



Buzzy, a Device to Reduce the Pain of Local Anesthetic Injections in Pediatric Dentistry

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For many children, seeing a long needle is one of the scariest parts of dentistry, and it is a tragedy for dentists to deal with that. Fortunately, according to a new study, a bee-shaped device has invented so that can distract children's mind and help to reduce pain and anxiety.

Buzzy was invented by Dr. Amy Baxter to control needle pain in patients. This device contains a vibrating base in the shape of a bee, along with a cold gel compress in the shape of a wing. Its purpose is to mask the pain caused by the injection by using various stimuli. They published their findings in the European Archives of Pediatric Dentistry 2018.

The study's lead researcher, Dr. Khalid Jamal Alanazi, stated the use of gels at low temperatures along with a stimulating device is based on the psychological concept of pain that is related to the patient's attention and understanding.

The mechanism of this device is such that it causes the brain cells to reproduce these vibrations, thus making it difficult for children to understand pain; adding the element of cold to these vibrations causes the perception of signals through the pain path to be more distorted and reduces the perception of pain. The researchers believed that vibration alone was not effective to reduce pain during injecting anesthetics. As a result, they decided to examine the Buzzy device that has the advantages of both cold and vibration features to better mask pain during injection into the gums.

All children in this study required local anesthesia of the maxilla on either side of their mouth and had no previous experience of injecting anesthetic. Anesthesia injection was performed during two dental visits.

For all children, topical Benzocaine 20% gel was used, and then 1.8 ml of 2% Lidocaine was injected at both visits. For half of the children, the Buzzy device was used in the first visit, but not in the second visit, and for the other half of the children, the Buzzy device was used only in the second visit.

The researchers measured the children's pain during the injection in three ways:

1. Use the Wong-Baker Pain Assessment Scale.
2. FLACC: The Face Legs Activity Cry Consolability Scale.
3. Heart rate with a pulse oximeter.

The FLACC and heart rate Scores were significantly lower when using the device (cold with vibration), regardless of whether it was used on the first visit or the second visit.

Also, the patients' heart rate at the time of injection with the Buzzy device was significantly lower than without the injection, indicating the effect of mild cold and vibration on a significant reduction in injection pain response.

While the Wong-Baker scale showed less pain when using the Buzzy device, it did not show a significant difference. The researchers note that this may be the reason which the perception of pain and the experience of pain are not the same.

Children who did not feel pain may express their sadness, while those who did have pain may not express it. The fact is that all children except three children, had better experiences when using the cold and vibrating device, which is a significant observation.

Finally, it can be added these findings may not be a generalization to all children and these results may not be the same for different injection sites and different techniques.

However, it seems that a combination of cold and vibration may help reduce children's pain during anesthetic injection; we hope that more studies will be conducted to confirm this link [1-4].

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