

Vibration used during injections A method to decrease patient pain .

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Have you every received any sort of injection?

- Injections hurt
- Some injections more than others
- Some patients tolerate injections more than others
- My orthopedic surgeon is has injected my knees
- Those injections hurt. I grit my teeth and take it.



- About two years ago I watched a colleague's video on his web site showing his technique for an injection
- He had this funny ball thing held to his patients wrist
- I called him up . What was that silver thing you were using?
- “Oh I got it from my supply house”



Oh I got it from my supply house



- He said it vibrates and helps with the pain of injection. The dentists are into this
- Really!



- So I looked it up
- Sure enough there are articles in
- the Dental, Plastic surgery, Pain management, Anesthesia literature
- I found zero in the Orthopedic literature on the pain of injections themselves.



- There are companies selling devices for this purpose



- This device is called a Buzzy and is marketed to dentists.



- Here is another commercial device being sold by plastic surgeon



I showed the video to my junior associate



So I shared my hand surgery friend's video with my junior associate of the time.

She screamed "That's a Vibrator" She started to laugh at me and has continued to do so.



- My literature research showed very few controlled studies demonstrating the validity of vibration as a pain control method.
- I found one study in the Japanese dental literature. They looked at 10 patients with vibration and 10 without and found no difference
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I did not think 10 patients made for a very large population sample

- I thought it would be an easily study to do in the office.
- If 10 patients per population was too small
- Would 100 be more representative?



- So before I launched my study
 - I asked my junior associate what she thought about the idea. She continued to laugh at me.
 - I asked my senior associate about doing a study. He said “do what you want, you always do”
 - So I did a study



- I checked out various forms of vibration
- One dentist used a swab mounted on a battery powered razor handled.
- I tried his method.
- I was not impressed with the buzz
- My powered toothbrush was on the same sink. It made a nice buzz
- So I used a tooth brush as a source of vibration



- I purchased a new tooth brush at the corner drug store for \$4.99 on sale. I did not want to spend to much money on this project.



I used the toothbrush and Ethylene Chloride spray



- We studied 200 consecutive injections in the hand and upper extremity
- Every patient was treated the same
- gloves , injection, ethylene chloride spray
- And every other patient had the vibrating toothbrush
- Every patient completed a Visual Analogy Pain Score.



Happy face to Crying Face



Almost every patient understand this scale.



- We did not tell anyone why we having them fill out the Visual pain score sheet
- We never cheated on the every other patient randomization schedule



After two hundred patients

- At the end of the study
- I compared the two groups
- Each group was remarkably similar
- age, gender , types of injections



- I calculated the mean pain score for both groups



Surprise

- The vibration group mean score was 25% lower than the control group



A Student T test was run

- My results are valid to the 95 percentile.



- I calculate my cost of use of the toothbrush
 - New covering glove
 - battery
 - the cost of the toothbrush amortized per case
- My cost is about 3 cents per patient



- Since vibration is a cheap technique
- and it is an easily thing to a add to my injection technique
- and since it seems to help the pain of the “shot”
- and since my patients seem to appreciate my concern for their pain
- I continue to use the tooth brush



- There is little down side
- Beside not hurting patients is good for business.



Recently the Buzzy company appeared on the Shark Tank

- My patients told me about the recent
- episode.
- The Sharks loved the idea.
- The Sharks wanted to buy in
- They were turned down by the Buzzy owner
- Do you think the Sharks will buy half of my tooth brush for \$2.50 ?



Next time I get my knees injected

I am going to hand my orthopedic buddy a
powered toothbrush.

I can afford the \$4.99

