



## Vocabulary Builder Reference from...

*Alex Gendler: How do ventilators work? | TED Talk*

[https://www.ted.com/talks/alex\\_gendler\\_how\\_do\\_ventilators\\_work](https://www.ted.com/talks/alex_gendler_how_do_ventilators_work)

### Advanced Words Only

#### IMPORTANT

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## Session 1: Word List

### suffocate

v. to die or cause someone to die from lack of air or inability to breathe; to be overwhelmed or constricted by a feeling or situation, such as anxiety or oppression

*synonym*: choke, smother, stifle

(1) **suffocate** to death, (2) **suffocate** fire

People can **suffocate** from a lack of oxygen in confined spaces.

### trachea

n. the tube-like structure in the body through which air moves from the larynx (= a part of the human respiratory system located in the neck region) to the bronchi (= part of the respiratory system and are responsible for conducting air into the lungs), also known as the windpipe

*synonym*: windpipe, bronchus

(1) **trachea** blockage, (2) **trachea** infection

Inhaling irritants can cause inflammation of the **trachea** and lead to coughing.

### inflate

v. to fill something with air or gas so that it becomes bigger and rounder

*synonym*: blow up, expand, puff up

(1) **inflate** a tire, (2) **inflate** expense reports

She **inflated** the balloons for the party.

## acclaim

*n.* praise or admiration that is expressed publicly; (verb) to praise or admire someone or something publicly

*synonym*: praise, admiration, welcome

(1) **acclaim** the winner, (2) treated with royal **acclaim**

The actor's performance in the play earned her widespread **acclaim** from the theater community.

## medicinal

*adj.* of or relating to the treatment or cure of disease

*synonym*: curative, therapeutic, healing

(1) **medicinal** chemistry, (2) traditional **medicinal**

The **medicinal** properties of this herb have been known to help with various ailments.

## diaphragm

*n.* a large, dome-shaped muscle located at the bottom of the chest cavity, essential for breathing and separating the chest and abdomen; a shallow, dome-shaped device with a flexible rim that is inserted into the vagina to cover the cervix and prevent sperm from reaching the uterus, serving as a method of birth control

*synonym*: midriff, pessary, shield

(1) **diaphragm** birth control, (2) **diaphragm** activity

Individuals with a weak **diaphragm** may experience difficulty breathing during physical activity.

## alveolus

*n.* (in the plural, "alveoli") a small, hollow cavity, pit, or socket; the small sacs in the lungs, where gas exchange with the blood occurs

*synonym*: cavity, air sac, socket

(1) tooth **alveolus**, (2) **alveolus** function

Damage to the walls of an **alveolus** can lead to reduced lung function.

## sac

*n.* a bag or pouch, typically made of fabric or leather, used to hold something valuable or important; a structure resembling a bag in an animal or plant

*synonym*: bag, pouch, knapsack

(1) **sac** contents, (2) abdominal **sac**

I placed my valuables in the **sac** before heading out on my hike.

## capillary

*n.* a tube of small internal diameter; any of the minute tubes that carry blood

(1) a **capillary** tube, (2) **capillary** action

There are many **capillary** vessels in the gills of fish.

## inflated

*adj.* swollen or blown up, especially with air or gas; excessively or unreasonably high

*synonym*: enlarged, swollen, distended

(1) **inflated** prices, (2) an **inflated** balloon

The athlete's ego became **inflated** by their success.

## exhale

*v.* to breathe out air or vapor from the lungs or mouth; to release or emit something slowly or gently

*synonym*: breathe out, expel, emit

(1) **exhale** a big sigh, (2) **exhale** cigarette smoke

He took a deep breath and slowly began to **exhale**.

## apnea

*n.* a temporary cessation of breathing, especially during sleep; a medical condition characterized by the repeated occurrence of such interruptions

*synonym*: breathing interruption, suspension of breath

(1) **apnea** treatment, (2) epileptic **apnea**

Sleep **apnea** is a severe condition that causes a person to stop breathing while asleep.

