

EOLife® | EOLifeX®

The Ultimate Devices for
#HIGH-PERFORMANCE VENTILATION





PATIENTS' LIVES are in our hands, let's learn to ventilate better !

Among
396
medical students taking their BLS
certification



0% delivered adequate
tidal volume ⁽¹⁾

For many years we have focused our training **mainly** on the quality of chest compressions. But if we must perform high quality chest compression to enable blood circulation it is mostly for the purpose of **supplying the brain and the heart with oxygen.**

Now most of students and many experienced professionals struggle to perform adequate ventilation.

Among 280 ventilation sessions realized with 140 healthcare professionals, only 7.5% delivered adequate volumes. ⁽²⁾



There is no High-Performance CPR without High-Performance Ventilation

... What is High-Performance Ventilation ?

Provide an adequate volume
while minimizing the risk of gastric insufflation

Avoid excessive gas leakage
which can result in inadequate ventilation of the patient's lungs.

Avoid Hyperventilation
which creates lung injuries and reduces venous return



AHA recommends* to “focus on high-quality CPR (compressions + ventilation).” (3)



“Without adequate oxygenation it may be impossible to achieve ROSC” (4)

* Class 1 recommended (Strong evidence)



**Hyperventilation
reduces the chances
of survival by 70% ⁽⁵⁾**

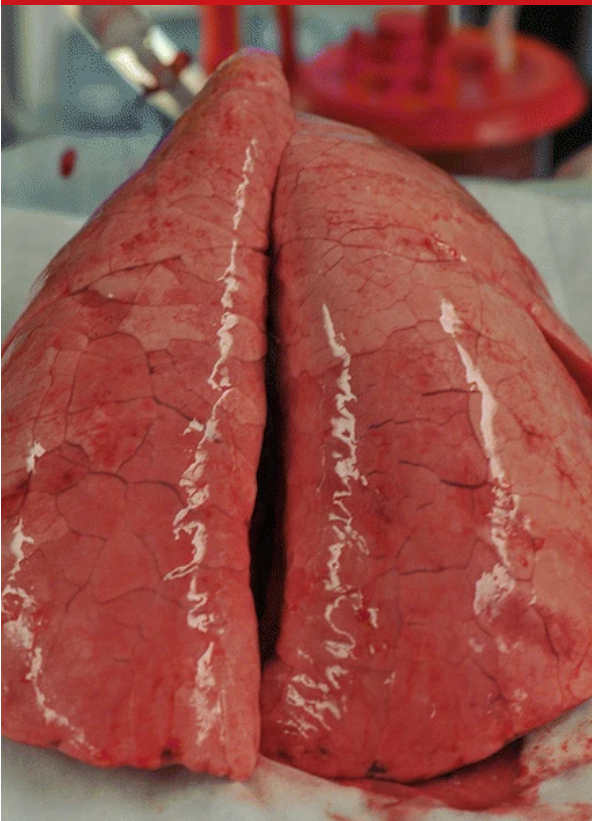
Hyperventilation Kills patients

Hyperventilation is feared by most caregivers when performing CPR as it causes

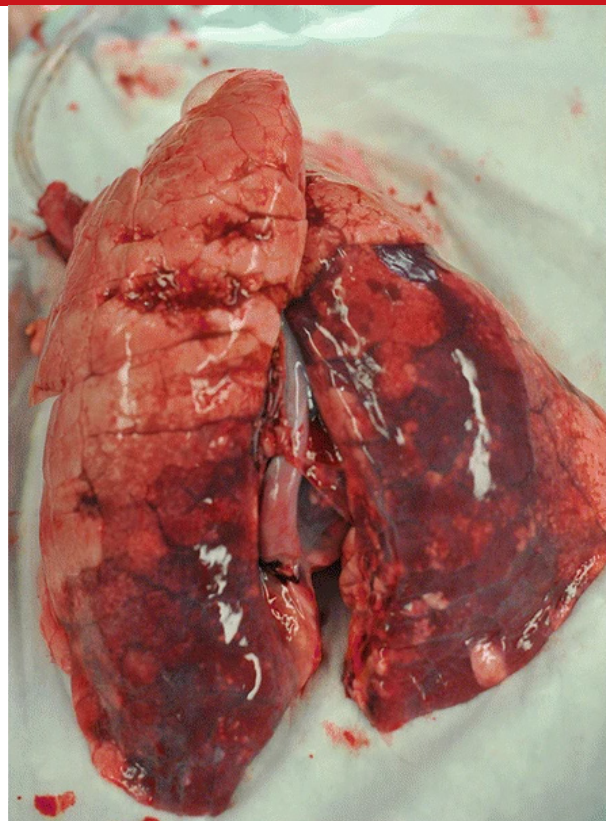
- Lung damages and barotroma
- Lung infections and pneumonia
- Reduced blood flow to the heart and brain

“Hyperventilation by excessive volume or rate can impair survival” ⁽⁵⁾

On intubated patients, hyperventilation is present in almost 80% of situations



Normal lungs



Injured lung caused by
hyperventilation. ⁽⁶⁾

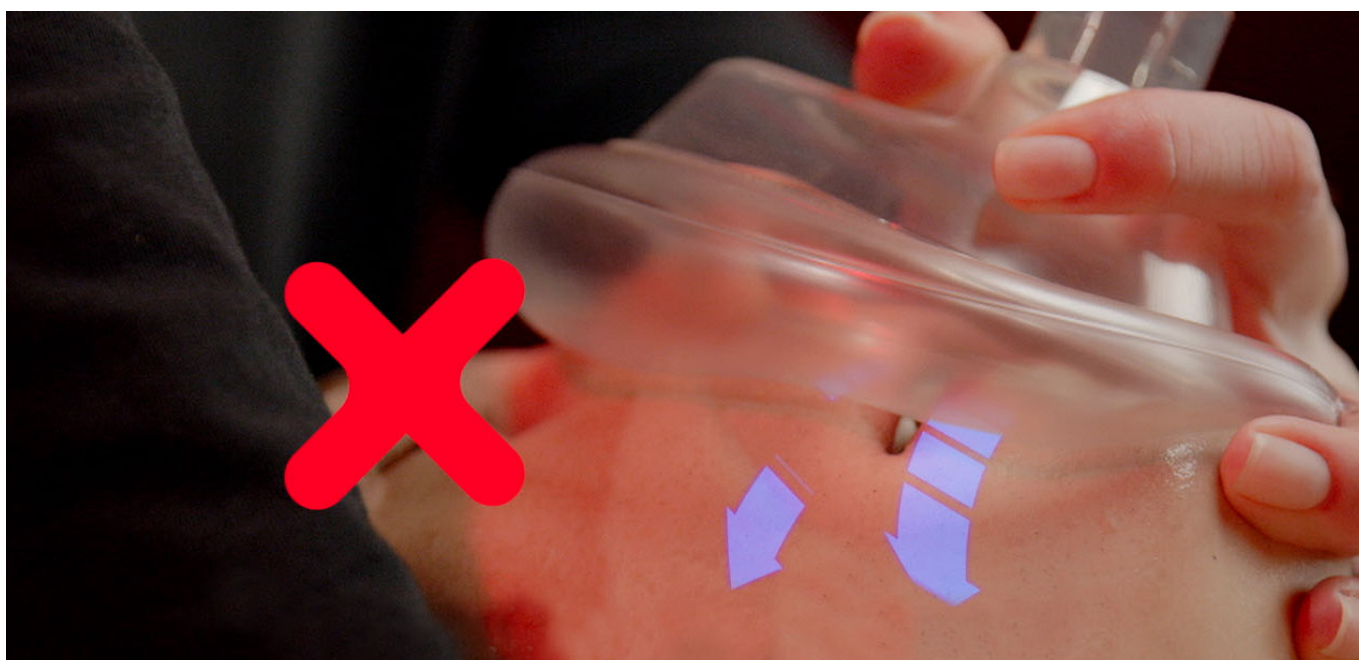


Excessive gas leakage **Kills patients**

Gas leakage
reduces the chances
of survival by 60% ⁽⁸⁾

Contrary to popular belief a few years ago, the biggest problem with BVM ventilation is excessive gas leakage.

