

Asthma Adventures

Asthma Camp Activities Manual

was developed for
The Consortium on Children's Asthma Camps

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Anatomy Activities



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Goals



To gain understanding about the function of the respiratory system and its parts.



To explore children’s perception and knowledge of their respiratory system.



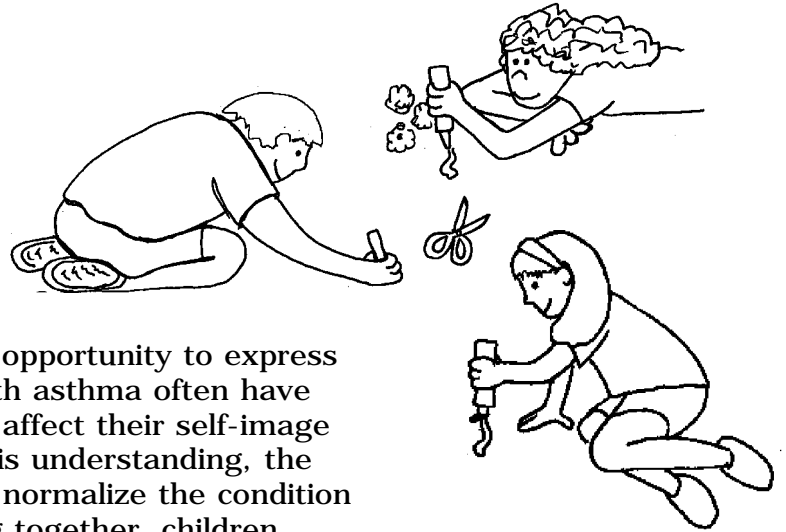
To receive education on the process of asthma.

My Asthma

Ages 5-12

Activity Objective:

This activity provides participants with the opportunity to express their perception of their lungs. Children with asthma often have misconceptions about their lungs; this can affect their self-image and attitude about having asthma. With this understanding, the group leader can educate the children and normalize the condition of asthma. By using art media and working together, children incorporate their knowledge of the internal workings of the respiratory system.



Instructions:

- Provide large paper and markers (crayons, paint or finger paints), glue, construction paper (tissue paper, glitter, pom poms, yarn or any other decorative materials). Participants could also go on a hunt outside for materials (leaves, rocks, sticks, pine cones, etc.).
- Ask the participants to create a collage of what they think their asthma looks like: color, shape, size, feelings. Encourage them to be creative. Older children could even write a short description of how they think their lungs work and attach it to their picture. The pictures could be created outside using only items from nature.
- *Optional:* Have the participants lie on the mural paper while a partner outlines their body with a marker. The participants can draw their respiratory parts inside the outline: the lungs, bronchial tubes, alveoli, diaphragm, trachea, muscle bands, etc. Hair and clothing outlines may also be added.
- Have participants share their drawings and perceptions.
- Provide appropriate education to correct any misconceptions.
- Create an asthma art gallery displaying all of the “works of art”.

Material Needed:

- Large paper/mural paper
- Markers (crayons, paint or finger paints)
- Glue
- Construction paper
- Misc. (tissue paper, glitter, pom poms, yarn or any other decorative materials)
- Pens and lined paper (if needed)



Asthma Machine

Ages 5-12

Activity Objective:

This activity allows the children to express their knowledge of the respiratory system in an active, fun manner. It also illustrates how the various parts work together as one.



Instructions:

- Group leader creates cards with pictures or words that include: lungs, smooth muscle bands, mucus, alveoli, diaphragm, bronchial tubes and “Breathing Boss” (or copy cards on page 6).
- All cards are placed in a container and each child draws one card.
- The group member who is assigned to be the Breathing Boss will direct the other participants to create body movements along with a noise that simulates that particular respiratory part and its function.
- The “machine” is further created by the participants connecting their movements to each other, functioning together as a respiratory system.
- The Breathing Boss would signal the machine to perform and could have the machine simulate what it feels like before, during and after an asthma episode.
- This activity may be videotaped (optional) and played back to the participants.
- A large group can be divided in half and each group can create their own asthma machine.
- There might also be a group who are the judges who evaluate teams for accuracy and creativeness (optional).

Material Needed:

- Respiratory System Cards (page 6)
- Container
- Video camera/monitor/VCR (optional)

Copy and cut on dotted lines

Alveoli

**Bronchial
Tubes**

Diaphragm

Lungs

Mucus

**Smooth
Muscle Bands**

**Breathing
Boss**

LUNGO

Ages 7-14

Activity Objective:

This asthma bingo activity helps participants become familiar with asthma terms using a game format.