## inflamm

*v.* to cause very strong feelings such as anger or excitement in a person or a group of people

*synonym*: agitate, arouse, enrage

(1) **inflamm** skin, (2) **inflamm** his passion

Her eyes **inflamed** with crying.

## airway

*n.* the air passage from the nose and throat to the lungs; a designated route followed by airplanes flying from one airport to another

*synonym* : air passage, air duct, skyway

(1) **airway** blockage, (2) **airway** beacon

When performing lifesaving, the first step is to secure the **airway**.

## obstruct

v. to block or interfere with the passage, movement, or action of something or someone

*synonym* : block, impede, hinder

(1) **obstruct** an airway, (2) **obstruct** a bill

The road was blocked by a fallen tree, **obstructing** the path for all vehicles.

## pneumonia

n. an infection or inflammation of the lungs, typically caused by bacteria, viruses, or other microorganisms

*synonym* : lung infection, bronchitis

(1) bacterial **pneumonia**, (2) viral **pneumonia**

She was hospitalized with a severe case of **pneumonia**.

## invade

v. to enter aggressively into another's territory by military force for conquest and occupation

*synonym* : intrude, raid, overrun

(1) **invade** other tissues, (2) **invade** his privacy

I have no intention to **invade** your privacy.

## pathogen

n. a bacterium, virus, or other microorganism that causes disease

*synonym* : germ, microbe, bacterium

(1) plant **pathogen**, (2) the **pathogen** in the air

mRNA vaccines are approved faster because they do not contain inactivated **pathogens**.

## buildup

n. the accumulation or increase of something over time

*synonym* : accumulation, increase, growth

(1) lactic acid **buildup**, (2) huge military **buildup**

The **buildup** of stress over time can lead to health problems.

## ventilate

v. to supply fresh air to a room, building, etc.; to remove stale air from it

*synonym*: air out, circulate, freshen

(1) **ventilate** my opinion, (2) **ventilate** air

It's important to **ventilate** the room to avoid the buildup of harmful gases.

## constrict

v. to make something narrow or tight, often restricting movement or flow; to become narrow or tighter

*synonym*: squeeze, compress, tighten

(1) **constrict** blood vessels, (2) **constrict** freedom

The snake's muscles began to **constrict** around its prey.

## diffuse

*adj.* spread out widely; not concentrated in one place

*synonym*: spread, scatter

(1) **diffuse** bleeding, (2) **diffuse** cloud

Direct lighting is preferable to **diffuse** lighting when reading.

## enclose

v. to surround, as with a fence, wall, or barrier; to put within boundaries; to include

*synonym*: surround, encase, contain

(1) **enclose** a check with a letter, (2) **enclose** area

The walls were **enclosed** to create a private outdoor space.

## caregiving

n. the act of providing care and support for someone who is ill, disabled, or elderly

*synonym*: nurturing, caring, assisting

(1) **caregiving** process, (2) **caregiving** responsibilities

She devoted her life to **caregiving**, looking after her aging parents.

## inhale

v. to breathe in air or a different substance, such as smoke

*synonym*: breathe in, take in, draw in

(1) **inhale** the smoke, (2) **inhale** the aroma

He **inhaled** deeply, trying to calm down.

## airflow

*n.* the flow of air, especially around a moving object such as an aircraft or vehicle

*synonym*: current, breeze, breath

(1) **airflow** duct, (2) high-speed **airflow**

They thoroughly tested the **airflow** around their latest formula car.

## influx

*n.* the arrival or entry of a large number of people, objects, or ideas into a place or system

*synonym*: inflow, arrival, impression

(1) **influx** of capital, (2) **influx** of tourists

The **influx** of immigrants into urban areas can create significant social, economic, and political challenges for local communities.

## sedate

*adj.* calm, tranquil, and composed, often as a result of being under the influence of a sedative or tranquilizer; unhurried, deliberate, and without excessive movement or activity

*synonym*: calm, composed, tranquil

(1) **sedate** atmosphere, (2) **sedate** patient

The **sedate** environment of the library was perfect for studying.

