

The Child With Respiratory Dysfunction



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RESPIRATORY TRACT STRUCTURE

- ▶ The respiratory system is made up of the nose, pharynx (naso-pharynx or oro-pharynx), Epiglottis, larynx, trachea, bronchi, bronchioles, and the lungs.
- ▶ Infections of the respiratory tract are described according to the areas of involvement.
- ▶ **The upper respiratory tract, or upper airway**

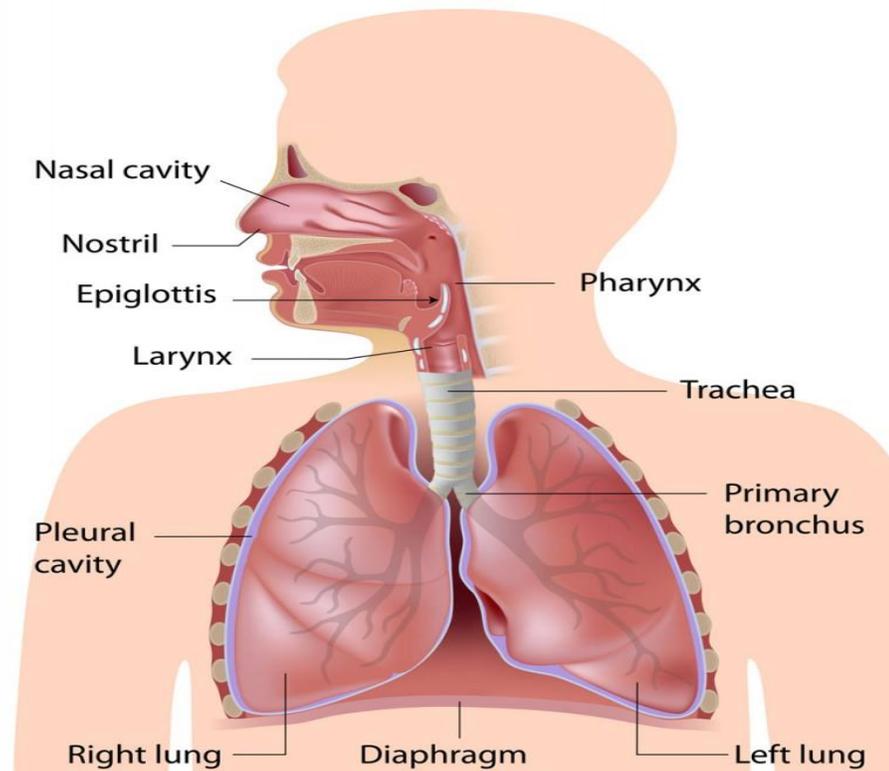
consists of the nasopharynx, pharynx, larynx, and upper part of the trachea.

- ▶ **The lower respiratory tract consists of**

the lower trachea, bronchi, bronchioles, lungs and alveoli.

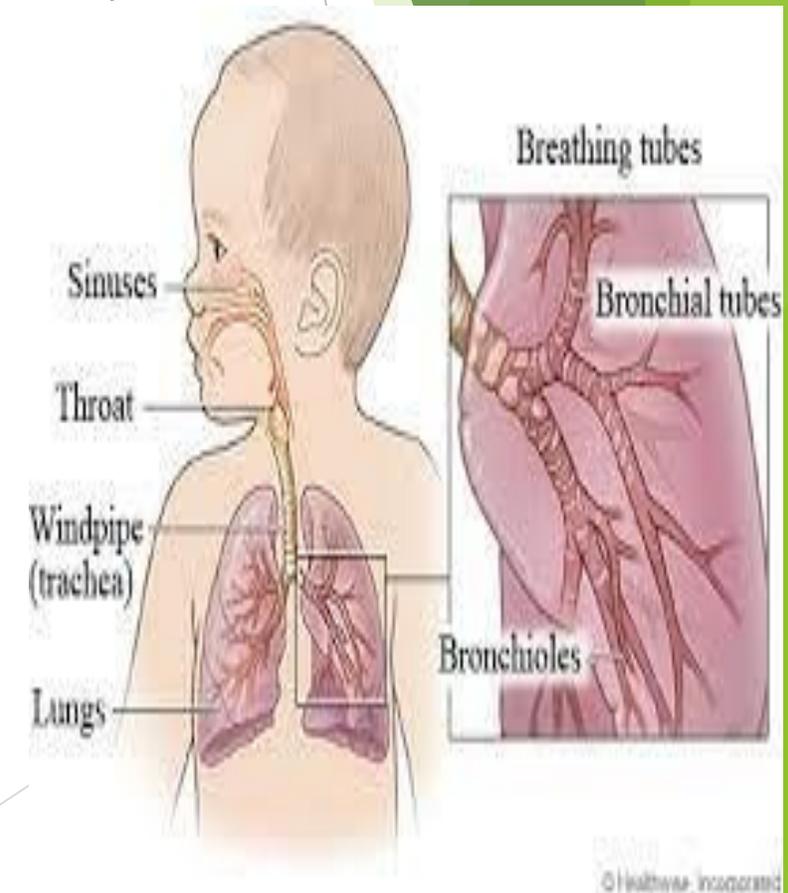
The right lung has 3 lobes. The left lung has 2 lobes

