



✓ Why Sighing Is Healthy

1. Lung Function & Alveoli Maintenance

- A sigh is a **deep inhale followed by an extended exhale**. This deeper breath is essential for inflating the **alveoli**—the tiny air sacs in the lungs where oxygen and carbon dioxide are exchanged.
- Over time, some alveoli naturally **collapse**, reducing lung efficiency. A sigh **re-expands these sacs**, ensuring **better oxygenation** and **lung elasticity** (Li & Yoon, 2015; Feldman et al., 2016).
- Regular spontaneous sighing—about 12 times per hour—is the body’s way of **self-maintaining optimal lung function**.

2. Nervous System Reset

- Sighing stimulates the **parasympathetic nervous system**, calming the body. It helps **reset the respiratory rhythm** during stress or anxiety, which is why it’s often associated with emotional relief or relaxation (Zaccaro et al., 2018).

🫁 Impact on Iron Lung Design

The **iron lung**, a negative pressure ventilator used primarily during the polio epidemics, was designed to mechanically breathe for patients. Early versions of the iron lung **did not account for sighing**, which caused problems:

- Patients developed **lung stiffness** and **atelectasis** (lung collapse due to alveoli staying deflated).
- Engineers and physicians realized that without the **occasional larger breath (sigh)**, long-term ventilation was **detrimental to lung function**.

Solution: Later versions of mechanical ventilators, including the iron lung and modern positive pressure ventilators, were updated to **simulate sighs periodically**—known as “sigh breaths.” These ensure:

- **Re-expansion of collapsed alveoli**
- **Prevention of ventilator-induced lung injury**



- **Better oxygen delivery**
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References

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