## coronavirus

*n.* a large family of viruses that can cause illness in humans and animals, which name comes from the crown-like spikes on the surface of the virus, which can be seen under a microscope, and COVID-19 is caused by a specific type of coronavirus known as SARS-CoV-2

*synonym*: covid

(1) **coronavirus** antibody test kit, (2) **coronavirus** bankruptcy

Considering the situation of **coronavirus**, organized stopped this year's beer festival.

## pandemic

*n.* an outbreak of a disease that affects many people over a very wide area

*synonym* : outbreak

(1) flu **pandemic**, (2) global **pandemic**

They fear a **pandemic** of a new type of virus.

## **bulky**

*adj.* taking up much space or being difficult to move because of its size or weight; large and unwieldy

*synonym* : large, cumbersome, unwieldy

(1) **bulky** material, (2) **bulky** packaging

The **bulky** furniture made it difficult to move around the small room.

## **urgently**

*adv.* in a way that requires immediate action or attention, especially before anything else, because of being very important

*synonym* : promptly, immediately, swiftly

(1) tackle the problem **urgently**, (2) **urgently** required

I need to send this email **urgently**.

## **lifesaving**

*n.* the act or process of rescuing someone else's life, especially from drowning

(1) **lifesaving** efforts, (2) **lifesaving** device

The patient needs a **lifesaving** transplant operation.

## Session 2: Spelling

- |                         |   |
|-------------------------|---|
| 1. lactic acid bu____p  | <i>n.</i> the accumulation or increase of something over time   |
| 2. ai___y blockage      | <i>n.</i> the air passage from the nose and throat to the lungs; a designated route followed by airplanes flying from one airport to another  |
| 3. bacterial pn_____ia  | <i>n.</i> an infection or inflammation of the lungs, typically caused by bacteria, viruses, or other microorganisms   |
| 4. in___e other tissues | <i>v.</i> to enter aggressively into another's territory by military force for conquest and occupation  |
| 5. ex___e a big sigh    | <i>v.</i> to breathe out air or vapor from the lungs or mouth; to release or emit something slowly or gently  |
| 6. ob_____ct a bill     | <i>v.</i> to block or interfere with the passage, movement, or action of something or someone   |
| 7. ai___y beacon        | <i>n.</i> the air passage from the nose and throat to the lungs; a designated route followed by airplanes flying from one airport to another  |
| 8. se___e patient       | <i>adj.</i> calm, tranquil, and composed, often as a result of being under the influence of a sedative or tranquilizer; unhurried, deliberate, and without excessive movement or activity |

ANSWERS: 1. buildup, 2. airway, 3. pneumonia, 4. invade, 5. exhale, 6. obstruct, 7. airway, 8. sedate



9. en\_\_\_\_\_e a check with a letter      *v.* to surround, as with a fence, wall, or barrier; to put within boundaries; to include
10. in\_\_\_\_\_e the aroma      *v.* to breathe in air or a different substance, such as smoke
11. tooth al\_\_\_\_\_us      *n.* (in the plural, "alveoli") a small, hollow cavity, pit, or socket; the small sacs in the lungs, where gas exchange with the blood occurs
12. ve\_\_\_\_\_te air      *v.* to supply fresh air to a room, building, etc.; to remove stale air from it
13. di\_\_\_\_\_e bleeding      *adj.* spread out widely; not concentrated in one place
14. an in\_\_\_\_\_ed balloon      *adj.* swollen or blown up, especially with air or gas; excessively or unreasonably high
15. su\_\_\_\_\_te to death      *v.* to die or cause someone to die from lack of air or inability to breathe; to be overwhelmed or constricted by a feeling or situation, such as anxiety or oppression
16. abdominal s\_c      *n.* a bag or pouch, typically made of fabric or leather, used to hold something valuable or important; a structure resembling a bag in an animal or plant
17. lif\_\_\_\_\_ng device      *n.* the act or process of rescuing someone else's life, especially from drowning
18. ca\_\_\_\_\_ry action      *n.* a tube of small internal diameter; any of the minute tubes that carry blood

