



CELEBRATIONS

LIVING LIFE TO THE FULLEST

SESSION 7.

AIR

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General Conference Health Ministries
Celebrations – Air



GENERAL CONFERENCE
Adventist
Health Ministries



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CELEBRATIONS
LIVING LIFE TO THE FULLEST

OBJECTIVES:

Participants will:

- Know the importance of breathing clean, fresh air.
- Understand the detrimental effects of breathing polluted air outside or inside.
- Learn how to breathe deeply, using the diaphragm.

MATERIALS NEEDED:

- Leader's notes
- PowerPoint
- Participant worksheet
- Computer (for your PowerPoint presentation)
- Projector and screen
- Tables and chairs
- Sound system (for large classes)

TIPS AND GUIDELINES

01. **Come prepared.** Review the entire content and handout materials before the session. Arrive early for your presentation. Set up your equipment and test everything before the participants arrive.
02. **Greet the participants as they arrive.** One of our goals is to build relationships within the community. Greeting people as they enter puts them at ease and can open doors for further dialogue.
03. **Start on time.** The presentations are designed to be less than 1.5 hours. Honor that time frame.
04. **Welcome students and introduce yourself.** This introduction should take only 30 to 60 seconds.
05. **Introduce the topic of the presentation.** A brief introduction appears in the script under slide 2. Keep it short. Introductions should get the participants' attention, not bore them.
06. **Distribute the participant worksheet for note taking.**
07. **Give the PowerPoint presentation.**
08. **Introduce and distribute the quiz.** Detailed instructions are given in the script. Have the participants work in small groups of two to four, discussing and completing the quiz together. (If the nature of your group warrants it, lead the discussion of the quiz questions from the front, soliciting responses from the participants.) Give the participants about 20 minutes to complete the quiz. Monitor the participants' progress, adjusting the time as needed to allow them time to complete the worksheet. Then call them back together as a group and discuss the answers using the answer key.
09. **Closing remarks and reminder.** Introduce the next session's topic, and remind them of the date, and time of the session.
10. **Thank the participants for coming, and visit with them as they are leaving.**



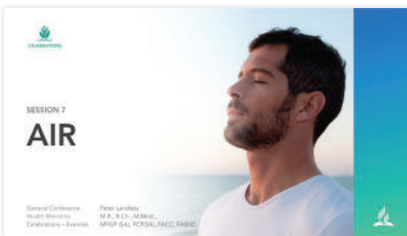
CELEBRATIONS
LIVING LIFE TO THE FULLEST

WELCOME



Slide 1 (AIR)

Welcome to another CELEBRATIONS presentation. During our time together we will discuss air, the seventh healthful living principle in the CELEBRATIONS acronym.



Slide 2 (CELEBRATING AIR)

The rush of air that whipped passed their faces was invigorating! It didn't matter that the temperature was near freezing. Orville was guiding the first controlled flight, and his brother, Wilbur, was running alongside the wing of the flying machine. It was December 17, 1903, and the Wright brothers made a total of four short but historic flights.

Experiencing the success of such a momentous achievement made the practice runs, the hard work, and the criticism of the skeptics pale into insignificance. Apart from the sheer dogged determination of the Wright brothers and the foundational experience of other aviation pioneers such as Otto Lilienthal, without the air and its physical properties providing the "lift," flight never would have taken place. Lift is a complex physical phenomenon that enables birds and airplanes to fly. Other properties of air allow living creatures to breathe and exist.





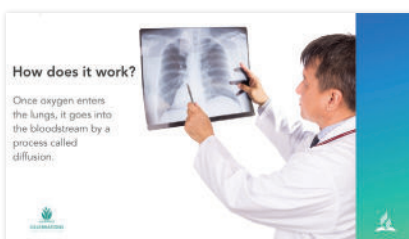
Slide 3 (SEVERE AIR POLLUTION ENSUED)

Those early flight experiences kindle feelings in us of excitement and exhilaration. In contrast, some other events elicit discouragement and despair. Shortly after midnight on December 3, 1984, in the city of Bhopal, India, for example, a poisonous gas cloud escaped from a pesticide factory. The toxic gas covered an area of 30 square miles, immediately killing thousands of people and causing illness for many more. Experts believe that as time went on, many more people eventually perished as a result of this environmental disaster and the severe air pollution that ensued. Clean air is essential and literally constitutes the physical breath of life.