Instructions:

- Group members create list of asthma terms (see sample asthma terms list below) and write them on a poster board/blackboard.
- Each child arranges, on an 8-1/2" X 11" piece of paper, 5 columns with the letters LUNGO on the top (or copy LUNGO Game Card template on page 8).
- Each participant designs their own LUNGO card by choosing different asthma terms to write in each square on the LUNGO card.

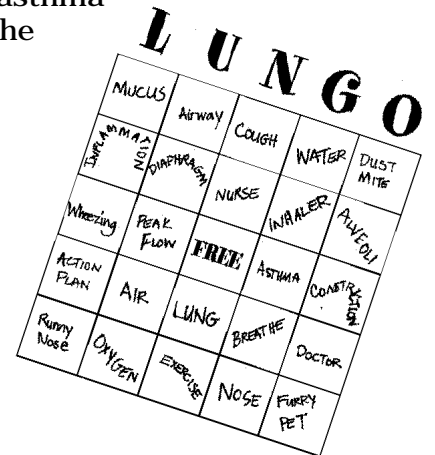
Asthma Terms:

Action plan	Constriction	Inhaled steroid	Quick-relief medication
Air	Cough	Inhaler	Runny nose
Airway	Diaphragm	Lung	Smooth muscle bands
Allergies	Doctor	Medication	Sneezing
Alveoli	Dry powder inhaler	Mucus	Spacer
Asthma	Dust mite	Nebulizer	Trachea
Asthma episode	Early warning sign	Nose	Trigger
Breathe	Exercise	Nurse	Water
Bronchial tubes	Furry pet	Oxygen	Wheezing
Bronchodilator	Health educator	Peak flow	
Chest tightness	Inflammation	Pulmonary function test	

- Group Leader is LUNGO caller. The LUNGO caller puts listed asthma terms in a container. When the asthma term is chosen from the container, they randomly choose a "LUNGO" letter.

Materials Needed:

- 8-1/2" x 11" paper (or copy game card)
- Pen
- Scrap pieces of paper for space markers
- Poster board
- Marker
- Container
- Scissors



L U N G O

		FREE		

Anatomy Hike

Ages 7-14

Activity Objective:

The purpose of this “blind walk” is to have children experience various situations via touch and feel.

They will learn about the (simulated) parts of their breathing anatomy and become more familiar with the functions involved in an asthma episode.



This hike through camp will give campers a variety of outdoor experiences, heavy on asthma education.

Instructions:

- In this exercise all participants are blindfolded and instructed to hold hands, creating a human chain. One group leader should be stationed at every third child to lead, assist, instruct and help watch for obstacles while walking and keeping all campers safe during the Anatomy Hike.
- A leader will be chosen as the main voice and “tour guide”, reading the educational script on page 10-12, encouraging campers to use their imagination and giving cues to the other leaders who are guiding the blindfolded group.
- At the starting point campers will line up and be instructed to stay together, help one another, listen to both the tour guide and the assistants. The tour guide will read this narrative script, adding embellishments where they can to add interest and excitement to the activity.
- Campers should be told that they are actually role-playing the part of the air that we breathe and will experience what happens as air travels through the respiratory system.
- At each activity site the tour guide will blow a whistle to indicate that an activity is about to occur (with the help of the assistants).

Materials Needed:

- Blindfolds (handkerchiefs, t-shirts, etc.)
- Whistle
- The script...(see pages 10-12)

Narrow Passageways Materials

- Folding tunnel
- Inner tube large enough to climb through
- Sheets to hang in trees to create maze/narrow passage
- Benches lined in narrow but safe configuration

Airway Simulation Materials

- Paper fan or battery operated fan
- Balloons

Muscle Bands Materials

- Rubber bands

Mucus Materials Needed

- Homemade or store bought slime (see mucus recipe on page 21)
- Bowl for hands to submerge
- Hose for cleaning station or by lake side