The Respiratory System

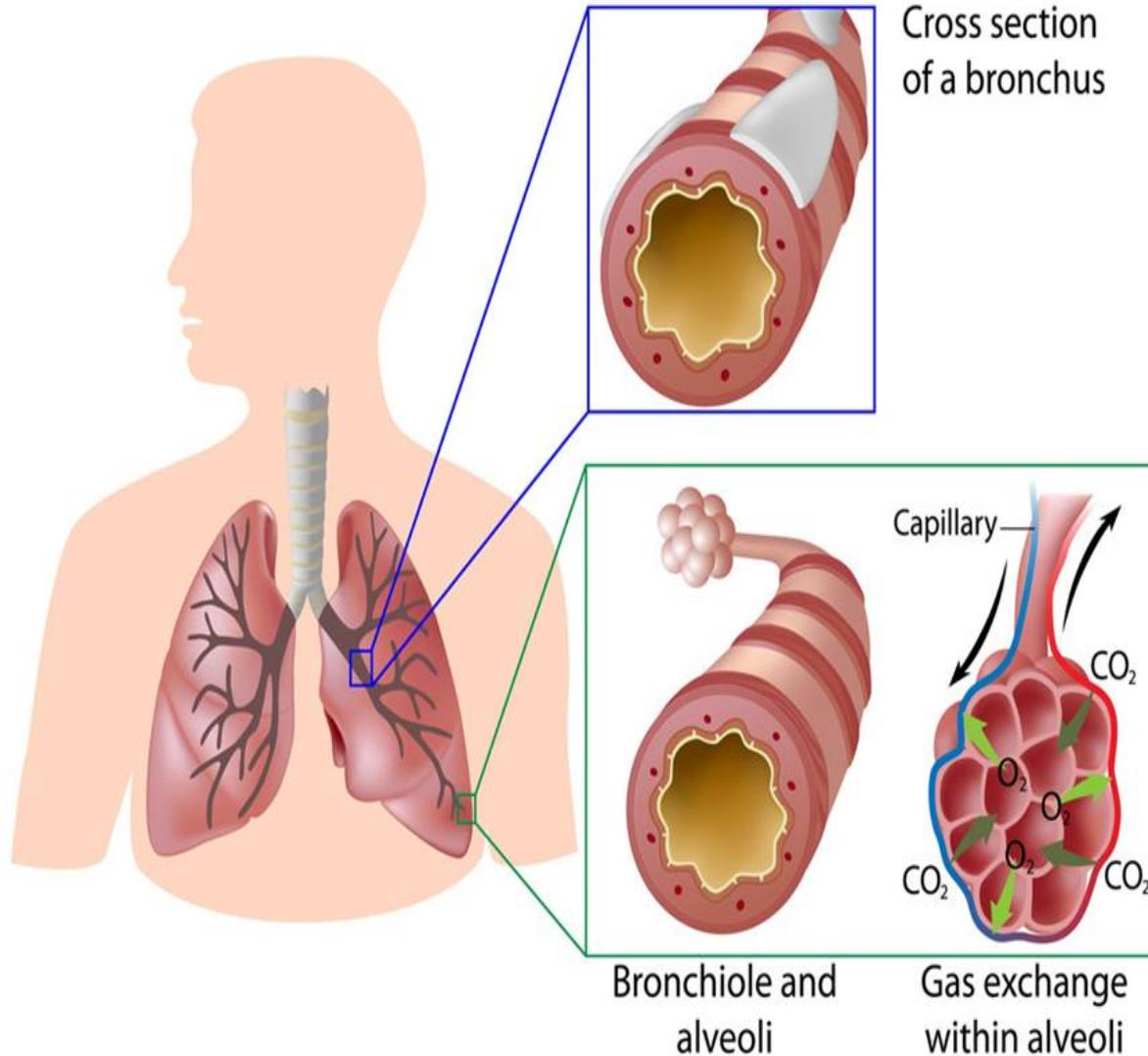
