

The breathing system

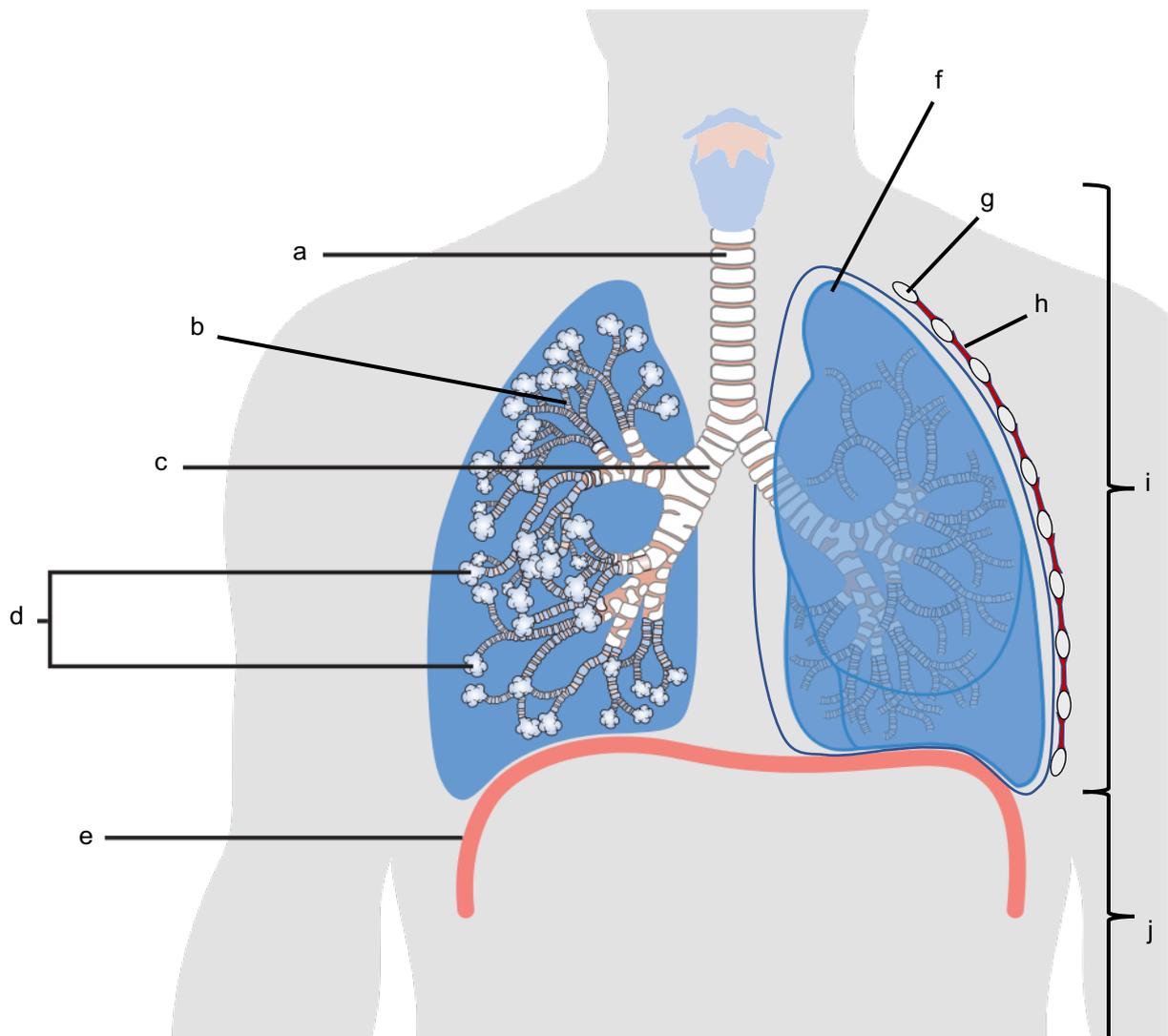
Humans are **multicellular** and contain many different types of **cells**. A group of the same cells forms a **tissue**. Different tissues work together in **organs**. Organs work together in **organ systems**.

The **lungs** are organs in the **breathing system** (or **respiratory** or **gas exchange system**). Its function is to get oxygen into the blood and remove carbon dioxide (a process called gas exchange).

COVID-19 is a disease caused by a tiny particle, called a virus. Viruses cause problems when they get into cells. If the COVID-19 virus gets into the cells in the tubes leading to the lungs, it causes a mild disease (a bit like flu). If it infects cells deeper in the lungs, it can cause a very serious disease.

Find out

1. The diagram shows the breathing system. Parts (a), (f), (g) and (h) are all organs. Find out the names of all the parts. Write your answers in the table on the next page.



	Name of part		Name of part
a		f	
b		g	
c		h	
d		i	thorax (chest)
e		j	abdomen

2. a Find the name of the *type* of virus that causes COVID-19. _____
- b Find the name of the virus that causes COVID-19. _____

Test yourself

3. List the names of three organs in the breathing system. _____
- _____

4. State the organ that is infected in mild forms of COVID-19. _____

5. Give another name for the breathing system. _____

6. Complete the gaps.

The lung is an organ because it contains different _____.

Each different tissue is made of a different type of _____. When organs

work together, they form an _____.

7. Describe what happens in gas exchange. _____
- _____

Check-up

- I. Check your answers.
- II. Prepare a short talk about a difference between people who have a mild form of COVID-19 and people who have the serious disease.

Answers

Note to home educators

The worksheet is designed to support understanding of organ systems. You may wish to share these objectives with students:

- Describe how multicellular organisms are built from cells, which form tissues, which form organs, which work together in organ systems.
- Describe the function of the breathing (respiratory/gas exchange) system.
- Identify the main organs of the human gaseous exchange system and describe their functions.

Some students will not have studied the breathing system at this point but will still be able to access the sheet with a basic knowledge of cells, tissues and organs.

It is suggested that students complete the worksheet independently, making use of secondary source materials (such as reference books and/or the internet) to complete questions 1 and 2. Questions 3 – 7 should be completed without help from additional sources.

All questions are accessible by students in Key Stage 3 (Years 7 – 9).

Other sheets in this series are at: <https://shwca.se/covid19science>

If you wish to check the answers, keep this part of the sheet away from the questions!

I. 1.

	Name of part		Name of part
a	trachea (or windpipe)	f	lung
b	bronchiole	g	rib
c	bronchus	h	intercostal muscle
d	alveoli (or air sacs)	i	thorax (chest)
e	diaphragm	j	abdomen

2. a coronavirus

b SARS-CoV-2 or Severe acute respiratory syndrome coronavirus 2

3. Three of: trachea/windpipe, lung, rib, (intercostal) muscle, diaphragm.

4. trachea/windpipe

5. respiratory system/gas exchange system (or even ventilation system)

6. tissues, cell, organ system

7. oxygen goes into the blood, carbon dioxide is removed

II. You may get a short talk about the difference between people who have a mild form of COVID-19 and people who have the serious form of the disease. Some students might do further research for their talks. The point taken from this sheet should be that in mild forms of the disease the trachea (windpipe) is the main site of infection. In serious forms of the disease, the lungs (in particular the alveoli) are severely infected and inflamed.