Slide 4 (SEVERE AIR POLLUTION ENSUED)

Atmospheric air comprises a mixture of gases: 20.98 percent oxygen (O₂), 0.04 percent carbon dioxide (CO₂), 78.06 percent nitrogen (N₂), and 0.92 percent inert (inactive) constituents such as argon and helium. Oxygen is the vital component of air that sustains life. Breathing is the process that moves the air in and out of the lungs and continues the cycle of taking in oxygen and releasing carbon dioxide. This process takes in and exchanges approximately 20,000 liters (5,283 gallons) of air daily. The body carries approximately 1.89 liters (2 quarts) of oxygen in the lungs, blood, and other tissues at any given time.



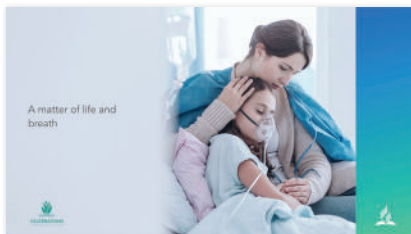
Slide 5 (SEVERE AIR POLLUTION ENSUED)

Once oxygen enters the lungs, it goes into the bloodstream by a process called diffusion. The heart and circulatory system then pump the blood to every tissue of the body, delivering life-giving oxygen to the tissues and cells. Oxygen promotes efficient cell function by facilitating the metabolism of nutrients and the transfer of energy within the cells.



Slide 6 (SEVERE AIR POLLUTION ENSUED)

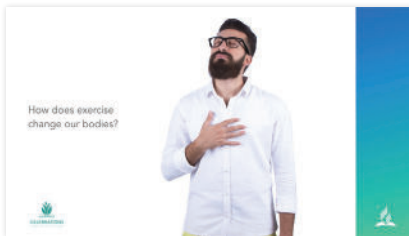
The exchange of gases in the lungs occurs across a thin wall approximately two cells thick. These cells line the tiny air sacs of the lungs (alveoli) and also the small blood vessels (capillaries), which carry the oxygen-rich blood to the rest of the body. The waste carbon dioxide is released into the air sacs and expelled from the lungs. The oxygen is carried by millions of red blood cells, which nourish all the body tissues and cells. The exchange of oxygen and carbon dioxide is accomplished within milliseconds, and it takes about only one minute for the newly acquired oxygen to circulate through the body! The lungs are wonderfully designed in order to reach this efficiency and contain more than 600 million of these alveoli (air sacs).



Slide 7 (SEVERE AIR POLLUTION ENSUED)

The body ensures normal oxygen levels (saturation) by driving the respiration (breathing rate) from a part of the brain called the medulla oblongata in the brain stem. These specialized brain centers automatically regulate the rate and depth of breathing according to the needs of the body while carbon dioxide levels play a very important role in stimulating breathing. It is for this reason that it's not possible for a healthy person to voluntarily stop breathing for prolonged, indefinite time periods. If one does not inhale fresh air, the level of carbon dioxide builds up in the blood, resulting in the feeling of tremendous "air hunger" forcing one to breathe. This miraculous, irrepressible reflex is lifesaving; if breathing stops, the body's oxygen levels drop dangerously low within minutes, leading to permanent brain damage, followed by death. Brain cells begin to die within four minutes of oxygen deprivation. This fact emphasizes the accuracy of the American Lung Association's motto, "It's a matter of life and breath." We need oxygen for life, and pure fresh air for health.