Insufficient tidal volumes decrease the chance of ROSC from 19.8% to 8.7% and **reduce the survival rate from 10.3% to 4%.*** ⁽⁸⁾



Leakage does represent on average 69% of the insufflated volume with the one-hand technique. ⁽⁷⁾

* This is the result of a clinical study carried out in 2019 on 560 out of hospital cardiac arrest patients in Dallas, Texas.

A circular graphic with a dark grey background. It features a large outer circle with a series of small, light grey tick marks around its circumference. Inside this is a smaller circle with four teal-colored arrows pointing clockwise. The text is centered within this inner circle.

It's time to put the
'P'
back in
'CPR'



**Because what is not measured...
...cannot be improved**



The EOLife[®] devices adapt to any bag, mask and tracheal tube to measure and give **REAL TIME FEEDBACK** on insufflated volume, tidal volume, as well as ventilation rate and gas leakage.

Both devices have the same features except that EOLife X[®] enables data download via Bluetooth and can record ventilation parameters in «Blind Mode».



Medical Device Training tool

Real time visualisation of
Insufflated volume (Vi)
Tidal volume (Vt)
Ventilation rate (Freq.)



Real time
feedback of
Insufflated volume

Smart alarm
priorization
system

Important Leakage

Excessive Volume

High Frequency

EOLifeX®

The Ultimate **Training tool** for
#HIGH-PERFORMANCE VENTILATION

The independant panel of
judges said:

“EOLife X® is unique in its ability
to teach manual ventilation.”



90%

of trainees provide
quality ventilation after their
1st training session with EOLife X®

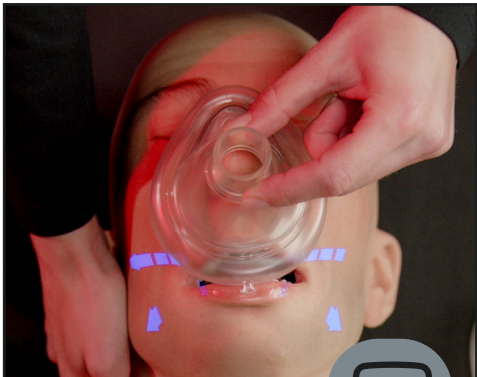




EOLife X[®] **helps you** to teach:



How to open the airway and maintain proper mask seal



How to choose the appropriate mask size



How to position the mask



It's time to

How to squeeze the bag and adapt delivered volume and rate to the patient

...and get ready to use

EOLife[®]
The Ultimate **Medical Device** for
#HIGH-PERFORMANCE VENTILATION



Track your **skills progress** over time

Thanks to the EOlif[®]e Connect app, you can download and save each of your Training sessions to allow Booster Training and Spaced Learning as recommended by AHA to improve CPR skills retention. ⁽⁹⁾



EOlif[®]e Connect app. is the only solution that offers a detailed analysis of the ventilation parameters, thus allowing to focus on the areas to correct and improve.



Manual ventilation quality in Pediatric CPR should be the 1st Priority

More than 300,000 children die each year from cardiac arrest worldwide, approximately 20,000 in the USA and 30,000 in Europe. ⁽¹²⁾

EMS providers are not trained to provide manual ventilation to children even if ventilation is defined by the guidelines as the 1st priority.

“In infants and children, asphyxial cardiac arrest is more common than cardiac arrest from a primary cardiac event; therefore, effective ventilation is the most important during resuscitation of children.”



EOLife^X TRAINING FOR THE PEDIATRIC VENTILATION

EOLife X[®] includes a dedicated mode for pediatric ventilation training. It adjusts tidal volumes and target frequencies based on the patient’s age.

