

Understanding Noisy Breathing, and Breathing Patterns, at End of Life

At end of life, there are few symptoms that gain one's attention like the sound of noisy, gurgling breathing that can occur. Healthcare providers and family members can be left with the memory that a person struggled to breathe as they died, or worse, believed the reason the person died was because their lungs over-filled with fluid. Becoming familiar with the normal changes that occur to breathing during dying helps all healthcare providers understand what they are witnessing is something we can expect. When we understand this natural process does not cause discomfort or distress to the dying person, we are better able to provide symptom management and health teaching to support the patient's loved ones.

Agonal Breathing

As the body is dying, respiration progressively becomes a solely involuntary act. Where once we had some conscious influence over our breathing (i.e., ability to willfully hold one's breath), during end-of-life breathing is increasingly controlled by the dying brain stem. This means the breathing pattern is reflexive, and no longer a response to conscious awareness. Agonal gasping at the end of life is not a "desire or hunger for air" but rather a basic reflex of the dying brain.

Accessory muscles in the chest may be controlled by the brain stem at end of life, making breathing appear less coordinated, rapid, and labored, and can create a grunting or groaning sounds on exhalation. While grunting or groaning with increased work of breathing are cause for intervention in a person who is not at end of life, in the dying person these sounds are created by air being forced through relaxed vocal cords. It is not unlike the sound of wind blowing through a group of trees on a stormy day.

Take-aways:

One way of determining if the groaning or grunting you hear is related to distress at end of life is to observe if the sound is produced on exhalation. If groaning or grunting is not accompanied by any other signs of distress, it is important to provide teaching to the patient's loved ones and concerned team members that the sound is not related to unmanaged distress.

Apneic Breathing

As the brain dies, the respiratory system often responds with periods of no breathing (apnea), where the time between breaths becomes longer and longer. The respiration rate may decrease below 8 breaths per minute. A long period of no breathing may be followed by several rapid inhalations which is a form of apneic breathing called Cheyne-Stokes.

See [Video](#) for more info:
Noisy Breathing/Breathing Patterns at EOL

Take-aways:

It is important to note, that during the dying phase, the application of oxygen does not improve respiratory function or oxygenation in agonal or apneic breathing. In fact, due to these breathing patterns oxygen is not likely to be taken deep into the lungs, and often results in drying of the nose and mouth which can result in discomfort, bleeding, and increased secretion production. If a patient is experiencing discomfort with breathing (i.e., nasal flaring, facial tension), opioids are considered first-line treatment, as is repositioning for comfort.

Noisy Breathing (Terminal Secretions, Terminal Congestion)

Noisy breathing at end of life is mistakenly described as "the death rattle", "drowning" or "suffocating". The "wet" or "gurgling" sounds are caused by air passing over pooled oral and respiratory secretions the patient is no longer able to swallow or cough up – the patient may still be fully or partially conscious or unconscious. Wet breathing sounds can occur on inhalation or exhalation. They are mainly heard from the oral cavity but may be heard throughout the lungs on auscultation. Terminal secretions can happen alongside agonal breathing, making for gurgling groans or grunts on exhalation – which can be very noisy, and to those who are not aware that they are not a sign of the dying person in distress, this can be upsetting.

Take-aways:

Teaching about noisy breathing before and during the dying process is essential to ensure that the patient, their loved ones, and all care team members properly understand normal changes that may occur. Some people may find the comparison of noisy breathing at end of life to snoring, as a helpful way to understand the sounds. The *When Someone is Dying* pamphlet is available to healthcare providers in all settings ([Community/Long-Term Care/Acute Care](#)) as a tool to walk patients and their families through these normal signs and symptoms of dying.

- Medications (anticholinergics) can be given to prevent further secretion production, but it is important to note that they will not dry up secretions that have already pooled.
- Meticulous and regular mouthcare will keep the oral cavity from producing extra saliva.
- Regular repositioning of the patient can assist with natural drainage of secretions from the mouth. Suctioning is never indicated for the removal of terminal secretions as it can quickly over dry the mucosa causing increased secretion production and can stimulate the gag reflex in a patient who is unable to protect their airway³.

Sources

1. Ferrell, B. & Coyle, N. (2010). *Oxford textbook of palliative nursing*. 3rd Ed. New York, NY: Oxford University Press.
2. Norlander, L. (2008). *To Comfort Always*. Indianapolis, IN: Sigma Theta Tau International.
3. Pallium Canada. (2018). *The Pallium Pocketbook: A peer-reviewed, referenced resource*, 2nd Ed. Ottawa, Canada: Pallium Canada.