

How to Do the Heimlich Maneuver

Analysis by [Dr. Joseph Mercola](#)

August 19, 2024

STORY AT-A-GLANCE

- › Until 1972, before the Heimlich maneuver was developed, the sixth leading cause of accidental death was choking, usually on a bite of food, and for young children, a small toy or other object
- › One of the most common misconceptions in first aid is that slapping someone on the back when they're choking will help bring the foreign object out, but instead, it often drives it further down, lodging it more firmly in their airway
- › Heimlich wanted his procedure to be so simple anyone could use it, including a child, who incidentally should be kept away from choking hazards such as balloons, batteries and marbles
- › Pushing on the diaphragm forces air from the lungs and throat, forcing a trapped object out, but experts caution that the maneuver should only be used on someone who is choking

Editor's Note: This article is a reprint. It was originally published October 7, 2017.

Up until 1972, when the Heimlich maneuver was developed, the sixth leading cause of accidental death was choking, usually on a bite of food, or for young children, a small toy or other object. At that time, around 3,000 people in the U.S. died every year from getting something lodged in their throat. The sobering thing is that it doesn't take long for choking to become a fatality. The American Academy of Pediatrics (AAP) explains:

"Choking is the blockage or hindrance of respiration by a foreign-body obstruction in the internal airway, including the pharynx, hypopharynx, and trachea. Airway obstruction can be fatal if it leads to serious impairment of oxygenation and ventilation.

*Choking is a leading cause of morbidity and mortality among children, especially those who are 3 years of age or younger. This is largely because of the developmental vulnerabilities of a young child's airway and the underdeveloped ability to chew and swallow food. Young children also commonly put objects in their mouths as they explore their environments."*¹

In 1972, as a Cincinnati doctor, Henry Heimlich read an article reporting these statistics and wondered what he could do to help. After having developed the reversed gastric tube for esophagus replacement in the 1950s, and spending years studying patients' **swallowing difficulties**, he began researching old medical journals on the topic of choking and medical interventions.

One of the most interesting of his discoveries was that from the time a tome titled "A Practical Treatise on Foreign Bodies in the Air-Passages" was published in 1854, to 1972, prevailing medical advice steered away from slapping people on the back as a means to remove an object causing them to choke. Even so, that was the very approach the American Red Cross recommended in 1933 to "help" someone who was choking.

If you've ever had a choking problem yourself, or have seen someone who has, you probably know that quite often, this is still the method many people try first. "Choking persons who can still breathe, even with a piece of food in their throat, often die when back-slaps cork their airway," Heimlich explained. He called such measures "**faulty advice**."²

When someone is choking, they're often unable to either draw in a breath or exhale, which is why they can't simply "cough" the object out of their airway, but the maneuver creates an "artificial cough."

How Heimlich Developed His Maneuver

In his subsequent essay for the American Broncho-Esophagological Association on how his life-saving technique, the Heimlich maneuver, was developed, the doctor recalled:

*"As I approached the problem, I decided that since back slaps caused deaths by forcing the object back downward in the airway, the answer lay in creating a flow of air upward out of the lungs, using the lungs like a pair of bellows ... To work up enough force to expel the object, I would have to find a way to compress the lungs sufficiently to create a strong flow of air out of the mouth."*³

To simulate a foreign object, Heimlich blew up a balloon and secured it at the end of an endotracheal tube to close off the flow of air in the airway of an anesthetized beagle (a method now largely viewed as unethical), thinking that a large flow of air created by compressing the lungs should eject the obstruction.

But nothing happened. He tried several times with no luck, so he stopped to analyze the problem, which he correctly surmised must be the rib cage, which wouldn't allow the lungs to be compressed effectively without breaking them, which sometimes happens in CPR. Heimlich explained further:

"I decided to start again. I considered if you pushed the diaphragm upward into the chest, you would markedly reduce the volume of the chest cavity, which would compress the lungs in a very even manner. Moving below the rib cage, I pressed my fist above the dog's belly button and just under the rib cage, thereby pushing the diaphragm upward into the chest.

*Instantly the tube shot out of the animal's mouth! Repeating this procedure, I found the same result every time. I was extremely excited! With only a little bit of exertion, I found that pushing upward on the diaphragm drove air out of the lungs, creating a sufficient flow of air to carry the object away from the airway and out the mouth."*⁴

It isn't necessary for the object to be "stuck in the throat like the cork in a Champagne bottle," Heimlich observed. Even a bone, which lets air flow around it, can be extricated, but it's the flow of air, not pressure, that carries the object away.

Performing the Heimlich Maneuver, aka 'Abdominal Thrusts'

Himself a participant, Heimlich asked 10 colleagues, both doctors and residents, to help him calculate the actual measure of air flow needed to carry an object stuck in someone's airway. Multiple techniques were tested until the easiest and most effective was found. Heimlich called it "sub-diaphragmatic pressure."

They used a mouthpiece connected by tubes to a machine designed to measure the flow or expulsion of air from the study subjects' mouths when a fist sharply pushed their diaphragms upward. While today computers would report results, the doctor used a graph on a rotating drum, which showed that an average of 205 liters of air were generated – quite enough to expel an object trapped in someone's throat.

Heimlich's next challenge was to develop a simple method for the above scenario that anyone could use, including children, even without a first aid course. He didn't think a tool of some sort would work because what if it couldn't be found in time?

