



Linda Chlan

Music Helps Reduce Stress and Anxiety

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I have conducted research for 12 years focusing on interventions to promote relaxation in patients in the intensive care unit (ICU) receiving mechanical ventilation. I have learned a great deal over the years from patients and family members about how to improve outcomes and experiences and how to reduce anxiety and stress in these patients. Much of what I have learned from the participants in my studies can be applied to home ventilator users.

Receiving mechanical ventilation in the ICU is a stressful experience both physiologically and psychologically. In response to stress, the body releases substances into the blood resulting in the “fight or flight” response. This response is geared towards mobilizing blood and energy components to those body systems and organs essential for survival. While stress is not inherently bad, sustained or prolonged stress can cause damage and tissue injury.

Sources of stress include fear of the unknown and of dying, thirst, sleeplessness, agitation, pain, frustration of being restrained, inability to speak, immobility, noise, confusion, loneliness, powerlessness, sensory deprivation and overload, inability to match one’s own breathing pattern with the ventilator and suctioning of the endotracheal tube. Anxiety also results from the many sources of stress experienced in the ICU.

My research program tests non-drug, complementary interventions that might be effective in reducing anxiety and promoting a more relaxed state for ICU patients on mechanical ventilators.

So why is music effective? Music perceived as pleasant and soothing can enhance relaxation by interrupting or reducing the body’s response to stress. Music also can be used to focus one’s attention upon familiar, pleasing sounds, while serving as a powerful distractor to stressful or anxiety-producing

thoughts, sounds or noise in the ICU environment. Music is thought to produce impulses in the brain that can reduce the stress response by dampening the arousability of the central nervous system through the release of certain transmitters in the brain.

Music used to reduce stress and anxiety usually has not more than 80 beats per minute, has fluid melodic movement, pleasing harmonies, regular rhythm without sudden changes and tones that include strings, flute, piano or specially synthesized music.

Music with steady, slow and repetitive rhythm is thought to exert a hypnotic effect contributing to relaxation and anxiety reduction via quieting the brain and inducing a more relaxed state in the brain, altering perceived levels of anxiety and facilitating a more relaxed state.

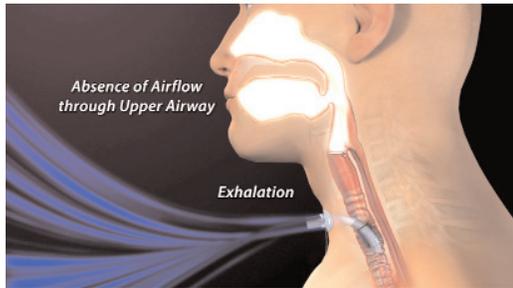
In our studies over the past 12 years with ICU patients on mechanical ventilators, my research team and I have found a generalized relaxation response (decreased heart rate, respiratory rate and blood pressure) and reduced anxiety in response to listening to relaxing music through headphones for 30 minutes. We have also measured stress levels in the blood, and while not significant, they show a pattern of stress reduction over 60 minutes of listening to music through headphones.

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On rare occasions, for the patient with a very severe swallow impairment and no ability to protect the airway (e.g. a patient at the end stage of ALS), an inflated cuff is the only way to minimize aspirated material from entering the lower airways.

In summary, there are many tubes and cuff options for the tracheostomy patient. It is best to consult with the health care team to determine which option best meets an individual's ventilation, communication and swallowing needs. ▲



Airflow with cuff inflated

Are you a ventilator user or health professional with a question about home mechanical ventilation?

Send it to info@ventusers.org, and IVUN will find experts to answer it.

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We are currently finishing a 4.5 year study testing whether music is effective for anxiety self-management for patients throughout the duration of receiving mechanical ventilation in the ICU and if these patients have lower stress levels when encouraged to listen to preferred music whenever they like for as long as they like each day they are on a ventilator in the ICU.

While we are awaiting the final results, patients who have participated in the study have conveyed that they indeed feel relaxed and enjoy listening to music they prefer, including the

benefits of wearing headphones to reduce some of the noise in the ICU, which also assists with sleep.

The overall goal of my work is to provide a complementary intervention to the medical plan of care to bring some comfort and relaxation to patients receiving mechanical ventilation in the ICU. I am extremely grateful to those patients and family members who have participated in my many studies over the years. ▲