



# Minimize That “Pinch and Burn”: Tips and Tricks to Reduce Injection Pain With Local Anesthetics

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*Local anesthetics are commonly utilized in the practice of dermatology. Minimizing local anesthetic injection pain can be beneficial to both physicians and patients. Easily implemented techniques that reduce injection pain of intralesional local anesthetics are reviewed.*

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The use of local anesthetics, particularly local anesthetic injections, is a core part of the practice of dermatology. The use of anesthetics in both diagnosis and management make the administration and usage of these medications a foundational skill for all dermatology residents. Minimizing that familiar “pinch and burn” and giving patients a nearly pain-free experience can result in satisfaction for both patients and physicians. This column describes several useful and easily implemented techniques that residents can incorporate into their daily practice.

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## **Buffer**

Plain lidocaine is less acidic than the more commonly utilized lidocaine 1% with 1:100,000 epinephrine. When the latter is buffered with sodium bicarbonate in a 10:1 dilution, it is superior to its unbuffered counterpart.<sup>1</sup> This method works by raising the pH of the solution, which is normally 4.2, to a physiologic and more comfortable 7.4.<sup>2</sup> Of note, bupivacaine is more acidic than lidocaine.<sup>3</sup>

## **Warm**

Warming anesthetics has been shown to reduce injection pain. Warming anesthetics to body temperature or up to 40°C to 54.4°C (104°F–130°F) has been studied and recommended.<sup>4-7</sup> Warming combined with buffering may result in the least painful injection.<sup>4-6</sup>

## **Use Smaller-Gauge Needles**

A more obvious tip, using smaller-gauge needles can reduce injection pain. Generally, 27- or 30-gauge needles are commonly recommended.<sup>8,9</sup>

## **Limit Repeated Use of the Same Needle**

Switch to a fresh needle when you have to inject multiple times in the same lesion or when you have multiple injection sites. In addition, use different needles for drawing up and for the actual injection procedure. A dull needle means more pain.

## **Perpendicular Injection Technique**

Compared to a 45° injection angle, lidocaine injected at a 90° angle reduces pain,<sup>10</sup> as this technique

minimizes the number of nerve endings that come in contact with the needle.<sup>8</sup>

### Inject Slowly

A slow injection technique using small volumes can substantially minimize pain, as it allows for the nerve endings in the skin to accommodate for the distortion caused by anesthetic infiltration.<sup>2</sup>

### Pulse Injection

Pulse injections can be less painful than injecting an anesthetic in a continuous fashion. It has been recommended that 0.1 cc of anesthetic be injected followed by a 3-second pause, then repeating this step 2 to 3 times. More volumes may subsequently be administered.<sup>8</sup>

### Thoughtful Reinsertion

When larger surface areas must be anesthetized, the needle may have to be reinserted multiple times. In these instances, injection within 1 cm of the visibly blanched area of skin ensures that lidocaine (and epinephrine, if such a solution is used) has already infiltrated that area.<sup>2</sup>

### Distraction

There is merit to the idea of distracting the patient when injecting local anesthetics. Distraction methods including engaging in simple conversation with the patient, having the patient look away, playing background music, and even suggesting that the procedure is painless or has minimal pain have shown utility in minimizing injection pain.<sup>8,11</sup>

Other distraction techniques are physical, including stretching and scratching the skin, pinching, local vibration, and pressure.<sup>12,13</sup>

### Combination Anesthetic Technique

Topical anesthetic application, such as lidocaine 2.5%–prilocaine 2.5% cream, can be applied 60 to 120 minutes prior to intralesional anesthetic injection to attenuate injection pain.<sup>2,8</sup> Ice or ethyl chloride spray also can be utilized and has a faster onset of action than topical anesthetics.<sup>2,8</sup>

### Conclusion

The knowledge and application of techniques to minimize pain associated with local anesthetic injection can greatly enhance a resident's

practice. Learning and incorporating these techniques early on in resident training can help instill these skills that can be useful for the remainder of a dermatologist's career.

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