It also had to be quick, because when a child is choking, for example, rescuers have less than four minutes to dislodge the object to avoid the very real possibility of either permanent **brain injury** or death. Now followed by men, women and children all over the world, the simple procedure when someone is choking is to:

1. Stand behind the person and reach around their waist with both arms.
2. Make a fist with one hand, placing the thumb side below the victim's rib cage, just above their navel.
3. Grasp your fist with your other hand, then firmly and smoothly, press your fist inward and upward until the choking object is dislodged from the airway.

Repeat as many times as necessary, but in many cases, the dislodged object flies from the victim's mouth so fast that it hits the wall or ceiling. In 1985, the U.S. Department of Health and Human Services announced Surgeon General C. Everett Koop's endorsement of the Heimlich maneuver, "not as the preferred, but as the only method that should be used for the treatment of choking from foreign body airway obstruction." Koop added:

"Millions of Americans have been taught to treat persons who are choking with back blows, chest and abdominal thrusts ... Now, they must be advised ... and I ask for the participation of the Red Cross, the American Heart Association and public health authorities everywhere ... that these methods are hazardous, even lethal."⁵

Anyone Can Use the Heimlich Maneuver – Even on Yourself

One of the most compelling features of what is now the go-to procedure for choking, nearly anyone can use it. Medical News Today⁶ explains other scenarios that may require a slightly altered procedure: When the choking victim, child or adult, is unconscious or cannot stand:

1. Position the victim flat on their back and sit on their thighs, facing them.
2. Placing one hand on top of the other, positioning the heel of your hand over their diaphragm, just below the rib cage and above their navel.
3. Lean onto your hands, pushing upward and inward, repeating until the object is coughed out.

Performing Heimlich on yourself (when there's no one to help):

1. Make a fist, and with your thumbs pointing inward, position your fist against your diaphragm, under the rib cage and above the navel.
2. Push in sharply until the object is expelled.
3. If unable to do this or if it doesn't work, lean over a solid object such as a counter or chair, position the edge at your diaphragm and push in and up. Move slightly

forward and backward to produce thrusts, repeating as necessary.

Infants under 1 year old:

1. Position the child face down on your forearm, making sure their head is lower than their chest.
2. With your forearm resting on your thigh, support the baby's head with your hand, making sure their mouth and nose are not covered.
3. Use the heel of the other hand to smack the baby's back between the shoulder blades four times. Repeat until the object comes out.
4. If this fails, turn the baby over and position two fingers in the center of the baby's chest, between the nipples. Forcefully push down four times to a depth of about 1 inch. Repeat until the object comes out.

What You Can Do to Help Prevent Your Child From Choking

What do balloons, hotdogs and batteries have in common? Yup, they're all objects that can cause a choking hazard in children. Hazardous can mean anything small enough to get into their mouth, such as buttons, coins and marbles. Toy pieces left out by older children, plastic eyes on a teddy bear or decorative beads on a doll dress, accessible to toddlers, can become some of the [most dangerous items in your home](#).

Latex balloons, according to the American Academy of Pediatrics (AAP), are the leading cause of choking deaths among children 6 years old and younger, and at least 68 died from this in the U.S. between 1990 and 2004.

It's when balloons pop that they pose the biggest problem because pieces can be inhaled, after which they can conform to a child's airway and form an airtight seal. Thick, sticky substances like caramel, peanut butter and toasted marshmallows can also cause problems, but one of the most common foods small children choke on is hot dogs.

When hotdogs are sliced into coin-shaped pieces, the cylindrical shape acts like a tight seal, which can completely block a child's airway. Bowls of peanuts, round, candy-coated

chocolate pieces, a bag of small marshmallows on the counter while making hot chocolate, and even raw carrots, apples and other foods you might be preparing for a recipe should be monitored **when toddlers are around**; children can be quick, and all it takes is a moment.

How to Minimize Choking Hazards for Young Children

Parents Magazine⁷ suggests adhering to a few simple precautions for children under age 3 to minimize choking hazards.

- Always cut firm and/or round foods such as cheese or **grapes** into smaller pieces or thin strips before making it accessible to them
- Closely supervise children during mealtime
- Show children the proper way to eat and chew food
- Learn how to apply the Heimlich maneuver for children

Further, children should be taught to:

- Remain seated while eating
- Chew food slowly and thoroughly
- Not talk or laugh with food in their mouth
- Only put as much food in their mouth as they can chew comfortably

While the Heimlich maneuver is nearly always used today as the go-to response when someone is choking, other methods have used it as a basis with a few tweaks, such as one advised in a study just a few years later, in 1976. This method recommends chest thrusts, but used only six study participants, so experts acknowledge that a larger study might return different results.

However, Heimlich's procedure was recognized as having saved the lives of more than 50,000 people in the U.S. alone, according to CNN,⁸ which relayed a fascinating account: The man behind the maneuver used it himself to save a woman who was choking on a

piece of hamburger in a Cincinnati-based senior living community center in 2016. She was sitting right next to him.

That's how Heimlich employed his life-saving technique – the first time ever in a real, life-and-death situation – before his own death of a heart attack just a few months later. He was 96.

Sources and References

- ¹ American Academy of Pediatrics March 2010
- ^{2, 3, 4, 5} ABEA 2015
- ⁶ Medical News Today September 16, 2019
- ⁷ Parents, 2017 (Archived)
- ⁸ CNN May 27, 2016