Alveoli Materials

- Grapes
- Rocks
- Marbles
- Playballs

Diaphragm Materials

- Trampoline or play parachute

Anatomy Hike Script and Instructions

Script Read by Lead Counselor:	Action/Activity:	Action Simulates:
"Breathing is automatic. We hardly ever think about it."	Group assembles, is blindfolded and joins hands to form chain. Group begins to walk as leader reads.	Group assumes the role of air.
"Oxygen enters our lungs from the air that we breathe, through the nose and mouth."	Counselors create forced air onto each camper using hand-held battery operated fan or paper fan.	Air entering nose, etc.
(Embellishments here — ie "see how this is a narrow passageway, just like your nostrils and the back areas of your nose!")	Campers crawl through large inner tubes lined up in a row or under tables or chairs arranged to provide a small passage.	Narrow air passageways.
"Air then passes through the pharynx (FAR-ingks) and is the place where the Eustachian (yu-STAY-shun) tube opens." "and the larynx (LAR-ingks) – the vocal chords" "and the trachea (TRAY-kee-ya) – also called the windpipe"	Campers stop; counselors take blown (but not tied) balloon and stretch the neck to expel air, making a noise next to the ears of the blindfolded campers.	Air passing through narrow tubes, vocal chord noises and air movement.
"Air goes to the left and right bronchi (BRON-kuy) and then enters the lung" (Embellishments here — talk about how the Bronchi deliver the air to right/left lungs)	Counselors lead the chain of campers left and right to "snake" their way into lungs. Campers can reach a "Y" in the passage and be led right or left.	Air moves left and right to lungs.
"It continues through the bronchial tubes and branches off as many as 25 times before reaching the alveoli (al-VEE-oh-lie)"	Counselors break up the chain of campers into smaller groups and continue to snake them around the outdoor area.	Air branches off many times before reaching the alveoli.

Anatomy Hike Script and Instructions

Script Read by Lead Counselor:	Action/Activity:	Action Simulates:
<p>"Bronchial tubes are wrapped with smooth muscle bands." "These muscles are involuntary — that means you can't control them by trying to think about it or moving any other part of your body!" "This is called BRONCHOCONSTRICTION, and when this happens, the bronchial tubes get very narrow." "Thick mucus flows into the bronchial tubes. This happens because the airways are very inflamed & the narrowed passages adds to the difficulty in breathing."</p>	<p>Counselors wrap 2-3 rubber bands around each camper's wrist; campers are still in small groups.</p>	<p>Constriction of the smooth muscle bands.</p>
<p>"Mucus membranes help move the mucus OUT to clean the airways. Mucus glands produce the mucus to help clean the airways."</p>	<p>Submerge arms and hands into a bowl of "mucus" or slimy material such as store-bought slime, jello or refer to home-made mucus recipe on page 21.</p>	<p>The feel of mucus, its viscosity/thickness and movement.</p>
<p>(Embellish by saying that drinking lots of water/fluids will keep mucus flowing and moving through the body, especially the pulmonary system.)</p>	<p>Following this experience, have campers rinse "mucus" off at a cleaning station, by a lakeside or with a hose where they will also remove rubber bands.</p>	<p>Washing thick mucus out of the tubes with liquid. Muscle band expansion.</p>
<p>"Bronchial tubes branch off as many as 25 times before reaching the alveoli (the very tiny air sacs at the end of the bronchioles). They are tiny ball-shaped sacs that perform the MAIN function of the lungs...exchanging oxygen from outside air and carbon dioxide that is removed from the lungs!"</p>	<p>Still blindfolded, campers can put their hands in a bowl of grapes or walk through a small, enclosed area that has been filled with play balls.</p>	<p>Simulation of alveoli.</p>

Anatomy Hike Script and Instructions

Script Read by Lead Counselor:	Action/Activity:	Action Simulates:
<p>"As oxygen enters the blood vessels, carbon dioxide leaves the blood vessels and enters the alveoli when the person breathes out, using the largest muscle of respiration, the diaphragm."</p>	<p>Children remove blindfolds and take a deep breath. They are rewarded for completing the hike by jumping on a trampoline to experience the function and movement of the diaphragm, which moves up and down.</p> <p>Option: Use a large parachute or a tightly held sheet to bounce a ball high to simulate the diaphragm moving up and down.</p>	<p>Movement of the diaphragm.</p>

Asthma Charades

Ages 8-14

Activity Objective:

This activity helps to reinforce children's knowledge about the respiratory system, asthma management tools and asthma vocabulary terms in a charade game format.



Instructions:

- Group leader creates index cards (or use cards on page 14) with pictures and words that include:

Allergy	Dust mite	Nebulizer
Asthma	Early warning signs	Peak flow meter
Asthma attack	Exercise-induced	Pollen
Asthma diary	Inhaled corticosteroid	Pulmonary function test
Bronchial tube	Inhaler	Smooth muscle bands
Bronchodilator	Lungs	Spacer
Diaphragm	Mucus	Wheeze

- Each participant chooses a card from the container.
- Group members silently act out/mime what they have picked.
- Other group members try to identify which asthma term it represents.