What are the differences in pediatric CPR ?



Pediatric CPR has numerous differences compared to adult CPR, at various levels. It is particularly important to master ventilation in children to prevent serious consequences.

The differences in children include:

Oxygen consumption is doubled compared to adults.
Providing effective ventilation is an absolute priority.⁽¹³⁾

Extremely small tidal volumes.
The risk of hyperventilation and barotrauma is even more important.⁽¹⁴⁾

Facial structure is softer and easier to compress.
Higher risk of excessive leakage around the mask.⁽¹⁵⁾

Time to hemoglobin desaturation < 90% with tracheal intubation.⁽¹³⁾

| | |
|----------|-------|
| Adult | 8 min |
| Children | 4 min |



1st TRAINING TOOL WORLDWIDE
FOR PEDIATRIC VENTILATION

For all patients from 1 year old

The pediatric ventilation function integrated in EOLife X® defines the target ventilation parameters, for each age category.

It is based on the theoretical age of the patient easily identifiable by a color code given by the Broselow® scale (US) or Handtevy tape used worldwide.



| Zone | Patient weight | Age |
|--------|----------------|--------------|
| Violet | 10-11 kg | 12-24 months |
| Yellow | 12-14 kg | 2 years |
| White | 15-18 kg | 3-4 years |
| Blue | 19-23 kg | 5-6 years |
| Orange | 24-29 kg | 7-9 years |
| Green | 30-36 kg | 10-11 years |

The pediatric ventilation
function on EOLife X® :
Unprecedented precision.



EOLife®

The Ultimate **Medical device** for
#HIGH-PERFORMANCE VENTILATION

“EOLife® fills an important gap
in the management of CPR”

Dr. Daniel Jost, Head of the Scientific
Department at Paris Fire Brigade.



EOLife® improves manual
ventilation quality by over

70%₍₁₀₎



High-Performance Ventilation will become a **standard of care**

Since its launch in 2021, more than **2300 patients** have already benefited of the EOLife® technology

 **WATCH THE VIDEO**



EOLife® is designed for extreme conditions

EOLife® has temperature and atmospheric pressure sensors that allow **self-calibration** of the measurements and guarantee unequalled accuracy in extreme conditions.

EOLife® is certified for ambulance transport and outdoor conditions. EOLife® is **IP44** rated and **certified for ambulance transport and outdoor conditions**.



Oxygen is a drug, act accordingly!

The World Health Organization defines Oxygen as a life-saving essential medicine with no substitution ! And yet, legally speaking, it is still the only medication that is administered without measure.⁽¹¹⁾

**Hypoxia and hyperoxia kill thousands of patients every year.
Our first priority must be to stop this massacre!**



Testimonials

“

We chose to deploy Archeon's EOLife® on all the ambulances from the SDIS in the entire Doubs region. The EOLife® provides tangible benefits to our firefighters and paramedics in their management of OHCA patients. EOLife® is a valuable pre-hospital device that allows our 3,000 firefighters to improve the quality of their manual ventilation and to now provide high-performance ventilation.

”

Laure-Estelle Piller, Chief Medical Officer at Rescue Center of Doubs region, France

“

This device is changing practice! I've been using this product for about a year in statewide training in the commonwealth and its impact in BVM training has been amazing! Being independent piece of equipment, it is available for all provider levels, with or without a “tube”. The EOLife X® is putting the “P” back in CPR !!

”

Bob Page, Statewide CE Educator at Virginia Office of EMS

“

I did some show & tell as part of my talk at the NJ EMS Conference where we measured attendees' ventilation skills using the EOLife X®, quantifying tidal volume and ventilation rate in addition to mask seal. Everyone was amazed at what they learned during this training exercise and the importance of real time feedback.

