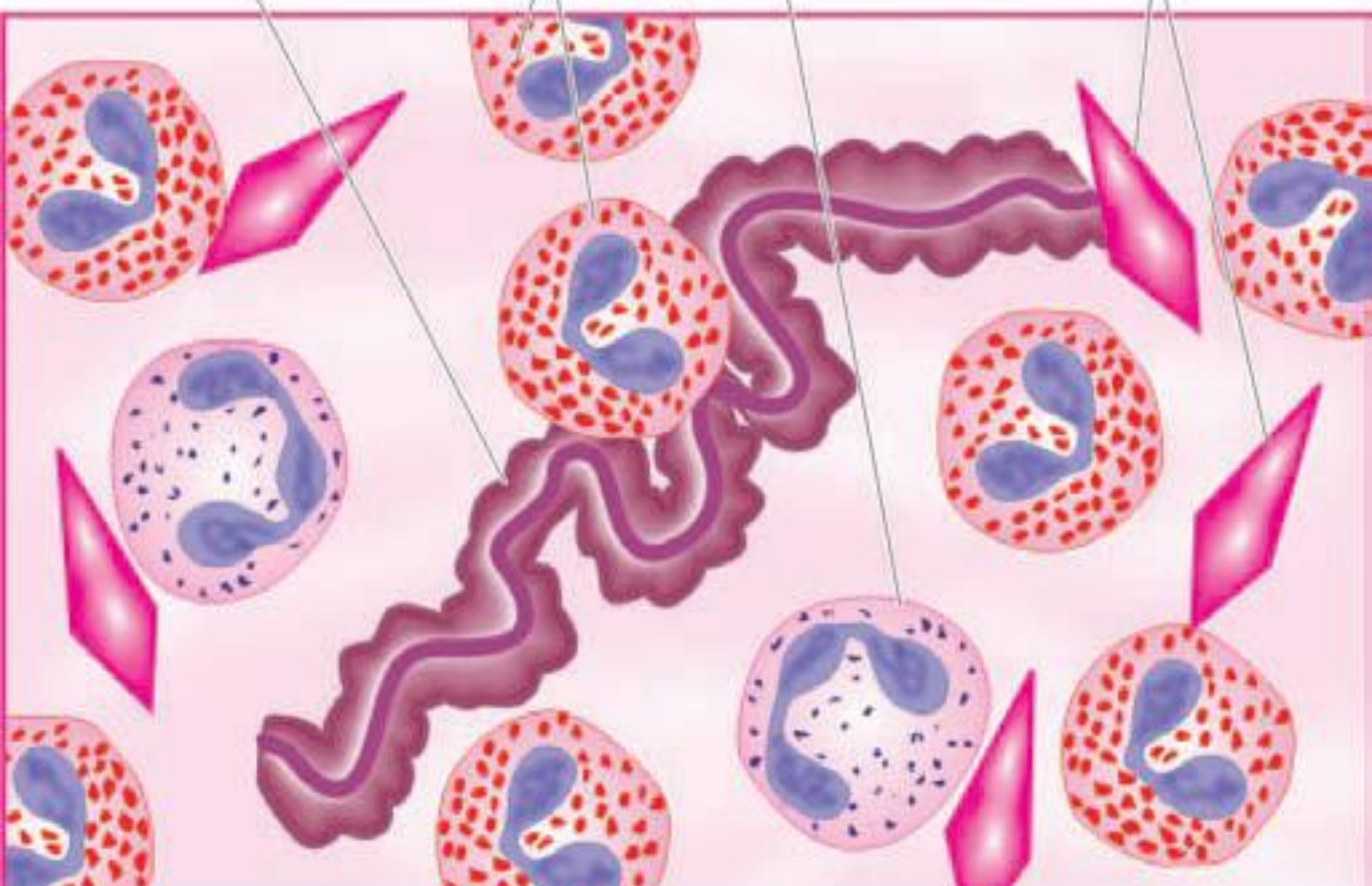
1. The mucus plugs contain normal or degenerated respiratory epithelium forming twisted strips called *Curschmann's spirals*.
2. The sputum usually contains numerous eosinophils and diamond-shaped crystals derived from eosinophils called *Charcot-Leyden crystals*.
3. The bronchial wall shows thickened bronchial epithelium, submucosal oedema and inflammatory infiltrate of lymphocytes, cells with prominence of eosinophils. There is hypertrophy of submucosal glands as well as of the bronchial smooth muscle.