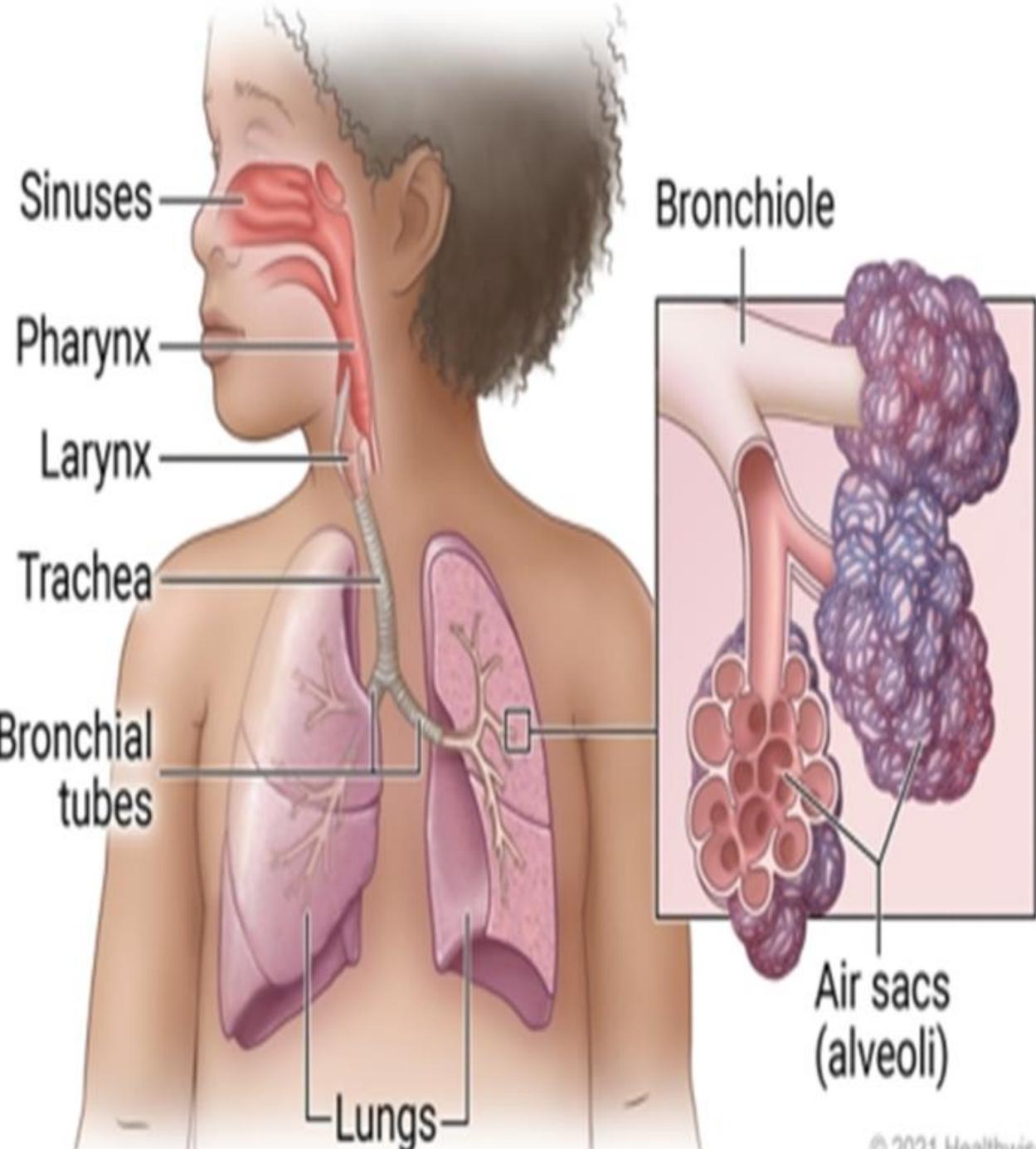


What is respiration?

