

# Lymph nodes of the respiratory system

## External nose, nasal cavity, paranasal sinuses

From the external nose, it drains lymph into the *nodi submandibulares*.

Lymphatic vessels in the mucosa of the nasal cavity lie more superficially than the venous plexus. They drain lymph in several directions

- from the upper part of the nasal cavity and from the *pars olfactoria* to the **nodi retropharyngei** (in front of the body of the second cervical vertebra),
- from the side wall nasal cavity and *concha nasalis inferior* to the upper group **nodi cervicales profundi** (nodes at the venter posterior m. *digastrici* and *cornu majus lingual*),
- from the *septum nasi* and the base of the nasal cavity via the lymphatic vessels of the soft palate to the **nodi cervicales profundi**.

From the paranasal sinuses, sap drains into the mucosa of the nasal cavity (through the natural openings of the paranasal sinuses) and further through its lymphatic vessels.

## Larynx

The sap of the larynx is drained in several directions

- from the nodes at the *membrana thyrohyoidea* to the *nodi cervicales profundi*,
- through *leaque cricothyroideum* (usually there is a small forward **nodus prelaryngeus**) again to the *nodi cervicales profundi* and to the nodes in front of the trachea,
- from the *infraglottic part* of the larynx to the *nodes in front of the trachea*.

## Trachea

The nearest nodes are the **nodi tracheales** directly at the trachea, further the sap reaches the **nodi tracheobronchiales superiores - dextri et sinistri** (cranially between the trachea and exiting bronchi).

From both sources, the sap drains into the **truncus bronchomediastinalis dexter et sinister**.

## Bronchi

The lymph nodes are located along the bronchi (see lungs) and drain the lymph to the main lymph trunks, via the *nodi tracheobronchiales* and then through the right and left *truncus bronchomediastinalis*.

## Lungs

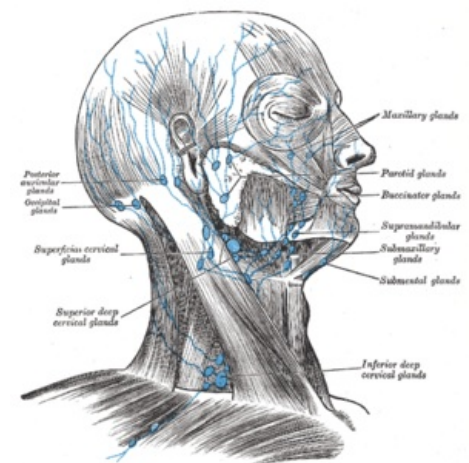
Inside both lungs there are two main systems: **superficial and deep**, which are connected by **hilar nodes** (*nodi bronchopulmonales*).

### Surface System

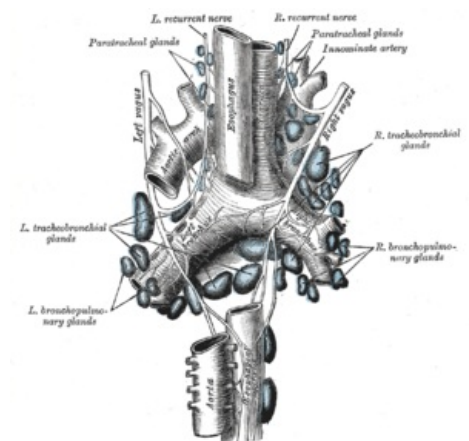
The surface system forms braids on the surface of the lungs and under the pleura, the vessels continue in the fibrous septa and along the pulmonary veins to the hilum. There are no lymph nodes.

### Deep system

The deep system is located along the branching of the bronchial tree. It collects from the lymphatic plexuses in the ligature around the respiratory bronchioles (lymphatic vessels are absent in the *ductus alveolares* and *sacculi alveolares*), continues along the subsegmental bronchi to branch segmental bronchi. At the intervals of the segmental bronchi (inside the lungs) there are small nodules: *nodi pulmonales* or *intrapulmonales*. The sap continues to the **nodi bronchopulmonales** (hilar nodes), which are located at the points where the lobular bronchi part, and then to the *truncus bronchomediastinalis* (right and left), with most of the sap passing through **nodi tracheobronchiales superiores (dextri et sinistri)** and **inferiores** (below the bifurcation of the trachea).



Lymphatic head and neck nodes



Lymph nodes at the bifurcation of the trachea

## Drainage from individual parts of the lungs

From the upper segments of the left upper lobe (without the lingular segments), the sap drains into the **nodi tracheobronchiales superiores sinistri** and through the **truncus bronchomediastinalis sinister** into the **ductus thoracicus**.

From the rest of the left lung and from the right lung, the sap is drained to the **nodi tracheobronchiales inferiores**, then to the **nodi tracheobronchiales superiores dextri** (from the right lung and directly to them) and via the **truncus bronchomediastinalis dexter** to **ductus lymphaticus dexter**.

With age, the color of the lymphatic vessels gradually changes, from pink to gray to black, which is caused by the deposition of solid particles (soot, dust,...) that got here together with inhaled air (anthracosis nodes).

The tracheobronchial nodes can be connected to the paratracheal nodes, thanks to them also to the cervical supraclavicular nodes, other connections can lead to the nodes around the truncus coeliacus, at the a. splenica, or nodi lymphatici lumbales (along the abdominal aorta). This connection is important in the spread of infection or metastasis.

## Links

### Related Articles

- Disappearing head and neck system
- Lymph Node
- General Anatomy of the Lymphatic System
- Vanishing Tribes
- Portal:Collection of histological preparations (1st Faculty of Medicine UK)/Lymphatic system
- The vanishing system on the anatomy portal

### References

- ČIHÁK, Radomír – GRIM, Miloš. *Anatomy*. 2. 3. edition. Grada, 2013. pp. 188–241. ISBN 978-80-247-4788-0.
- ČIHÁK, Radomír. *Anatomy III*. 1. edition. Grada, 1997. pp. 182–193. ISBN 80-7169-140-2.
- GRIM, Miloš – SECOND, Rastislav. *Fundamentals of Anatomy 3 : Digestive, respiratory, genitourinary and endocrine system*. 1. edition. Galen, 2005. 163 pp. pp. 62–92. ISBN 80-7262-302-8.