

# Lab 19 Objectives

## Respiratory Anatomy

rev: 1/6/10

### During the lab period (complete in order):

1. Watch the short clip on the vocal cords in action
  - Vocal folds; HarperCollins LD, Side B:
    - coughing: frame 23727
    - singing: frame 23821
    - laughing: frame 23545
    - high & medium pitches: frame 24187
  
2. Dissection (Dissection Exercise 6 (pp. 743-745)):
  - In order to get a good view of the **trachea**, you'll have to cut through the blood vessels superior to the heart and move the heart out of the way.
    - The *Lab Manual* glosses over this, but it's important if you're going to see where the trachea branches.
    - You can even take the heart out entirely, but please resist the use of puns!
  - The **larynx** will be higher up in the neck than you might expect. Cut along the trachea to find it.
    - Once the larynx is free, cut it along its long axis to see the **vocal folds**.
  - You may snip off the **epiglottis** in the process of finding the larynx.
    - If another group gets it out in one piece, just look at theirs.
  - The **hyoid bone** will be completely surrounded by muscle; to find it, try feeling for it.
  - Snip off some **lung** tissue and look at the cut surface under a dissecting microscope.
    - Note how spongy the tissue is and the numbers of blood vessels.
  - The **phrenic nerve** runs along the posterior surface of the pericardium to the **diaphragm**.
    - It looks like a silky white thread.
  - Dissection checklist:
    - diaphragm
    - epiglottis
    - larynx
    - lobes of lungs
    - phrenic nerve
    - primary bronchi

- respiratory tree (in general)
- thyroid cartilage
- thyroid gland
- trachea
- true vocal cords
- visceral pleura

### 3. Larynx model

- Check out the larynx model and try to identify the cartilages using Marieb Fig. 22.4 (p. 810).
- As you can tell from looking at the model, figures don't really do it justice. You need to see it in three dimensions.
- Also check out the vocal folds and make them open and close.

### 4. Smoker pig's lung

- O, lamentable Smoker Pig! Compare his poor lung compliance to his non-smoking farm-mate.
- Bad, Pig! Bad! ☹

### 5. For your Histology Notebook:

- **trachea** – *Brief Atlas*: Plate 40 (p. 16); *Histology Atlas*: Fig. 16.11 (pp. 194-195)
  - Recommended # of pages: 1
  - Draw at 40x total magnification.
  - Label the following: trachea lumen, esophagus lumen, hyaline cartilage rings, ciliated pseudostratified columnar epithelium
  - Answer **Question 12**: What is the function of the hyaline cartilage rings that surround the trachea lumen?
- **lung** – *Brief Atlas*: Plate 41 (p. 17); *Histology Atlas*: Figs. 16.20-16.22 (p. 198).
  - Recommended # of pages: 1
  - Draw at 100x or 400x total magnification.
  - Label the following: alveolus, alveolar duct, respiratory membrane