Curschmann's spiral

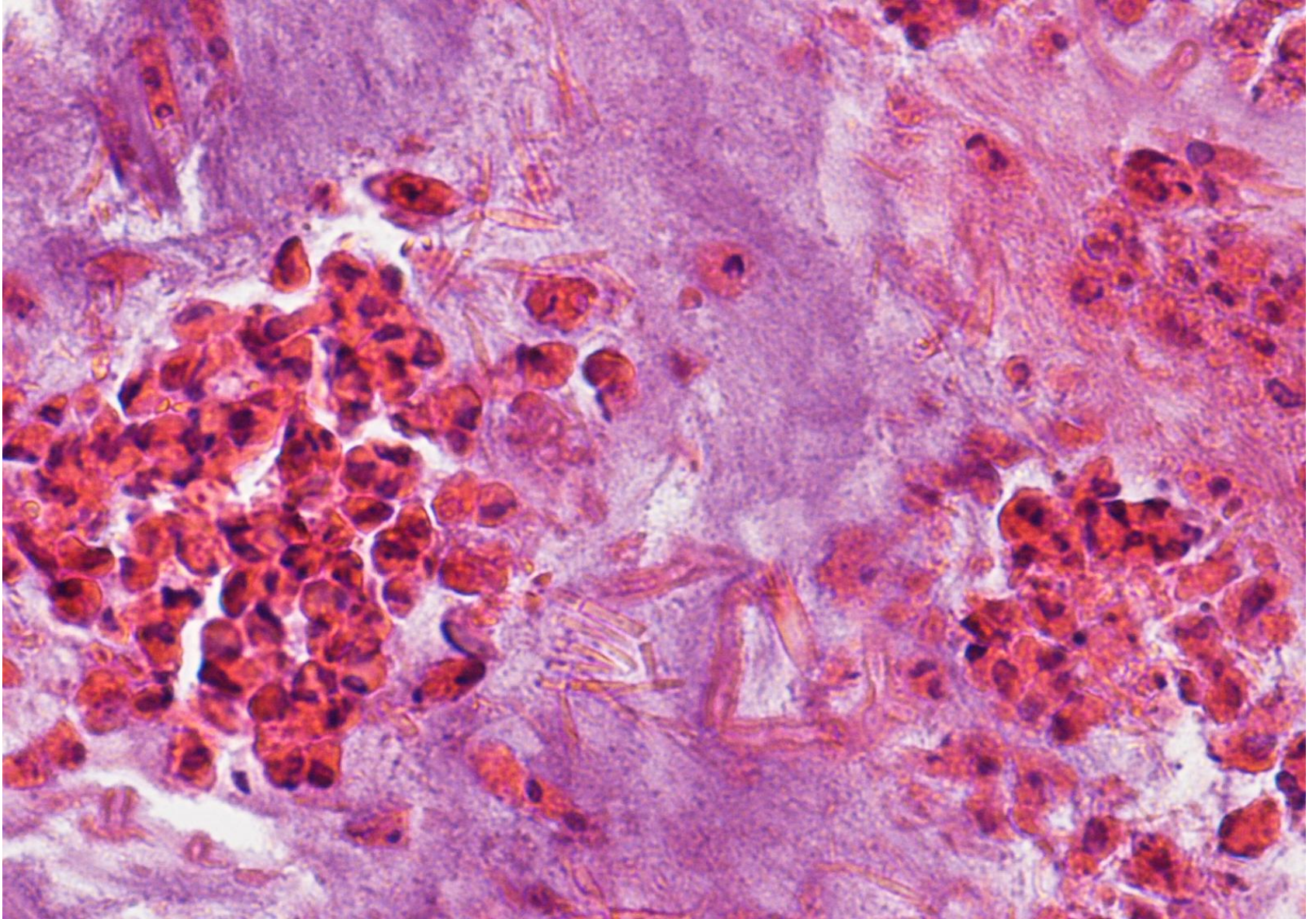
Eosinophils

PMN

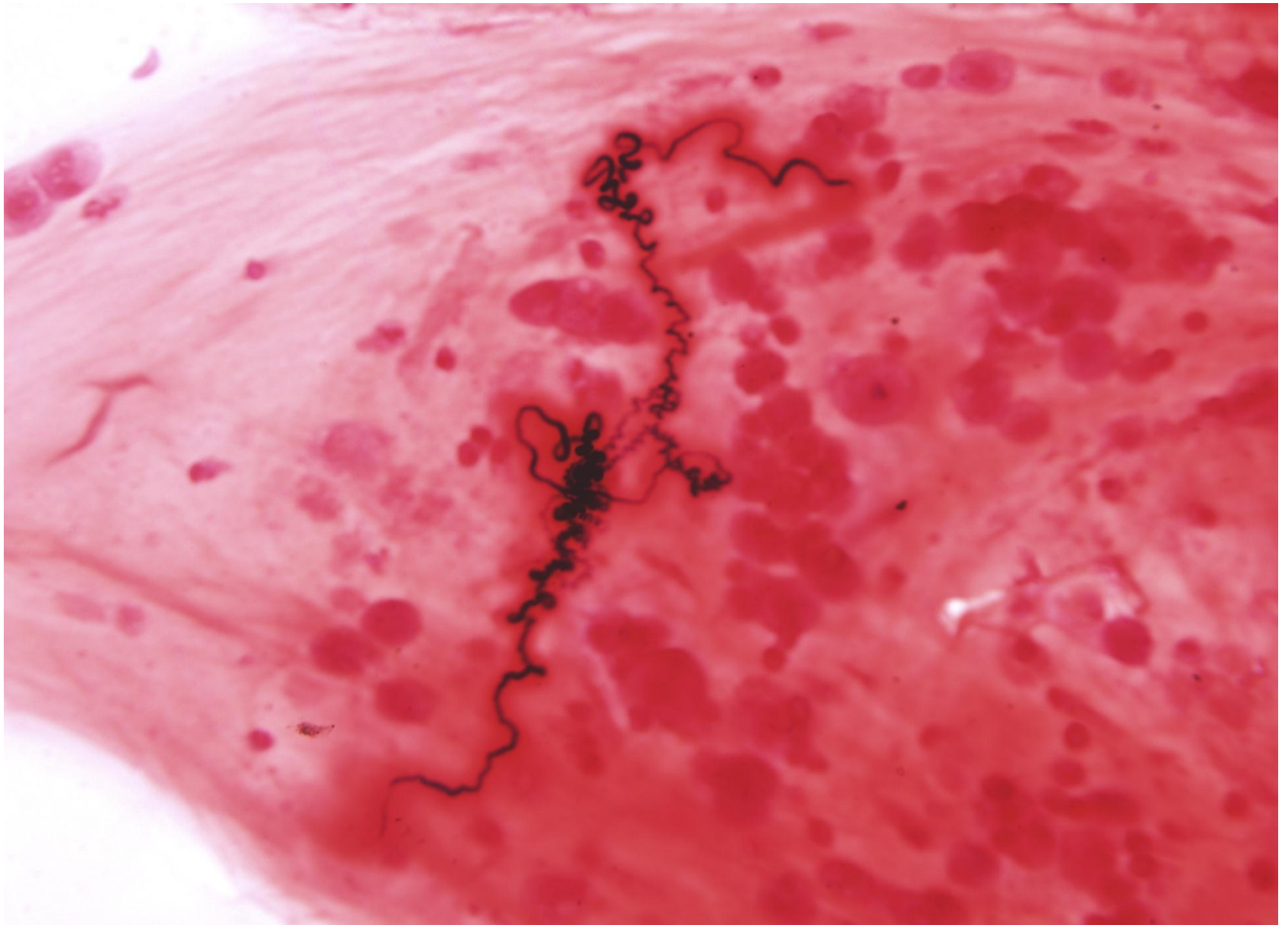
Charcot-Leyden crystals



CHARCOT-LEYDEN CRYSTALS



CURSCHMAN'S SPIRAL

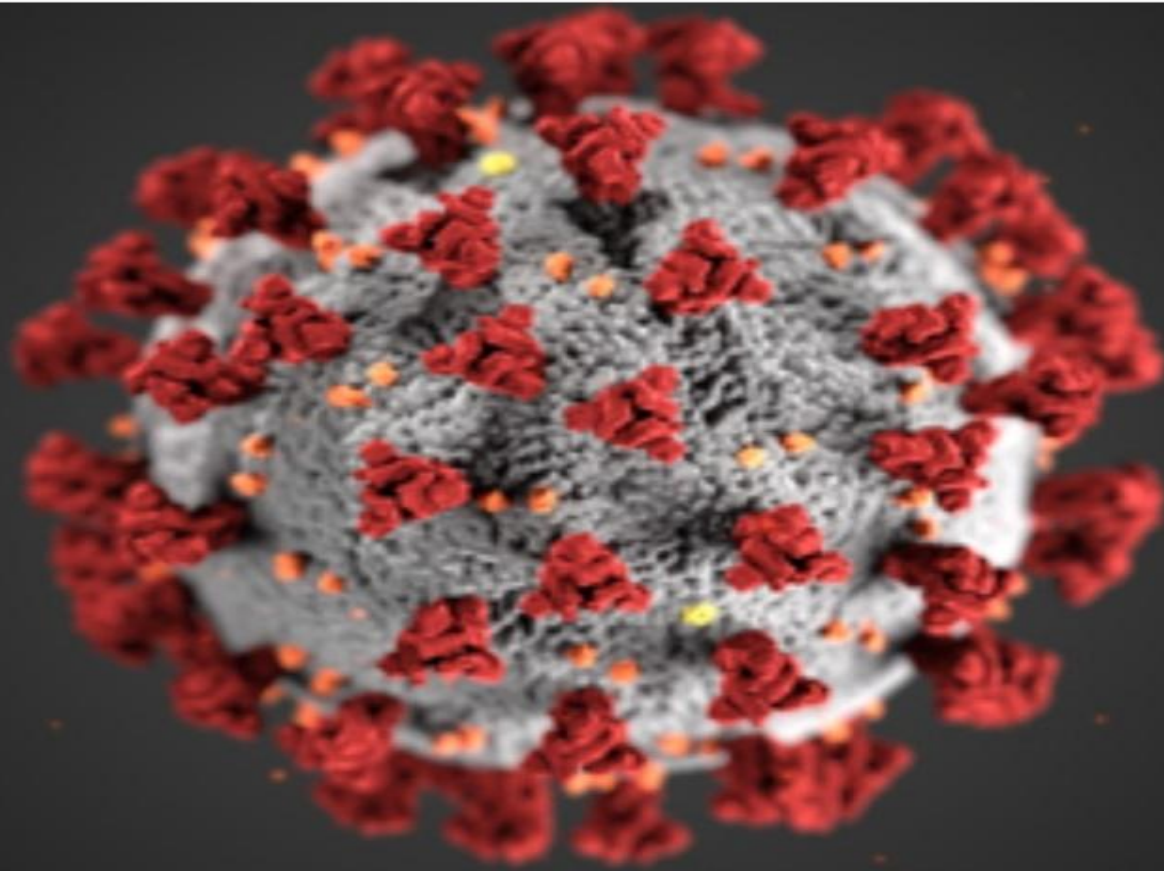


CLINICAL FEATURES

Asthmatic patients suffer from episodes of acute attacks with symptom free periods. Characteristic clinical features are paroxysms of dyspnoea, cough and wheezing. Most attacks typically last for a few minutes to hours.

When attacks occur continuously it may result in more serious condition called *status asthmaticus*.

COVID-19 AND ASTHMA: WHAT PATIENTS NEED TO KNOW



Coronavirus: What Is the Risk for Asthma Patients?
















Elderly people or people with previous illnesses are considered a special risk group in the current **COVID-19 pandemic**. And since the aggressive SARS-CoV-2 virus primarily affects the lungs, many **asthma patients** are afraid they might have an increased risk of infection and of a potentially severe course of the disease.

