



Received: 02 January, 2021

Accepted: 27 January, 2021

Published: 29 January, 2021

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Keywords: Injections; Painless; Intramuscular; Skin-  
tap

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## Short Communication

# Painless injections: Helfer skin tap technique

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## Abstract

The purpose of this descriptive, quantitative pilot study was to determine if a skin tap technique refined by the researcher would reduce pain of intramuscular injections in adults. This approach was developed applying anecdotal clinical experience; integrating the theories of gate control, relaxation and distraction. Subjects were 74 patients in a suburban Emergency Department. who received two injections of the same pharmacological mix by 13 nurses who utilized the Helfer skin tap vs. standard technique. The patients using a visual analog Likert scale then compared pain perception, with a section for subjects to write verbal comments. Of the 74 patients, 96% of the subjects found the skin tap method to be less painful. No patients perceived standard technique as less painful. Four percent of subjects perceived both injections as painless. In addition, 88% subjects perceived the skin tap technique as totally painless. Statisticians utilizing Sign and Wilcoxon Matched-Pairs Signed-Ranks Tests analyzed data.  $P=0.0000$ ; in both tests.

The findings suggest that the Helfer Skin Tap Technique is a useful method for decreasing the pain of injections for adult patients.

As of 12/2020 I have had 34 years clinical experience as an ED RN and 20 years as a Family Nurse practitioner. I have routinely given routinely injections most work days. My goal is to share my experience to alleviate suffering at any level if possible.

Most medical clinicians hear on a frequent basis, "Please don't give me a shot!" The reasons for not wanting one are pretty obvious. Being able to provide patients with a less painful experience is a standard for nursing/medical care. Is it really possible to give injections that do not hurt?

I have developed and have used the "Helfer Skin Tap" injection technique after which patients consistently remark that that they did not feel the injection. In fact, the usual reaction is utter surprise and delight that the injection "didn't hurt" or more commonly "didn't feel it"! Since I first published my article, other countries have used this method even on newborns with great success. I have some youtube videos demonstrating the procedure. My only incentive is to decrease pain for those having to receive vaccines and really any injection.

The reason I started developing my technique is that almost 44 years ago, an older nurse suggested that tapping the skin at the same time of the injection would alleviate pain. Anecdotally,

I soon found that the technique for giving painless injections was slightly more complex, thus leading to the developing of my "Helfer Skin Tap Technique".

A pilot research study that I conducted in 1998 on seventy-four patients in an Emergency Department (ED) demonstrated that the technique worked. Since then, other researchers in other countries have demonstrated similar results with the Helfer technique, on all age groups including newborns.

For the pilot project, adult patients who were given two injections one by their personal method and the other with the Helfer Technique that was taught to them. The 13 clinicians had at least 5 years of injection experience. The study was limited to medications that were to be given in 2 divided doses ie Procaine Penicillin or Cetriaxone The injections had to have the same pharmaceutical mix and needle gauge/syringe size. The only difference was the injection technique employed. Patients were then given the medications and were asked to compare the difference using a visual analog scale to determine pain sensation between their technique and the Helfer Technique.

Ninety-six percent found the "Helfer Skin Tap" method to be less painful. Eighty-eight percent perceived the Helfer technique as totally painless. Four percent of all adult patients perceived both Helfer Technique and the other nurses



injections as painless. On an analog scale of 0-10 describing their discomfort, most patients rated the Helper method as 0, as compared to an average of 3-4 for the standard technique that the nurse personally employed. There was a space for providing written comments and most patients commented that “they didn’t feel it”, in relation to the Helper Technique. I do plan to publish the entire study.

Nurses, starting out as novices with instruction, all develop our own technique for administering injections. In a study done by Katsma and Smith [1], disparities (by both novice and experienced nurses) were found in the practice of administering injections in both hand motion and needle path width. This helps explain why some nurses give uncomfortable injections even after years of practice.

While limited regarding injection discomfort, nursing research has demonstrated that there is reduced pain in giving injections into a relaxed muscle [2-4]. Beyea and Nicoli performed a comprehensive review of nursing fundamental texts and discovered that the “proper” procedure described for giving injections was often non-research based and usually contained erroneous and or out of date recommendations.

In nursing textbooks, the most consistent procedure mentioned is to “insert the needle in a quick, dart-like motion at a ninety-degree angle into the muscle”. Dietrich mentions performing a skin tap while inserting the needle to reduce the pain at the injection site, but the actual technique is not clear. This is not the only mention of a skin tap. Brentnall, an Australian physician advocated utilizing a skin tap technique into a relaxed muscle.

### Helper skin tap technique

This technique uses basic concepts regarding pain theory. This technique also uses the Gate Control Theory. Mechanical stimulation of the large diameter muscle fibers diminishes the influence of small, pain carrying fibers.

There are two major points:

1. Muscle relaxation that physically decreases the resistance to needle entry.
2. Distraction, by simultaneous tapping of the skin while the needle is inserted and removed.

### Procedure

1. Augment muscle relaxation by having the patient in the most comfortable position possible. If the deltoid muscle is used, instruct the client to relax the arm by placing it in a dependent position (hanging loosely at the side). For injections into the gluteus maximus muscle, have the client lie prone (found to be best for relaxing muscles) with their toes turned inward to internally rotate the femur [1]. If the client must be in a side lying position, make sure the knees are flexed for relaxed muscles.
2. After identifying the injection site, tap the skin several

times with the palmer aspect of the fingers of the dominant hand for approximately five seconds to relax the muscle.

3. After prepping the skin with alcohol uncap the syringe in the dominant hand. Make a large V with the thumb and index finger of the non-dominant hand and tap the skin. The entire hand is used to tap the muscle three times. It is essential that the tap (not slap) be firm using the entire hand, in order to ensure stimulation of the large fibers. The wide span of the hand promotes broad stimulation of the large muscle fibers around the injection site. A light tap will not have the same effect, and a slap may sting the skin.
4. On the count of three, the needle is simultaneously inserted at a ninety-degree angle into the muscle. Tapping several times helps to relax the muscle more, and counting to three helps the nurse to synchronize the muscle tap with the needle insertion. \* It is extremely important that the needle entry be simultaneously done with a skin tap to ensure painless injection. To avoid a needle stick, the wide V with the thumb and index finger allows sufficient space for the needle to be inserted safely.
5. After aspirating to prevent injection into a vessel as per normal routine, inject the medication slowly, while continuing to gently tap the muscle it relaxed with the palmer aspect of the fingers.
6. To remove the needle, simultaneously tap the skin with the V tap of the non-dominant hand as the needle is withdrawn.

While clients often feel the medication being injected, they usually do not experience the sensation of the needle insertion and removal, which is often the frequent cause of their anxiety in receiving injections. I have given Procaine Penicillin with a #18 gauge needle and patients have said they never felt the injection. This can be employed with any subcutaneous injections such as insulin, thus alleviating injection fears once they have received this technique.

Try the “Helper Skin Tap Technique”. Once you can see the positive reaction from your patients, I hope you will be encouraged to teach this to your students. As patients have frequently told me, “ I wish you could teach other nurses/providers how to do this.” I have posted youtube videos that help to explain how to use this technique. The Helper Technique can make all injections significantly painless.

Acknowledgements to Louis Feldman and Abdul Fazal Statisticians, California State University and Dana Reneau, Professor of Mathematics, California State University.

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