Optional: List words on a poster board/blackboard as a reference.

Optional: Participants could receive points or small rewards (ie, candy, trinkets, etc.) when their charade is guessed.

Materials Needed:

- Index cards labeled with the various terms listed above
- Poster board
- Marker
- Container
- Timer

Copy and cut on dotted lines

Allergy

Inhaler

Asthma

Lungs

Asthma attack

Mucus

Asthma diary

Nebulizer

Bronchial tube

Peak flow meter

Bronchodilator

Pollen

Diaphragm

Pulmonary function test

Dust mite

Smooth
muscle bands

Early warning signs

Spacer

Exercise-induced

Wheeze

Inhaled corticosteroid

Sounds of Asthma



Ages 5-12

Activity Objective:

Knowledge of the respiratory system and the asthma process is translated into musical sounds in this fun, cooperative game. This activity allows children to use their creativity to express their understanding of what is happening with their asthma and respiratory system.

Instructions:

- Participants choose a musical instrument from an assortment of children’s musical instruments. If instruments aren’t available vocal sounds can be made or children could use art materials to create instruments (see page 16 for a few suggestions).
- If instruments are going to be created, have the participants pick from the art supplies to create their musical instrument.
- Group leader directs the participants to make sounds and rhythms that simulate the various aspects that might occur, such as:
 - Sound of air moving through an open bronchial tube.
 - The sound of wheezing when the bronchial tubes are blocked by the inflammation and mucus.
 - What would it sound like when the smooth muscle bands are fitting loosely around the bronchial tubes.
 - Create the sound when the smooth muscle bands are getting tight around the bronchial tubes.
 - What does it sound like before, during and after an asthma episode?
- Participants can join together to form an orchestra by playing their instruments together.
- *Optional:* Allowing each child to be the music director and to conduct the “orchestra” (group members) about the severity of his or her asthma. Games could also be designed where the participants could play the sounds and the group has to guess what is occurring.
- Older participants could create songs or musical arrangements. The music can be tape recorded or they could make a video. They could present their final product at an “all camp performance”.

Materials Needed:

- Children’s musical instruments (drums, bells, tambourine, flute, xylophone, guitar, sticks, etc.)

If instruments are going to be made some supplies might include:

- Beans
- Masking tape
- Toilet paper or paper towel tubes
- Bowl
- Rubberband
- Wax paper
- Bells
- Pots and pans
- Glasses filled with water to different amounts
- Sticks
- Rocks, etc.
- Tape recorder, blank tapes, video equipment, TV monitor (optional)

Homemade Musical Instrument Ideas

Cymbals

- Use two aluminum pie tins. Punch hole in center and attach yarn for handles.
- Use two cooking pot covers of similar size.

Drums

- Plastic ice cream pail, coffee can with plastic lid or oatmeal box. Use wooden utensils for drum sticks.

Bongo Drums

- Rubber band together two of the regular drums above. Beat with hands.

Guitar

- Stretch different length rubber bands over a cardboard shoe box.

Xylophone

- Take several glass water glasses and fill each with different levels of water. Try different items to clank on the glasses.

Kazoo

- Cover a comb with wax paper and hum against the wax paper comb.
- Use an empty paper towel roll and rubber band wax paper over one end. Pinch a couple holes through the wax paper to let air out and blow or hum into in the other end.

Rhythm Sticks

- Use any two like sticks such as pencils, chop stick or dowels.

Maracas

- Put small gravel, rice or beans inside a plastic container with a tight fitting lid (beverage bottle work well).
- Put rice, gravel and popcorn into three different plastic film containers and tape together.

Tambourine

- Decorate two paper plates. Place rice or popcorn between the plates and staple or tape together to contain the objects.

Bronchial Binoculars

Ages: 5-8

Activity Objective:

Through art media, children have the opportunity to learn and explore how their lungs look inside and to express their perceptions about the differences that occur before and during an asthma episode.



Instructions:

- Group leader provides materials for the participants to create and decorate two cardboard tubes to resemble bronchial tubes.
- Place rubber bands around the paper tube to simulate the muscle bands and foam rubber or cotton balls inside the tubes to represent inflammation.
- The participants use the tubes as binoculars and talk about what they see before and during an asthma episode. These “binoculars” can also be used when discussing medications in order to enhance their understanding about the functions of their medications.