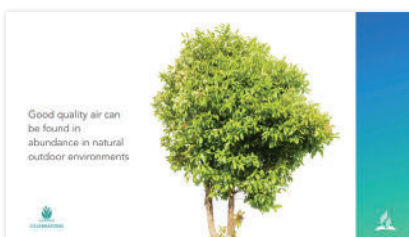
Slide 8 (SEVERE AIR POLLUTION ENSUED)

During exercise, the increased cellular activity of the muscles produces more carbon dioxide. The carbon dioxide acts on specialized receptors and the respiration center in the brain, causing a higher rate of respiration, which is also deeper. During rest, the breathing rate is lower because the carbon dioxide production is lower. Control mechanisms, however, ensure adequate breathing to provide appropriate amounts of oxygen to all body cells. In addition to removing carbon dioxide from the body, breathing results in a loss of water from the body in the form of water vapor. This is one of the forms of “invisible” water loss, so named because it is not seen or obvious. Prolonged, rapid, deep breathing can aggravate dehydration; this may occur in prolonged exercise, heat exhaustion, and disease states.



Slide 9 (SEVERE AIR POLLUTION ENSUED)

High-quality fresh air is pure and clean. The life-giving oxygen molecules should be unpolluted. Deep breathing of fresh air imparts an improved sense of well-being. It increases the rate and quality of growth in plants and animals. It improves the function of the lung's protective cilia. These are the microscopic, fine, hair-like structures that help to keep dust and fine particles as well as irritants from entering the lungs. Good oxygenation lowers the body temperature and resting heart rate, and decreases the survival of certain bacteria and viruses found in the air.

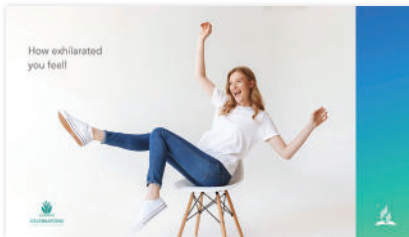


Slide 10 (SEVERE AIR POLLUTION ENSUED)

Fresh air is often destroyed and polluted. This can occur through inadequate ventilation of dwellings, especially where open cooking fires and stoves are used. In cities the air in buildings is often recirculated through air-conditioning systems, increasing the pollution from city smog, tobacco smoke, and industrial and



other pollutants. On the other hand, good quality air usually can be found in abundance in natural outdoor environments, especially around trees (sometimes called the “lungs of the earth”); green plants; mountains and forests; lakes, oceans, rivers, and waterfalls; and after rainfall. It’s estimated that the algae in the ocean provide almost 90 percent of the oxygen in our atmosphere, with the rest coming from land plants.



Slide 11 (HOW EXHILARATED YOU FEEL!)

Fresh air, when unpolluted, is invigorating! Notice how exhilarated you feel near a waterfall or at the ocean. This may be one of the reasons for the popularity of holiday resorts and vacation areas in the mountain areas and at the seaside.



Slide 12 (PROTECTING OUR INTRESTS)

The air also has many protective qualities. On a global level the air and its suspended water vapor protect the earth and its inhabitants from solar radiation and the cold vacuum of outer space. The air recycles water and many chemicals to moderate the climate. Within this atmospheric envelope, life is found over a very wide range of altitudes and temperatures. Some life-forms require large amounts of oxygen; others only a scant amount. Humans need to have optimal health, and fresh, clean air.



Slide 13 (AIR POLLUTION)

Polluted air is found on freeways, at airports, and in closed, poorly ventilated areas. Polluted, smoke-filled air can be associated with increased anxiety, migraine headaches, nausea, vomiting, eye problems, irritability, and respiratory congestion. The World Health Organization (WHO) estimates that more than 2 million people die every year from inhaling tiny pollutant particles present in indoor and outdoor air pollution. These tiny