ANSWERS: 9. enclose, 10. inhale, 11. alveolus, 12. ventilate, 13. diffuse, 14. inflated, 15. suffocate, 16. sac, 17. lifesaving, 18. capillary





36. in\_\_\_x of tourists *n.* the arrival or entry of a large number of people, objects, or ideas into a place or system
37. car\_\_\_\_\_ng responsibilities *n.* the act of providing care and support for someone who is ill, disabled, or elderly
38. tr\_\_\_\_\_a infection *n.* the tube-like structure in the body through which air moves from the larynx (= a part of the human respiratory system located in the neck region) to the bronchi (= part of the respiratory system and are responsible for conducting air into the lungs), also known as the windpipe
39. cor\_\_\_\_\_us bankruptcy *n.* a large family of viruses that can cause illness in humans and animals, which name comes from the crown-like spikes on the surface of the virus, which can be seen under a microscope, and COVID-19 is caused by a specific type of coronavirus known as SARS-CoV-2
40. in\_\_\_e his privacy *v.* to enter aggressively into another's territory by military force for conquest and occupation
41. in\_\_\_\_\_e his passion *v.* to cause very strong feelings such as anger or excitement in a person or a group of people
42. su\_\_\_\_\_te fire *v.* to die or cause someone to die from lack of air or inability to breathe; to be overwhelmed or constricted by a feeling or situation, such as anxiety or oppression

ANSWERS: 36. influx, 37. caregiving, 38. trachea, 39. coronavirus, 40. invade, 41. inflame, 42. suffocate

43. s\_c contents *n.* a bag or pouch, typically made of fabric or leather, used to hold something valuable or important; a structure resembling a bag in an animal or plant
44. treated with royal ac\_\_\_\_\_m *n.* praise or admiration that is expressed publicly; (verb) to praise or admire someone or something publicly
45. co\_\_\_\_\_ct blood vessels *v.* to make something narrow or tight, often restricting movement or flow; to become narrow or tighter
46. in\_\_\_e the smoke *v.* to breathe in air or a different substance, such as smoke
47. me\_\_\_\_\_al chemistry *adj.* of or relating to the treatment or cure of disease
48. high-speed ai\_\_\_\_\_w *n.* the flow of air, especially around a moving object such as an aircraft or vehicle
49. en\_\_\_\_\_e area *v.* to surround, as with a fence, wall, or barrier; to put within boundaries; to include
50. di\_\_\_\_\_gm birth control *n.* a large, dome-shaped muscle located at the bottom of the chest cavity, essential for breathing and separating the chest and abdomen; a shallow, dome-shaped device with a flexible rim that is inserted into the vagina to cover the cervix and prevent sperm from reaching the uterus, serving as a method of birth control
51. huge military bu\_\_\_\_\_p *n.* the accumulation or increase of something over time

ANSWERS: 43. sac, 44. acclaim, 45. constrict, 46. inhale, 47. medicinal, 48. airflow, 49. enclose, 50. diaphragm, 51. buildup

52. ex\_\_\_e cigarette smoke      *v.* to breathe out air or vapor from the lungs or mouth; to release or emit something slowly or gently
53. ap\_\_a treatment      *n.* a temporary cessation of breathing, especially during sleep; a medical condition characterized by the repeated occurrence of such interruptions
54. lif\_\_\_\_\_ng efforts      *n.* the act or process of rescuing someone else's life, especially from drowning
55. plant pa\_\_\_\_\_en      *n.* a bacterium, virus, or other microorganism that causes disease
56. car\_\_\_\_\_ng process      *n.* the act of providing care and support for someone who is ill, disabled, or elderly
57. ac\_\_\_\_\_m the winner      *n.* praise or admiration that is expressed publicly; (verb) to praise or admire someone or something publicly
58. tackle the problem ur\_\_\_\_\_ly      *adv.* in a way that requires immediate action or attention, especially before anything else, because of being very important
59. traditional me\_\_\_\_\_al      *adj.* of or relating to the treatment or cure of disease
60. in\_\_\_\_\_e expense reports      *v.* to fill something with air or gas so that it becomes bigger and rounder
61. al\_\_\_\_\_us function      *n.* (in the plural, "alveoli") a small, hollow cavity, pit, or socket; the small sacs in the lungs, where gas exchange with the blood occurs
62. epileptic ap\_\_a      *n.* a temporary cessation of breathing, especially during sleep; a medical condition characterized by the repeated occurrence of such interruptions