Materials Needed:

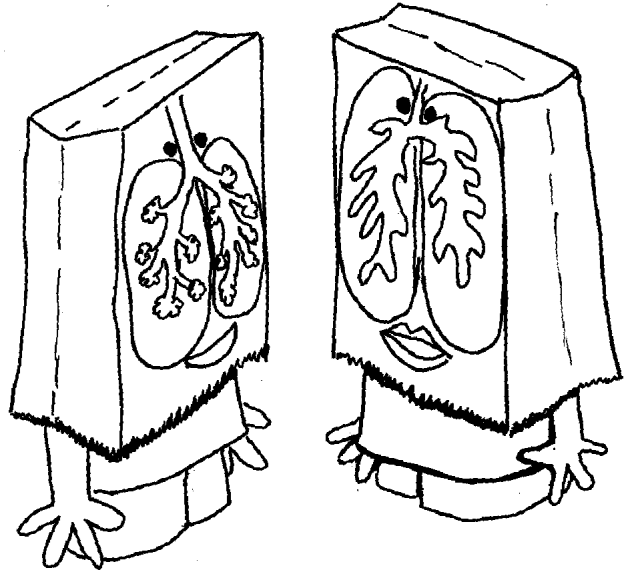
- Cardboard tubes (toilet or paper towel)
- Cotton balls or foam rubber
- Rubber bands
- Glue
- Markers

Talking Lungs

Ages 7-12

Activity Objective:

This experimental activity allows children the opportunity to give their lungs speaking abilities. This empowers children to conceptualize that asthma doesn't need to control their lives, rather, that they can be in control of their asthma.



Instructions:

- Group leader has a discussion in which the group members are asked to think about what their lungs would say if they could talk.
- Participants will then be putting on a play which incorporates the lungs' dialogue.
- Costumes are made from large paper sacks. Participants draw their talking lungs' character. These bags are worn by the group members, so eye and mouth holes will need to be made.
- Participants direct themselves in a skit acting out the following scenarios:
 - Going to the emergency room.
 - What could have been done to have prevented Emergency Room visit?
 - Being at school in gym class when your asthma worsens.
 - What could have been done to prevent exercise-induced asthma episode?
 - Your parent constantly reminding you to take asthma medicine because you forget.
 - What happens when you are around your friends and you are wheezing badly?
 - Taking asthma medications in front of others.

Materials Needed:

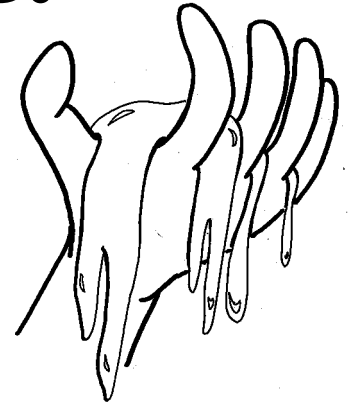
- Large paper sacks
- Markers
- Scissors
- Prepared scenarios
- Video camera (optional)

Make Your Own Mucus!

Ages 5-12

Activity Objective:

Within a creative environment, children will create “mucus” with a special recipe to learn about the texture, movement and effects of mucus buildup.



Instructions/Ingredients

Recipe:

- 1 cup water
- 2 cups cornstarch
- Food coloring (your choice: green or yellow)

Procedure:

- Step 1: Pour cornstarch into a bowl.
- Step 2: Slowly add water, just a bit at a time, mixing with fingers as you go until smooth.
- Step 3: Add just a few drops of food coloring to add real slime appeal.
- Step 4: Mixture will appear solid/hard after created, but pick it up and let it ooze!

Another Recipe:

- | | |
|-----------------------------|-----------------------------------|
| 1/2 cup of water | 3 envelopes of unflavored gelatin |
| 1/2 cup of light corn syrup | Measuring cup |
| Kettle or pan | Fork |

*Safety Warning: An adult should help with boiling the water.

Procedure:

- Step 1: Heat 1/2 cup of water until it boils and remove from the heat.
 - Step 2: Pour in 3 envelopes of unflavored gelatin, wait a few minutes until it softens and stir with a fork.
 - Step 3: Add 1/2 cup of corn syrup.
 - Step 4: Stir with fork and lift out long strands of “mucus”.
 - Step 5: After experiment, dispose in the trash.
- Note:* As the water cools, you may need to add a spoonful or two of water.

