Homeostatic Imbalance:

1. **Hard palate& soft palate:**

The genetic defect **cleft palate** (failure of the bones forming the palate to fuse medially) results in breathing difficulty as well as problems with oral cavity functions such as chewing and speaking.

2. **paranasal sinuses:**

Cold viruses and various allergens can cause rhinitis, inflammation of the nasal mucosa. The excessive mucus produced results in nasal congestion and postnasal drip. Because the nasal mucosa is continuous throughout the respiratory tract and extends tentacle-like into the nasolacrimal (tear) ducts and paranasal sinuses, nasal cavity infections often spread to those regions as well.

Sinusitis, or sinus inflammation, is difficult to treat and can cause marked changes in voice quality. When the passageways connecting the sinuses to the nasal cavity are blocked with mucus or infectious matter, the air in the sinus cavities is absorbed. The result is a partial vacuum and a sinus headache localized over the inflamed area.

3. **Pharynx:**

If the pharyngeal tonsil becomes inflamed and swollen (as during a bacterial infection), it obstructs the nasopharynx and forces the person to breathe through the mouth. In mouth breathing, air is not properly moistened, warmed, or filtered before reaching the lungs. Many children seem to have this condition, called tonsillitis, almost continuously. Years ago the belief was that the tonsils, though protective, were more trouble than they were worth in such cases, and they were routinely removed. Now, because of the widespread use of antibiotics, this is no longer necessary.

4. **Trachea:**

Because the trachea is the only way air can enter the lungs, tracheal obstruction is life-threatening. Many people have suffocated after choking on a piece of food that suddenly closed off the trachea (or the glottis of the larynx). The Heimlich maneuver, a procedure in which the air in a person's own lungs is used to "pop out," or expel, an obstructing piece of food, has saved many people from becoming victims of such "café coronaries." The Heimlich maneuver is simple to learn and easy to do. However, it is best learned by demonstration, because cracked ribs are a distinct possibility when it is done incorrectly. In some cases of obstructed breathing, an emergency tracheostomy (surgical opening of the trachea) is done to provide an alternative route for air to reach the lungs. Individuals with tracheostomy tubes in place form huge amounts

of mucus the first few days because of irritation to the trachea. Thus, they must be suctioned frequently during this time to prevent the mucus from pooling in their lungs.

5. ciliated mucosa:

Smoking inhibits ciliary activity and ultimately destroys the cilia. Without these cilia, coughing is the only means of preventing mucus from accumulating in the lungs. Smokers with respiratory congestion should avoid medications that inhibit the cough reflex.

6. Pleura cavity:

Pleurisy inflammation of the pleura can be caused by decreased secretion of pleural fluid. The pleural surfaces become dry and rough, resulting in friction and stabbing pain with each breath. Conversely, the pleurae may produce excessive amounts of fluid, which exerts pressure on the lungs. This type of pleurisy hinders breathing movements, but it is much less painful than the dry rubbing type.

7. Lung:

During atelectasis or lung collapse, the lung is useless for ventilation. This phenomenon occurs when air enters the pleural space through a chest wound, but it may also result from a rupture of the visceral pleura, which allows air to enter the pleural space from the respiratory tract.

The presence of air in the intrapleural space, which disrupts the fluid bond between the pleurae, is referred to as pneumothorax. Pneumothorax is reversed by drawing air out of the intrapleural space with chest tubes, which allows the lung to reinflate and resume its normal function.

8. Respiration:

Impaired oxygen transport: Whatever the cause, inadequate oxygen delivery to body tissues is called hypoxia . This condition is easy to recognize in fair-skinned people because their skin and mucosae take on a bluish cast (become cyanotic). In dark-skinned individuals, this color change can be observed only in the mucosae and nailbeds. Hypoxia may be the result of anemia, pulmonary disease, or impaired or blocked blood circulation.