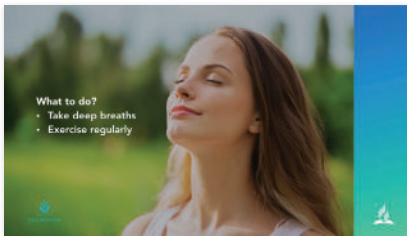
particles, called PM-10 particles (10 micrometers or less), can penetrate the lungs and may enter the bloodstream causing heart disease, lung cancer, asthma, and acute lower respiratory infections.¹ Some 6 million people, mostly children, die each year from acute respiratory infections, complicated particularly by indoor pollution often originating from unvented or poorly vented cooking facilities. In many cities the PM-10 particle level is 15 times above the recommended safety guidelines. The evidence that air pollution results in increased strokes and vascular disease including heart attacks is growing. Additionally, researcher Jennifer Weuve and her colleagues have shown that long-term exposure to air pollution speeds up cognitive decline in older women and may increase the progression to dementia.^{2 3 4}



Slide 14 (SECONDHAND SMOKE)

The results of pollution described above are sometimes beyond the control of the individual. This is often the case for the “passive smoker,” one who is exposed to secondhand tobacco smoke. Children frequently are victims of secondhand smoke (SHS) in homes where parents and other family members smoke. These children have an increased risk of suffering lower respiratory tract infections and middle ear infections.⁵ The severity and number of asthma episodes in asthmatic children are increased by exposure to SHS. There also is evidence linking tobacco smoke pollution to increased Sudden Infant Death Syndrome (SIDS).⁶ Adults exposed to SHS have an increased risk of lung cancer estimated at 20 percent in women and 30 percent in men who live with a smoker.⁷ Smoke pollution in the workplace increases the risk of nonsmokers developing lung cancer by 16 to 19 percent.

1 World Health Organization, “Tackling the global clean air challenge,” Press Release September 2011; <http://bit.ly/p90Y2g>. Accessed April 4, 2012.
2 J. Weuve, et al, “Exposure to particulate air pollution and cognitive decline in older women,” *Archives of Internal Medicine*, 2012; 172(3), pp. 219-227.
3 G. A. Wellenius, et al, “Ambient air pollution and the risk of ischemic stroke,” *Archives of Internal Medicine*, 2012; 172(3), pp. 229-234.
4 R. Bhatia, “Policy and regulatory action can reduce harms from particulate pollution,” *Archives of Internal Medicine*, 2012; 172(3), pp. 227, 228.
5 D. P. Strachan, A. G. Cook, “Parental smoking and lower respiratory illness in infancy and early childhood,” *Thorax*, 1997, 52: pp. 905-914.
6 *Ibid.*, pp. 1081-1094.
7 A. K. Hackshaw, et al, “The accumulated evidence on lung cancer and environmental tobacco smoke,” *British Medical Journal*, 1997, 315: pp. 980-988.



Slide 15 (WHAT TO DO?)

What can we do to ensure that we get adequate amounts of clean air and vital oxygen? Avoid tobacco smoke, and, as much as possible, stay out of polluted environments. Avoid shallow breathing; take deep breaths and exercise regularly. This helps us take full advantage of our natural lung capacity and prevents the lower parts of the lung from being under-ventilated. Take intentional breaks during work time to breathe deeply—outdoors, if possible. Good posture and diaphragmatic breathing also are helpful in obtaining optimal respiration, ventilation, and blood flow through the lungs.



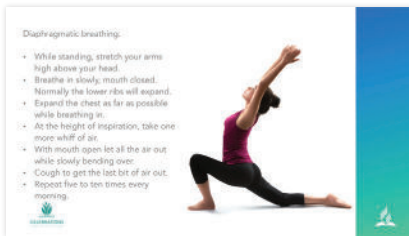
Slide 16 (GOOD POSTURE)

Good posture: The late Dr. Mervyn Hardinge, dean emeritus of Loma Linda University School of Public Health, suggested these five steps to help individuals acquire good posture habits:

- Flatten the plane of the pelvis by contracting the large gluteus muscles.
- Stand tall, thus decreasing the forward and backward curves of the spine.
- Keep the head back, chin horizontal, and eyes looking straight ahead.
- The feet should be slightly apart and directed forward, the upper limbs hanging naturally by the side.
- Exercise so as to stretch and strengthen muscles.