–Thank you to “Mad Science”, for providing us with this recipe.

(continued)

Activities

- Kids will want to play with “mucus” to get the feel of the material
- As they do, questions can be asked so that they understand the effects of mucus buildup within the respiratory system:

Squeeze the mucus.

What happens?

Allow it to flow between fingers.

Is it fast or slow?

Imagine the mucus inside your body.

Why is it difficult to breathe?

When the above activities are complete, dilute the mucus slowly with a few drops of water at a time. Ask the group “what happened?” Teach them that by adding fluids that this mucus, like the mucus in their lungs, will thin and allow it to flow through the bronchial tubes more easily.

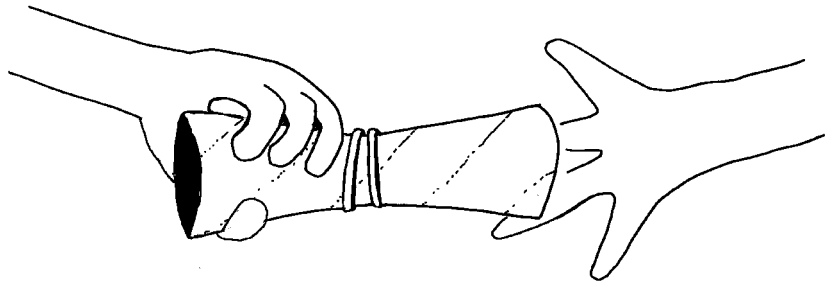
That’s why it’s important to DRINK LOTS OF WATER/FLUIDS DAILY!!

Please note that this material will stain. Do not set it down on anything that is important.

“Pass the Bronchial Tube”

Relay Race

Ages 5-12



Activity Objective:

A relay race to understand the anatomy and changes within a bronchial tube.

Teamwork will allow children to build (and then dismantle) a simulated bronchial tube in a fun and active race. It also illustrates the respiratory function involved in an asthma episode.

Instructions:

- Two teams are established to compete in the The Bronchial Tube Relay Race.
- Materials that will build and dismantle the “Bronchial Tube” are placed along different stations (see “Various Stations” listed on page 24) that may be set up in a line, in a circle or in a random pattern outside. This will simulate an asthma episode and the events that occur within an asthma episode (and those following medication).
- Teams choose members to be posted at each station, along with a starting runner.
- At each station explanations of the representative asthma action are given.
- Group leader yells “go,” and the first runners from each team go to the first station to pick up the tube and run it to the next station. Example: This cardboard tube represents a bronchial tube.
- At the next station, a relay runner is waiting. Runner #1 takes 4 rubber bands and puts them tightly around the outside of the “tube” representing constriction. After the tube is “constricted,” it is handed to Runner #2 who goes to the next station.
- At the Inflammation station, Runner #2 will stuff cotton and Play-Doh® (or comparable material) into the tube until it is full (to show the effects of inflammation and mucus) and hand it to Runner #3.
- At the Medication station, Runner #3 will call out the name of the medication that they (personally) use, and its effects ie, “I use _____ and it is a bronchodilator!” After this, Runner #3 hands the tube to waiting Runner #4 who goes on to the next area where the tube is then relieved of asthma symptoms.
- Reversing the effects of an asthma episode, Runner #4 will completely unstuff the tube and then hand it to waiting Runner #5.
- Runner #5 goes to next station where the rubber bands are removed and the tube is handed to Runner #6 who will then take the clear tube across the finish line.

(continued)

The various stations include:

Start:		Bronchial tube	Toilet tissue cardboard roll
Station #1	Constrict	Smooth muscle bands	Wrap rubber bands
Station #2	Create	Inflammation & mucus	Stuff cotton balls & Play-Doh®
Station #3	Medication	Name your Rx and its role	Call out the meds you use
Station #4	Decrease	Inflammation & mucus	Remove cotton balls & Play-Doh®
Station #5	Expand	Smooth muscle bands	Remove rubber bands
Station #6	Return	Bronchial tube to normal	End race, relieve asthma

NOTE: Stations can be combined to accommodate fewer participants if needed.

Materials Needed:

- Cardboard toilet paper tubes
- Rubber bands
- Cotton balls
- Play-Doh® or similar material that might be goopy and can simulate mucus
- Baseball bases or hula hoops, if available, can be used to clearly mark the location of each relay station and finish line. Stations should be placed a reasonable distance apart to facilitate an active, outdoor race.