



Complex Child E-Magazine

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Vibration for Pain Control and Calming

by Susan Agrawal

My daughter has cerebral palsy and an undiagnosed disorder that causes her significant pain on a daily basis. In addition, she struggles with increasingly severe dysautonomia, which is her body's inability to self-regulate her autonomic nervous system, causing issues with her heart rate, temperature, blood pressure and other functions. Whenever her body is stressed by pain, illness, or even just a hot day, she begins to struggle dramatically.

We have spent several years trying to control both her pain and her symptoms from dysautonomia. While we do employ standard medical treatments, such as multiple narcotics, neuropathic pain medications, and rescue medications, we have found a surprisingly effective remedy in using intense vibration to control pain and calm autonomic symptoms.

Struggling with Pain and Autonomic Episodes

My daughter has “mini-crises” or episodes of pain and autonomic symptoms on a daily basis, despite her pain medications. During these episodes, she typically begins with flushing and a red rash over her body, tremoring of her arms or legs, an increase in heart rate above 160, a decrease in oxygen saturations with concurrent increase in respiratory rate and effort, an increase in temperature of one to two degrees, an increase in blood pressure, retching or vomiting, and irritability with moaning, crying, or screaming. These episodes do occur on a spectrum, with some being minor and insignificant, and others being more dangerous with unstable vital signs. At times, especially during illness, they may turn into full-fledged crises that are extremely life-threatening.

For my daughter, it is almost as if her body gets “stuck” out-of-whack and she needs something to bring her nervous system back to stable functioning. We have found several things that will pull her out of her episodes. Sometimes, simple supportive measures like comforting her and giving her oxygen are adequate. During severe episodes, we often need to medicate her with sedating drugs that put her to sleep. If an episode is clearly pain-related, an extra dose of pain medication often does the trick.

A Simpler Alternative: Vibration

But we have also found that minor and moderate episodes can often be handled without medication, using only supportive measures. One of the most effective interventions we have found is intense vibration. I'm not really sure why vibration makes such a big difference for my daughter, but the effect is amazing. Placing her on a vibrating mat or pillow will calm many of her symptoms, and we often see her tremoring and flushing disappear completely. Vibration will often take her heart rate from 180 to 110 in just a few minutes, improve her respiratory status, and lower her blood pressure. While I am sure vibration has a calming effect on her, the changes in her vital signs are so significant that vibration appears to also affect her nervous system and pain pathways.

While vibration does not always work by itself, employing it in conjunction with other interventions significantly reduces the amount of pain medication or sedating medication we need to give her for these episodes. This, of course, is great for her overall health, and allows her to function better physically and cognitively without the sedating side effects of medication.

There is scientific evidence that vibration and related treatments, including TENS units and other electrical stimulation device, can reduce pain. While this is not well understood, it is thought that vibration can affect both the peripheral and central nervous systems by altering pain perception. In the "pain gate" theory of pain, vibration serves as a sort of "distraction" to the nervous system, reducing pain activation in the brain.

Suggested Products

We use a variety of vibratory devices to help our daughter. The one we employ most often is a Homedics Vibrating Mat. There are several models available, but I recommend a zoned one with five or ten motors and high and low settings. This works well for a smaller child who may only lie on a portion of the mat, and the ability to control the level of vibration helps to fine-tune the effect. We typically use this mat on top of a recliner, but it can also be used on a bed or on the floor. These mats cost \$30-50 depending on features. Fancier models by other companies range up to \$200.

Another product we use frequently is a heating pad with massage function from Sunbeam. We virtually never use the heat function, but the pad allows either slow or fast vibration and is useful when you need something a little more portable. It does need to be plugged in, however. This product and similar items typically cost \$25-50.

When total portability is needed, we use a Homedics Vibrating Pillow, available for about \$15. While this does not vibrate enough to be fully effective, it uses batteries and can be used in almost any position or situation.

Handheld massagers in a variety of shapes and sizes are widely available, as are vibrating stuffed animals. My daughter has a battery-operated little vibrating sheep that she finds very calming, though it does not vibrate as intensely as she prefers. A wide assortment of vibrating products are available from special needs catalogs and websites, including Integrations, Southpaw, Flaghouse, and TFH.

Give It a Try

We were shocked at how effective intense vibration is for our daughter. It actually works as well for her as an extra dose of a mild narcotic. We are so pleased to have found a safe, non-pharmaceutical intervention we can use on a daily basis to treat her pain and dysautonomia.