Constriction of the thoracic cage by poor posture or even states of disease often results in diminished lung volume and respiratory reserve. Good posture enhances one's respiratory capacities and exercise capabilities.

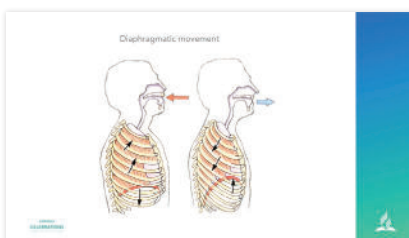




Slide 17 (DIAPHRAGMATIC BREATHING)

Diaphragmatic breathing: People who are fit and exercise regularly also strengthen the muscles of respiration, of which the diaphragm is the most important. To practice diaphragmatic breathing do the following:

- While standing, stretch your arms high above your head.
- Breathe in slowly, mouth closed. Normally the lower ribs will expand.
- Expand the chest as far as possible while breathing in.
- At the height of inspiration, take one more whiff of air.
- With mouth open let all the air out while slowly bending over.
- Cough to get the last bit of air out.
- Repeat five to ten times every morning



Slide 18 (DIAPHRAGMATIC MOVEMENT)

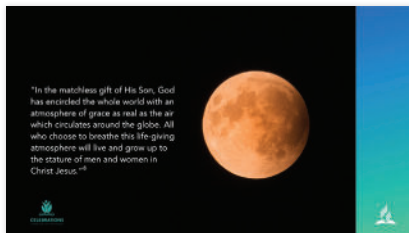
Diaphragmatic breathing aerates the respiratory tract and reduces the risk of infection. Quiet breathing moves about 500 cubic centimeters of air in and out of the lungs, whereas the total volume that can pass in and out of the lungs in one breath—the vital capacity—is about 4,000 cubic centimeters, eight times greater than during quiet breathing.

The cells most sensitive to lack of oxygen are those of the brain. The brain is the seat of judgment, reason, intellect, and the will—the control center of our entire being. It's essential to ensure optimal oxygenation of the brain by avoiding under ventilated areas where carbon dioxide, carbon monoxide, and other pollutants may interfere with normal oxygen availability.



Slide 19 (GENESIS 2:7)

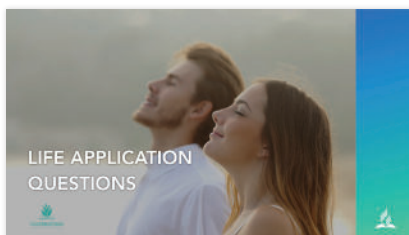
The atmosphere surrounding the earth provides our wonderfully designed and created bodies with the literal breath of life. Right in the beginning the Lord God our Creator made this provision to support life: “The Lord God formed man of the dust of the ground, and breathed into his nostrils the breath of life; and man became a living being” (Gen. 2:7, NKJV). We have the privilege and responsibility to ensure that our body receives the purest, freshest air possible. We also need to care for the environment and do all we can, individually and collectively, to prevent and minimize air pollution. We cannot do this alone. We need the sustaining power and grace of the loving creator God.



Slide 20 (DIAPHRAGMATIC MOVEMENT)

“In the matchless gift of His Son, God has encircled the whole world with an atmosphere of grace as real as the air which circulates around the globe. All who choose to breathe this life-giving atmosphere will live and grow up to the stature of men and women in Christ Jesus.”⁸

As we celebrate a vital and fulfilled life, we need to breathe deeply, exercise well, enjoy the beauty of the great outdoors, and never forget the indwelling presence of God, the Breath of Life.



Slide 21 (LIFE APPLICATION QUESTIONS)

We will now focus on some life application questions regarding air. We will review them carefully so that you have time to consider the questions and apply what you are learning to your life. Please write your responses in your participant worksheets. You are welcome to ask questions and to look back over the material.

⁸ Ellen G. White, *Steps to Christ* (Hagerstown, Md.: Review and Herald Publishing Association, 1956), p. 68.



Life application questions

- What choices can I make that will help reduce global air pollution?
- Does the use of my car, electricity, and other energy sources make a difference?