”

Joshua D. Hartman, Sr. Vice President, CardioVascular /
Emergency & Mobile Medicine at HMP Global

Technical data

Legal information

EOLife X® is designed for manual ventilation training on a manikin only.
EOLife X® is not intended for use on humans.
EOLife X® is not a medical device.

EOLife® is a FDA cleared and CE marked medical device designed for the manual ventilation of adult patients. Proper training and a careful review of the manufacturer’s instructions for use are required before using the device. EOLife® is intended for use by heathcare professionals trained to treat patients in cardiopulmonary arrest in accordance with the European Resuscitation Council (ERC) Guidelines or American Heart Association (AHA) Guidelines.

| | |
|---|---|
| Dimensions (W x H x D) | 130 mm x 75 mm x 30 mm (5.11 inches x 2.95 inches x 1.18 inches) |
| Weight | 170g ± 5 g (5.3 oz ± 0.011 oz) |
| Operating conditions | <ul style="list-style-type: none">• Temperature between 0°C and 40°C (32°F and 104°F)• Relative humidity between 15% and 95% (non-condensing)• Atmospheric pressure range of 620 hPa (altitude of 4000 m) to 1,060 hPa (altitude of -500 m) |
| Transient operating conditions (maximum 20 min) | <ul style="list-style-type: none">• Temperature between -20°C and 50°C (-4°F and 122°F)• Relative humidity between 15% and 90% (non-condensing) |
| Lifetime | 5 years |
| Run time | 5 hours |
| Classification according to EN 60601-1: <ul style="list-style-type: none">• Type of protection against electric shock• IP rating for protection against electric shock | The entire device except for the charger (electronic control unit, battery and FlowSense sensor) has been designed to meet the requirements for type BF applied parts. |
| IP rating for protection against solids, dust and ingress of water | IP44 (in use configuration, i.e., EOLife®, its battery and FlowSense® connected) |
| Electromagnetic compatibility (EMC) according to EN 60601-1-2 | The control parameters and threshold values can be obtained from the manufacturer. |

| | |
|--------------------------------|--|
| Shock and vibration resistance | EN 60601-1-12 (category: resistance in an emergency vehicle) |
| Screen | 2.4 inches Resolution 320 x 240 pixels |
| Applicable standards | EN 60601-1:2006/A1:2013/A12:2014 EN 60601-1-2:2015/A1:2021 EN 60601-1-12:2015 EN 62366-1:2015 EN 62304:2006/A1:2015 ISO 18562-1:2017 ISO 18562-2:2017 ISO 18562-3:2017 ISO 10993-1: 2018 |
| Measurement accuracy | <p>Volume measurements are based on FlowSense® sensor measurements and are expressed in mL for the BTPS (body temperature and pressure, saturated). The measurement accuracies of the values displayed on the screen are as follows:</p> <ul style="list-style-type: none">• Vi (volume insufflated): ± 4.9% of the actual value measured under normal conditions of use• Vt (tidal volume) without leakage: ± 5.5% of the actual value measured under normal conditions of use• Freq (ventilation frequency): ± 1 cycle per minute <p>FlowSense® data:</p> <ul style="list-style-type: none">• Flow range: ± 250 slm (standard litre per minute)• Dead space: < 10 ml <p>Note : Certain types of ventilation bags can affect the measurement accuracy due to their design (non-laminar outgoing air flow). A slight measurement deviation may be observed but has no impact on compliance with regulatory requirements.</p> |



Scientific references

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(3) Raina M. Merchant, Alexis A. Topjian, Ashish R. Panchal, Adam Cheng, Khalid Aziz, Katherine M. Berg, Eric J. Lavonas, David J. Magid, «Part 1: Executive Summary: 2020 American Heart Association Guidelines for Cardiopulmonary Resuscitation and Emergency Cardiovascular Care», 2 pages, 2020.

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(12) AHA Heart & Stroke <statistical Update, Circulation, 2023

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Use EOLife for #High-Performance Ventilation



Archeon medical
2 chemin des aiguillettes
25000 Besançon, France
contact@archeon-medical.com

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