Carbon monoxide poisoning represents a unique type of hypoxia. Carbon monoxide (CO) is an odorless, colorless gas that competes vigorously with oxygen for the same binding sites on hemoglobin. Moreover, because hemoglobin binds to CO more readily than to oxygen, carbon monoxide is a very successful competitor so much so that it crowds out or displaces oxygen. Carbon monoxide poisoning is the leading cause of death from fire. It is particularly dangerous because it kills its victims softly and quietly. It does not produce the characteristic signs of hypoxia—cyanosis and respiratory distress. Instead, the victim becomes confused and has a throbbing headache. In rare cases, the skin becomes cherry red,

(the color of the hemoglobin-CO complex), which is often interpreted as a healthy "blush." People with CO poisoning are given 100 percent oxygen until the carbon monoxide has been cleared from the body.

9. Respiratory Disorders:

Chronic Obstructive Pulmonary Disease (COPD) exemplified by chronic bronchitis and emphysema are a major cause of death and disability in the United States. These diseases have certain features in common: (1) Patients almost always have a history of smoking; (2) dyspnea difficult or labored breathing, often referred to as "air hunger," occurs and becomes progressively more severe; (3) coughing and frequent pulmonary infections are common; and (4) most COPD victims are hypoxic, retain carbon dioxide and have respiratory acidosis, and ultimately develop respiratory failure. In chronic bronchitis, the mucosa of the lower respiratory passages becomes severely inflamed and produces excessive amounts of mucus. The pooled mucus impairs ventilation and gas exchange and dramatically increases the risk of lung infections, including pneumonias. Chronic bronchitis patients are sometimes called "blue bloaters" because hypoxia and carbon dioxide retention occur early in the disease and cyanosis is common. In emphysema, the alveoli enlarge as the walls of adjacent chambers break through, and chronic inflammation promotes fibrosis of the lungs. As the lungs become less elastic, the airways collapse during expiration and obstruct outflow of air. As a result, these patients use an incredible amount of energy to exhale, and they are always exhausted. Because air is retained in the lungs, oxygen exchange is surprisingly efficient, and cyanosis does not usually appear until late in the disease. Consequently, emphysema sufferers are sometimes referred to as "pink puffers." However, overinflation of the lungs leads to a permanently expanded barrel chest.

Lung Cancer is the leading cause of cancer death for both men and women in North America, causing more deaths than breast, prostate, and colorectal cancer combined. This is tragic, because lung cancer is largely preventable—nearly 90 percent of lung cancers result from smoking. The cure rate for lung cancer is notoriously low; most victims die within 1 year of diagnosis. The overall 5-year survival of those with lung cancer is about 17 percent. Because lung cancer is aggressive and metastasizes rapidly and widely, most cases are not diagnosed until they are well advanced.

Ordinarily, nasal hairs, sticky mucus, and the action of cilia do a fine job of protecting the lungs from irritants but smoking overwhelms these cleansing devices and they eventually stop functioning. Continuous irritation prompts the production of more mucus but smoking slows the movements of cilia that clear this mucus and depresses lung macrophages. One result is a pooling of mucus in the lower respiratory tree and an increased frequency of pulmonary infections, including pneumonia and chronic obstructive pulmonary disease (COPD). However, it is the irritating effects of the "cocktail" of free radicals, highly addictive nicotine, and other carcinogens in tobacco smoke that ultimately lead to lung cancer.

The three most common types of lung cancer are:

(1) squamous cell carcinoma (25–30 percent of cases), which arises in the epithelium of the larger bronchi and tends to form masses that hollow out and bleed.

(2) adenocarcinoma (40 percent), which originates as solitary nodules in peripheral lung areas and develops from bronchial glands and alveolar cells.

(3) small cell carcinoma (about 20 percent), which contains lymphocyte-like cells that originate in the main bronchi and grow aggressively in small grapelike clusters within the mediastinum, a site from which metastasis is especially rapid.

Keep doing guys  you will do it.

Israa abu hlal