Slide 22 (LIFE APPLICATION QUESTIONS)

What choices can I make that will help reduce global air pollution?

Does the use of my car, electricity, and other energy sources make a difference?

Life application questions


- Do I have access to any forums in which I could participate to advocate for cleaner air, such as the prevention of smoking in public places?


Slide 23 (LIFE APPLICATION QUESTIONS)

Do I have access to any forums in which I could participate to advocate for cleaner air, such as the prevention of smoking in public places?

Life application questions

- What has the Creator provided in nature to promote cleaning of the air?


Slide 24 (LIFE APPLICATION QUESTIONS)

What has the Creator provided in nature to promote cleaning of the air?

Life application questions


- Do I have the option of planting some of these on my own property or in public parks and other community areas?


Slide 25 (LIFE APPLICATION QUESTIONS)

Do I have the option of planting some of these on my own property or in public parks and other community areas?

Life application questions

- On his way to work each morning, Samuel passes a street corner where day laborers wait for someone to give them employment.


Slide 26 (LIFE APPLICATION QUESTIONS)


At this time we will divide into small groups of three or four. This will be a great opportunity for you to get to know one another and to work together as we discuss the next series of questions in our groups. You may write your responses and/or the group's responses in your Celebrating Air participant worksheets.

On his way to work each morning, Samuel passes a street corner where day laborers wait for someone to give them employment.



Life application questions

- He noticed that most of them smoke or chew tobacco. In what ways could he help them to recognize the health dangers of tobacco?



Slide 27 (LIFE APPLICATION QUESTIONS)

He noticed that most of them smoke or chew tobacco. In what ways could he help them to recognize the health dangers of tobacco?

Life application questions

- Would organizing smoking-cessation programs at his church and inviting them to attend be beneficial?
- What effect would distributing brochures or pamphlets on the dangers of smoking have?



Slide 28 (LIFE APPLICATION QUESTIONS)

Would organizing smoking-cessation programs at his church and inviting them to attend be beneficial?

What effect would distributing brochures or pamphlets on the dangers of smoking have?

Life application questions

- What comes to mind when I consider the wonderful way in which carbon dioxide is continuously removed from the air and oxygen is produced to sustain my life?




Slide 29 (LIFE APPLICATION QUESTIONS)

What comes to mind when I consider the wonderful way in which carbon dioxide is continuously removed from the air and oxygen is produced to sustain my life?

Life application questions

- What is my response to my Creator as I consider the finely tuned mechanism that causes me to breathe at the rate and depth that supply me with the sufficient amount of oxygen?




Slide 30 (LIFE APPLICATION QUESTIONS)

What is my response to my Creator as I consider the finely tuned mechanism that causes me to breathe at the rate and depth that supply me with the sufficient amount of oxygen?

Life application questions

- How can I praise and thank Him for this wonderful gift, in both words and actions?




Slide 31 (LIFE APPLICATION QUESTIONS)

How can I praise and thank Him for this wonderful gift, in both words and actions?



Life application questions


- How can I ensure that I am making full use of the 3,500 cubic centimeters of air space in my lungs that doesn't get used when I'm doing quiet breathing?


Slide 32 (LIFE APPLICATION QUESTIONS)

How can I ensure that I am making full use of the 3,500 cubic centimeters of air space in my lungs that doesn't get used when I'm doing quiet breathing?

Life application questions


- What is "diaphragmatic breathing"?
- How can I exercise in a way that forces extra breathing?


Slide 33 (LIFE APPLICATION QUESTIONS)

What is "diaphragmatic breathing"?
How can I exercise in a way that forces extra breathing?

Life application questions

- Julia yawns a lot after sitting for a long time. Could it be that she is not breathing well because she's too sedentary?
- What improvements could be made to her posture while sitting and walking?
- How much would one have to move around every half hour to help?


Slide 34 (LIFE APPLICATION QUESTIONS)

Julia yawns a lot after sitting for a long time. Could it be that she is not breathing well because she's too sedentary?
What improvements could be made to her posture while sitting and walking?
How much would one have to move around every half hour to help?