- ▶ Respiration is the act of breathing in and breathing out. When you inhale, you take in oxygen. When you exhale, you give off carbon dioxide.
- ▶ When you breathe, the air:
 - Enters the body through the nose or the mouth.
 - Travels down the throat through the larynx and trachea
 - Goes into the lungs through tubes called main-stem bronchi:
 - One main-stem bronchus leads to the right lung and one to the left lung
 - In the lungs, the main-stem bronchi divide into smaller bronchi
 - Then the bronchi divide into even smaller tubes called bronchioles
 - Bronchioles end in tiny air sacs called alveoli



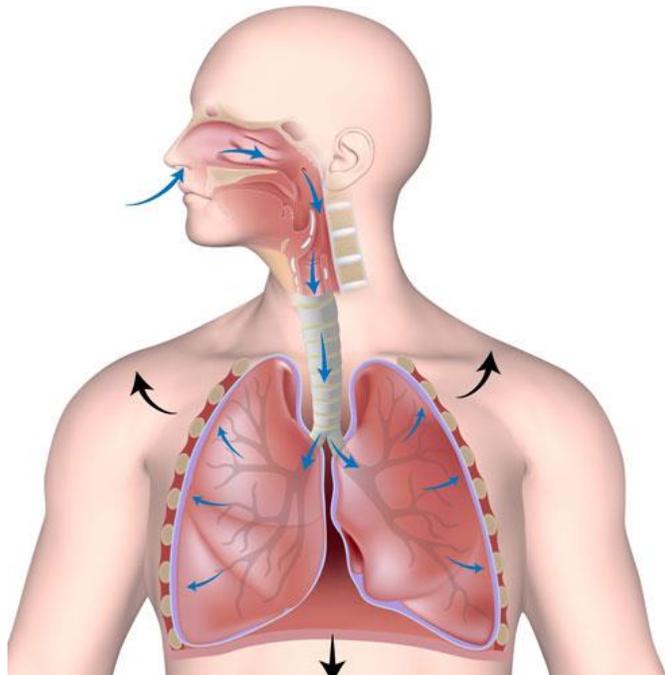
Human Lung Anatomy and Function



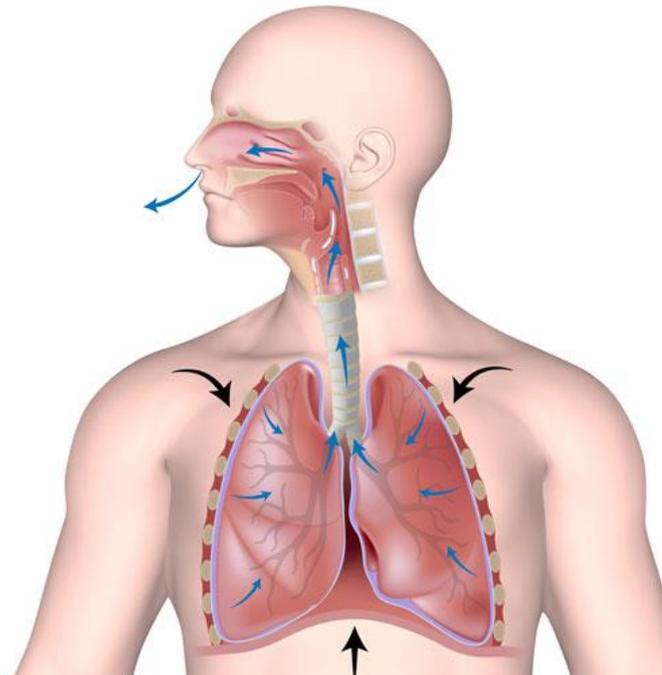
RESPIRATORY FUNCTION

- ▶ Ventilation, the exchange of gases in the lung

Inspiration



Expiration



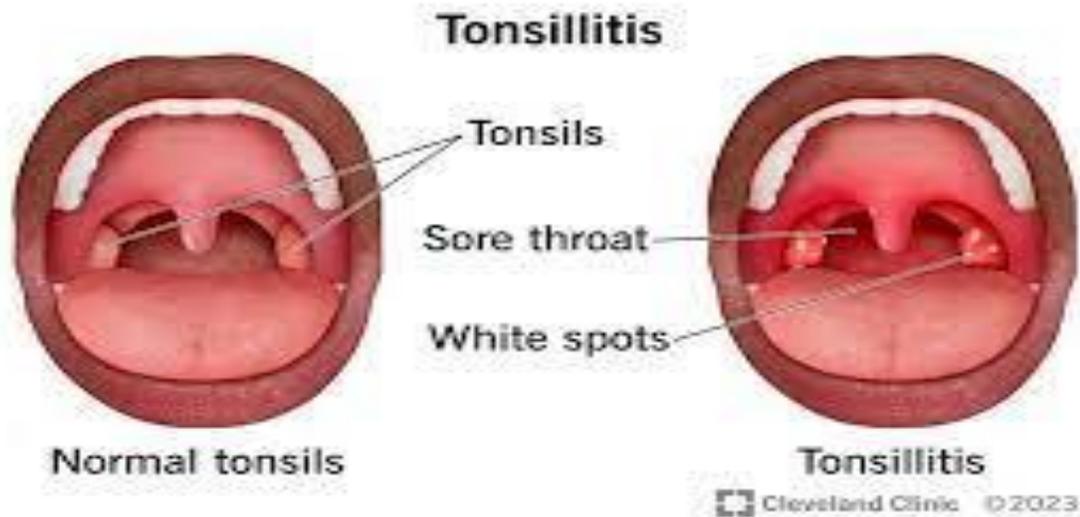
The normal function of resp. system are similar in children & adults but respond differently related to major areas of difference include:

- ▶ A: poor tolerance of nasal congestion especially in infants, who are obligatory nasal breathers until 2-4 months.
- ▶ B: Increased susceptibility to ear infection due to shorter , broader & more horizontally positioned Eustachian tubes.
- ▶ C: increased severity of resp. systems due to smaller airway diameters & loosely bounded mucous membranes.
- ▶ D. Metabolism Rate & Fluid Exchange
- ▶ D: Total body response to respiratory infection with such symptoms as fever , vomiting & diarrhea.

▶ TONSILLITIS

TONSILLITIS

- ▶ The tonsils are masses of lymphoid tissue located in the pharyngeal cavity. The tonsils filter and protect the respiratory and alimentary tracts from invasion by pathogenic organisms. They also play a role in antibody formation.