ANSWERS: 52. exhale, 53. apnea, 54. lifesaving, 55. pathogen, 56. caregiving, 57. acclaim, 58. urgently, 59. medicinal, 60. inflate, 61. alveolus, 62. apnea

63. ai\_\_\_\_w duct *n.* the flow of air, especially around a moving object such as an aircraft or vehicle
64. se\_\_\_e atmosphere *adj.* calm, tranquil, and composed, often as a result of being under the influence of a sedative or tranquilizer; unhurried, deliberate, and without excessive movement or activity
65. di\_\_\_\_e cloud *adj.* spread out widely; not concentrated in one place
66. in\_\_\_\_e skin *v.* to cause very strong feelings such as anger or excitement in a person or a group of people

ANSWERS: 63. airflow, 64. sedate, 65. diffuse, 66. inflame

## Session 3: Fill in the Blanks

1. They thoroughly tested the \_\_\_\_\_ around their latest formula car.  
*n.* the flow of air, especially around a moving object such as an aircraft or vehicle
2. The patient needs a \_\_\_\_\_ transplant operation.  
*n.* the act or process of rescuing someone else's life, especially from drowning
3. Individuals with a weak \_\_\_\_\_ may experience difficulty breathing during physical activity.  
*n.* a large, dome-shaped muscle located at the bottom of the chest cavity, essential for breathing and separating the chest and abdomen; a shallow, dome-shaped device with a flexible rim that is inserted into the vagina to cover the cervix and prevent sperm from reaching the uterus, serving as a method of birth control
4. The \_\_\_\_\_ properties of this herb have been known to help with various ailments.  
*adj.* of or relating to the treatment or cure of disease
5. The snake's muscles began to \_\_\_\_\_ around its prey.  
*v.* to make something narrow or tight, often restricting movement or flow; to become narrow or tighter
6. Sleep \_\_\_\_\_ is a severe condition that causes a person to stop breathing while asleep.  
*n.* a temporary cessation of breathing, especially during sleep; a medical condition characterized by the repeated occurrence of such interruptions
7. The actor's performance in the play earned her widespread \_\_\_\_\_ from the theater community.  
*n.* praise or admiration that is expressed publicly; (verb) to praise or admire someone or something publicly

ANSWERS: 1. airflow, 2. lifesaving, 3. diaphragm, 4. medicinal, 5. constrict, 6. apnea, 7. acclaim



8. They fear a \_\_\_\_\_ of a new type of virus.
- n.* an outbreak of a disease that affects many people over a very wide area
9. Considering the situation of \_\_\_\_\_ organized stopped this year's beer festival.
- n.* a large family of viruses that can cause illness in humans and animals, which name comes from the crown-like spikes on the surface of the virus, which can be seen under a microscope, and COVID-19 is caused by a specific type of coronavirus known as SARS-CoV-2
10. The \_\_\_\_\_ environment of the library was perfect for studying.
- adj.* calm, tranquil, and composed, often as a result of being under the influence of a sedative or tranquilizer; unhurried, deliberate, and without excessive movement or activity
11. The road was blocked by a fallen tree, \_\_\_\_\_ the path for all vehicles.
- v.* to block or interfere with the passage, movement, or action of something or someone
12. The athlete's ego became \_\_\_\_\_ by their success.
- adj.* swollen or blown up, especially with air or gas; excessively or unreasonably high
13. There are many \_\_\_\_\_ vessels in the gills of fish.
- n.* a tube of small internal diameter; any of the minute tubes that carry blood
14. mRNA vaccines are approved faster because they do not contain inactivated \_\_\_\_\_.
- n.* a bacterium, virus, or other microorganism that causes disease