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Slide 35 (LIFE APPLICATION QUESTIONS)

We are glad that you took the time to attend this discussion. We look forward to seeing you at the next CELEBRATIONS presentation!



Peter Landless, M.B., B.Ch., M.Med., MFGP (SA), FCP (SA), FACC, FASNC, is from South America, where he served as a pastor as well as medical doctor. He is director of the Health Department at the General Conference.


Slide 35 (LIFE APPLICATION QUESTIONS)

Author Peter Landless, M.B., B.Ch., M.Med., MFGP (SA), FCP (SA), FACC, FASNC, is from South Africa, where he served as a pastor as well as medical doctor. He is director of the Health Department at the General Conference.



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SESSION 3 WORKSHEET

PLEASE NOTE: THE FOLLOWING OUTLINE IS PROVIDED AS A GUIDE FOR PERSONAL NOTE TAKING.

Please note: The following outline is provided as a guide for personal note taking.

The A in CELEBRATIONS stands for _____.

Air is composed of roughly 78 percent _____,
21 percent _____, and 1 percent carbon dioxide and
inert gasses. It is the _____ in air that sustains life.

When we breathe, we inhale oxygen and exhale _____.

Every day we inhale about _____ liters of air.

Oxygen enters the lungs and passes into the _____;
the heart pumps it to every cell in the body.

During exercise, muscles produce more _____,
which alerts the respiration receptors to _____.



Breathing adequate oxygen _____ the body temperature and _____ the resting heart rate.

Air pollution is not just a problem in cities and industrial areas. It can also occur in a poorly _____ dwelling or when air is _____ through an air conditioner, thus building up pollutants in the air.

Air protects the earth and all its life forms from _____ and the cold vacuum of outer space.

Breathing polluted air can cause many health problems, including:

- 1.....
- 2.....
- 3.....
- 4.....
- 5.....
- 6.....
- 7.....
- 8.....
- 9.....
- 10.....



We can ensure that we get adequate amounts of clean air by:

- 1.....
- 2.....
- 3.....
- 4.....

Fit people who exercise regularly strengthen the _____,
the major muscle of respiration.

The cells most sensitive to lack of oxygen are in the _____.

These cells begin to die just minutes after breathing stops.



CELEBRATING EXERCISE **QUIZ**

SHORT ANSWER: WRITE A SHORT RESPONSE THAT BEST ANSWERS THE FOLLOWING QUESTIONS

Question 1

Based on my level of activity,

A. What comes to mind when I consider the wonderful way in which carbon dioxide is continuously removed from the air and oxygen is produced to sustain my life?

B. What is my response to my Creator as I consider the finely tuned mechanism that causes me to breathe at the rate and depth that supplies me with the sufficient amount of oxygen?

C. How can I praise and thank Him for this wonderful gift, in both words and actions?



Question 2

A. How can I ensure that I am making full use of the 3,500 cubic centimeters of air space in my lungs that doesn't get used when I'm doing quiet breathing?

B. What is "diaphragmatic breathing"?

C. How can I exercise in a way that forces extra breathing?

GROUP DISCUSSION

Question 3

On his way to work each morning, Samuel passes a street corner where day laborers wait for someone to give them employment. He noticed that most of them smoke or chew tobacco.

A. In what ways could he help them to recognize the health dangers of tobacco?



B. Would organizing smoking-cessation programs at his church and inviting them to attend be beneficial?

C. What effect would distributing brochures or pamphlets on the dangers of smoking have?

Question 4

Julia yawns a lot after sitting for a long time.

A. Why does this happen?

B. What improvements could be made to her posture while sitting and walking?

C. How much would one have to move around every half hour to help?

Question 5

- A.** What choices can we make that will help reduce global air pollution?
- B.** Does the frequent use of vehicles and the amount of electricity, and other energy sources we use make a difference?
- C.** Do I have access to forums in which I could participate to advocate for cleaner air, such as the prevention of smoking in public places?
- D.** What has the Creator provided in nature to promote cleaning of the air?
- E.** Do I have the option of planting trees on my own property or in public parks and other community areas?