- ▶ Although the size of tonsils varies, children generally have larger tonsils than adolescents or adults.



Definition

- ▶ Tonsillitis is a common illness in childhood resulting from pharyngitis.

A ring of lymphoid tissue encircles the pharynx, forming a protective barrier against upper respiratory infection. This ring consists of groups of lymphoid tonsils, including the

- ▶ 1. Faucial, the commonly known tonsils
- ▶ 2. Pharyngeal, known as the adenoids
- ▶ 3. lingual tonsils are located at the base of the tongue & rarely removed.

Etiology

- ▶ Tonsillitis often occurs with pharyngitis. Because of the abundant lymphoid tissue and the frequency of URIs, tonsillitis is a common cause of illness in young children. The causative agent may be viral or bacterial.

Clinical Manifestations

- ▶ The manifestations of tonsillitis are caused by inflammation.
- ▶ As the palatine tonsils enlarge from edema,
- ▶ Sore throat, often with dysphagia (difficulty swallowing)
- ▶ Hypertrophied tonsils
- ▶ Exudates may be visible on the tonsils
- ▶ The child has difficulty swallowing and breathing.
- ▶ obstruction of breathing during sleep.
- ▶ There may be an offensive mouth odor and impaired senses of taste and smell.
- ▶ A persistent cough is also common

Therapeutic Management

Medical treatment of tonsillitis consists of:

- ▶ analgesics for pain
- ▶ antipyretics for fever,
- ▶ antibiotic in the case of streptococcal infection. A standard 10-day course of antibiotics is recommended.
- ▶ Stress the importance of completing the full prescription of antibiotic to ensure that the streptococcal infection is eliminated.
- ▶ A soft or liquid diet is easier to swallow,
- ▶ The child should be encouraged to maintain good fluid intake.
- ▶ A cool-mist vaporizer may be used to ease respirations.