ANSWERS: 8. pandemic, 9. coronavirus, 10. sedate, 11. obstructing, 12. inflated, 13. capillary, 14. pathogens

15. She devoted her life to \_\_\_\_\_ looking after her aging parents.  
*n.* the act of providing care and support for someone who is ill, disabled, or elderly
16. She was hospitalized with a severe case of \_\_\_\_\_.  
*n.* an infection or inflammation of the lungs, typically caused by bacteria, viruses, or other microorganisms
17. The walls were \_\_\_\_\_ to create a private outdoor space.  
*v.* to surround, as with a fence, wall, or barrier; to put within boundaries; to include
18. Her eyes \_\_\_\_\_ with crying.  
*v.* to cause very strong feelings such as anger or excitement in a person or a group of people
19. People can \_\_\_\_\_ from a lack of oxygen in confined spaces.  
*v.* to die or cause someone to die from lack of air or inability to breathe; to be overwhelmed or constricted by a feeling or situation, such as anxiety or oppression
20. The \_\_\_\_\_ furniture made it difficult to move around the small room.  
*adj.* taking up much space or being difficult to move because of its size or weight; large and unwieldy
21. I placed my valuables in the \_\_\_\_ before heading out on my hike.  
*n.* a bag or pouch, typically made of fabric or leather, used to hold something valuable or important; a structure resembling a bag in an animal or plant
22. I need to send this email \_\_\_\_\_.  
*adv.* in a way that requires immediate action or attention, especially before anything else, because of being very important

ANSWERS: 15. caregiving, 16. pneumonia, 17. enclosed, 18. inflamed, 19. suffocate, 20. bulky, 21. sac, 22. urgently

23. The \_\_\_\_\_ of stress over time can lead to health problems.  
*n.* the accumulation or increase of something over time
24. She \_\_\_\_\_ the balloons for the party.  
*v.* to fill something with air or gas so that it becomes bigger and rounder
25. Damage to the walls of an \_\_\_\_\_ can lead to reduced lung function.  
*n.* (in the plural, "alveoli") a small, hollow cavity, pit, or socket; the small sacs in the lungs, where gas exchange with the blood occurs
26. It's important to \_\_\_\_\_ the room to avoid the buildup of harmful gases.  
*v.* to supply fresh air to a room, building, etc.; to remove stale air from it
27. When performing lifesaving, the first step is to secure the \_\_\_\_\_.  
*n.* the air passage from the nose and throat to the lungs; a designated route followed by airplanes flying from one airport to another
28. Inhaling irritants can cause inflammation of the \_\_\_\_\_ and lead to coughing.  
*n.* the tube-like structure in the body through which air moves from the larynx (= a part of the human respiratory system located in the neck region) to the bronchi (= part of the respiratory system and are responsible for conducting air into the lungs), also known as the windpipe
29. The \_\_\_\_\_ of immigrants into urban areas can create significant social, economic, and political challenges for local communities.  
*n.* the arrival or entry of a large number of people, objects, or ideas into a place or system
30. I have no intention to \_\_\_\_\_ your privacy.  
*v.* to enter aggressively into another's territory by military force for conquest and occupation

ANSWERS: 23. buildup, 24. inflated, 25. alveolus, 26. ventilate, 27. airway, 28. trachea, 29. influx, 30. invade

31. He took a deep breath and slowly began to \_\_\_\_\_.

- v. to breathe out air or vapor from the lungs or mouth; to release or emit something slowly or gently

32. Direct lighting is preferable to \_\_\_\_\_ lighting when reading.

- adj.* spread out widely; not concentrated in one place

33. He \_\_\_\_\_ deeply, trying to calm down.

- v. to breathe in air or a different substance, such as smoke

ANSWERS: 31. exhale, 32. diffuse, 33. inhaled