CELEBRATING EXERCISE QUIZ/**KEY**

Facilitators: please note that answers to the questions will vary due to the personal nature of the response. Write a short response that best answers the following questions.

Question 1

A. What comes to mind when I consider the wonderful way in which carbon dioxide is continuously removed from the air and oxygen is produced to sustain my life?

Answers will vary

B. What is my response to my Creator as I consider the finely tuned mechanism that causes me to breathe at the rate and depth that supplies me with the sufficient amount of oxygen?

Answers will vary

C. How can I praise and thank Him for this wonderful gift, in both words and actions?

Answers will vary

Question 2

A. How can I ensure that I am making full use of the 3,500 cubic centimeters of air space in my lungs that don't get used when I'm doing quiet breathing?

Avoid tobacco smoke and, as much as possible, stay out of polluted environments.

Avoid shallow breathing; take deep breaths and exercise regularly. This helps us to take full advantage of the natural lung capacity and prevents the lower parts of the lung being under-ventilated. Take intentional breaks during work time to breathe deeply—outdoors, if possible. Good posture and diaphragmatic breathing also are helpful in obtaining optimal respiration, ventilation, and blood flow through the lungs.

B. What is “diaphragmatic breathing”?

Breathing that is done by contracting the diaphragm.

To practice diaphragmatic breathing do the following:

- While standing, stretch your arms high above your head.
- Breathe in slowly, mouth closed. Normally the lower ribs will expand.
- Expand the chest as far as possible while breathing in.
At the height of inspiration, take one more whiff of air.
- With mouth open let all the air out while slowly bending over.
Cough to get the last bit of air out.
- Repeat five to ten times every morning.

Diaphragmatic breathing aerates the respiratory tract and reduces the risk of infection.

C. How can I exercise in a way that forces extra breathing?

Answers will vary

GROUP DISCUSSION

Question 3

On his way to work each morning, Samuel passes a street corner where day laborers wait for someone to give them employment. He noticed that most of them smoke or chew tobacco.

A. In what ways could he help them to recognize the health dangers of tobacco?

Answers will vary

B. Would organizing smoking-cessation programs at his church and inviting them to attend be beneficial?

Answers will vary

C. What effect would distributing brochures or pamphlets on the dangers of smoking have?

Answers will vary



Question 4

Julia yawns a lot after sitting for a long time.

A. Why does this happen?

Julia is sitting too long and breathing shallowly. She could take intentional breaks during work time to breathe deeply—outdoors, if possible. It's essential to ensure optimal oxygenation of the brain by avoiding under-ventilated areas where carbon dioxide, carbon monoxide, and other pollutants may interfere with normal oxygen availability. Good posture is also helpful in obtaining optimal respiration.

B. What improvements could be made to her posture while sitting and walking?

Answers will vary

C. How much would one have to move around every half hour to help?

Answers will vary and may include:

The exchange of oxygen and carbon dioxide is accomplished within milliseconds, and it takes about only one minute for the newly acquired oxygen to circulate through the body.

Question 5

A. What choices can we make that will help reduce global air pollution?

Answers will vary

B. Does the frequent use of vehicles and the amount of electricity, and other energy sources we use make a difference?

Answers will vary

C. Do I have access to forums in which I could participate to advocate for cleaner air, such as the prevention of smoking in public places?

Answers will vary

D. What has the Creator provided in nature to promote cleaning of the air?

All trees, shrubs and plants improve air quality because they absorb carbon dioxide and release oxygen. Good quality air usually can be found in abundance in natural outdoor environments, especially around trees (sometimes called the “lungs of the earth”). It is estimated that the algae in the ocean provide almost 90 percent of the oxygen in our atmosphere, with the rest coming from land plants.

E. Do I have the option of planting trees on my own property or in public parks and other community areas?

Answers will vary