Surgical Treatment

- ▶ Tonsillectomy (surgical removal of the palatine tonsils) may be indicated for massive hypertrophy that results in difficulty breathing or eating. Absolute indications are peritonsillar abscess
- ▶ Tonsillectomies generally are not performed unless other measures are ineffective or the tonsils are so hypertrophied that breathing and eating are difficult.
- ▶ Tonsillectomies are not performed while the tonsils are infected.
- ▶ The adenoids are more susceptible to chronic infection

- ▶ An indication for adenoidectomy is hypertrophy of the tissue to the extent of impairing hearing or interfering with breathing.
- ▶ Performing only an adenoidectomy if the tonsil tissue appears to be healthy is an increasingly common practice.
- ▶ Generally, removal of the tonsils should not occur until after 3 or 4 years of age because of the problem of excessive blood loss in young children and the possibility of regrowth or hypertrophy of lymphoid tissue. The tubal and lingual tonsils often enlarge to compensate for the lost lymphoid tissue, resulting in continued pharyngeal and eustachian tube obstruction.

Nursing Care Management

- ▶ Nursing care of the child with tonsillitis involves providing comfort
- ▶ A soft to liquid diet is generally preferred.
- ▶ Warm saltwater gargles, warm fluids, throat lozenges, and analgesic-antipyretic drugs such as acetaminophen are useful to promote comfort.

If surgery is needed

- ▶ The nurse takes a complete history, with special notation of any bleeding tendencies because the operative site is highly vascular.
- ▶ Baseline vital signs are important for postoperative monitoring and observation.
- ▶ bleeding and clotting times may be obtained with the usual laboratory work requests.
- ▶ During physical assessment the presence of any loose teeth is noted.

Nursing Process for the Child Having a Tonsillectomy

▶ NURSING DIAGNOSES

- ▶ 1. Risk for Aspiration postoperatively related to impaired swallowing and bleeding at the operative site
- ▶ 2. Acute Pain related to surgical procedure
- ▶ 3. Deficient Fluid Volume related to inadequate oral intake secondary to painful swallowing
- ▶ Deficient Knowledge related to caregivers understanding of post discharge home care and signs and symptoms of complications

The major postoperative goals for the child include:

- ▶ Preventing aspiration;
- ▶ Relieving pain, especially while swallowing
- ▶ Improving fluid intake.
- ▶ increase knowledge and understanding of post discharge care and possible complications.
- ▶ Observe the child for loose teeth that could cause a problem during administration of anesthesia
- ▶ Document findings

IMPLEMENTATION

- ▶ Preventing Aspiration Postoperatively
- ▶ Immediately after a tonsillectomy, place the child in a partially prone position with head turned to one side until the child is completely awake.
- ▶ Encourage the child to expectorate all secretions
- ▶ Discourage the child from coughing.

- ▶ Check vital signs every 10 to 15 minutes until the child is fully awake, and then check every 30 minutes to 1 hour.
- ▶ Hemorrhage is the most common complication of a tonsillectomy. Bleeding is most often a concern within the first 24 hours after surgery and the 5th to 7th postoperative day.
- ▶ Administer pain medication as ordered.
- ▶ Liquid acetaminophen with codeine is often prescribed.
- ▶ Rectal or intravenous analgesics may be used

- ▶ Observe the pharynx with a flashlight each time
- ▶ vital signs are checked.
- ▶ Bleeding can occur when the clots dissolve between the 5th and 7th postoperative days if new tissue is not yet present. or due to infection

- ▶ Encouraging Fluid Intake
- ▶ Food and fluid are restricted until children are able to swallow them and are alert with no signs of hemorrhage.
- ▶ Cool water, crushed ice, flavored ice pops, or diluted fruit juice is given
- ▶ fluids with a red or brown color are generally avoided to distinguish fresh or old blood in emesis from the ingested liquid.
- ▶ Children often begin soft foods, particularly gelatin, cooked fruits, sherbet, soup, and mashed potatoes, on the first or second postoperative day or as the child tolerates feeding.
- ▶ Avoid irritating liquids such as orange juice and lemonade.
- ▶ Milk and ice cream products tend to cling to the surgical site and make swallowing more difficult

THANK
YOU