Additional uncertainty has been caused by indications that the immunosuppressive drugs frequently used by asthma patients, such as cortisone sprays, may further increase the risk of infection because they downregulate the body's own immune system.

The coronavirus disease 2019 (COVID-19) pandemic is scary for all people, but for those with asthma there is great fear that they will have a worse outcome or be more likely to get SARS-CoV-2 (the virus that causes COVID-19). It is important to know that currently there is no evidence of increased infection rates in those with asthma. And although the Centers for Disease Control and Prevention states that patients with moderate-severe asthma could be at greater risk for more severe disease, there are no published data to support this determination at this time.

There have been several reports that steroids are contraindicated in COVID-19 disease, so many are wondering what should people with [asthma](#) do if their controller medication is a steroid (inhaled or oral). **The short answer is continue taking your controller medications and do not stop them.**

Symptoms	Coronavirus* (COVID-19) Symptoms range from mild to severe	Cold Gradual onset of symptoms	Flu Abrupt onset of symptoms	Seasonal Allergies Abrupt onset of symptoms
 Length of symptoms	7-25 days	Less than 14 days	7-14 days	Several weeks
 Cough	Common (usually dry)	Common (mild)	Common (usually dry)	Rare (usually dry unless it triggers asthma)
 Shortness of breath	Sometimes	No**	No**	No**
 Sneezing	No	Common	No	Common
 Runny or stuffy nose	Rare	Common	Sometimes	Common
 Sore throat	Sometimes	Common	Sometimes	Sometimes (usually mild)
 Fever	Common	Short fever period	Common	No
 Feeling tired and weak	Sometimes	Sometimes	Common	Sometimes
 Headaches	Sometimes	Rare	Common	Sometimes (related to sinus pain)
 Body aches and pains	Sometimes	Common	Common	No
 Diarrhea	Sometimes	No	Sometimes for children	No
 Chills/repeated shaking	Sometimes	No	Sometimes	No
 Loss of taste or smell	Sometimes	Rare	Rare	Rare

Studies that may help in diagnosis:

.Physical examination

. Auscultation

INVESTIGATIONS-

- Chest X-ray
- Blood examination
- Spirometry
- Arterial blood gas
- Alpha-1 antitrypsin levels
- High resolution C T scan of chest

THANK YOU