



“Psychology Works” Fact Sheet: Needle Pain

Why does pain from needle procedures matter?

Needle procedures are used to prevent, diagnose, monitor, and treat various health conditions. For example, insulin injections and finger pokes are a common experience for people with diabetes while bone marrow aspirations and lumbar punctures are experienced by people with cancer.

Immunizations/vaccinations are the most common source of needle pain in childhood. For example, the Canadian Immunization Schedule recommends over 20 needles, not including yearly flu vaccinations, before a child reaches the age of 18. While vaccinations are a critical part of health care that have made a major difference in the prevention of infectious diseases, pain can be a consequence of these procedures. If the pain from needle procedures is not properly managed, there are short and long term consequences including longer procedure times, increased risk of fainting and injuries, negative memories, fear and avoidance of future procedures.

Why does pain from needle procedures matter?

The good news is that there are many ways that pain and distress during needle procedures can be managed. Types of strategies include:

- procedural – how the clinician performs the procedure (e.g., no aspiration for immunizations)
- physical – across ages, sitting upright is usually helpful unless the person has a history of fainting. If there is a history of fainting, a technique called muscle tension can be helpful.
- pharmacological – topical anesthetics or other medications for more invasive procedures.
- psychological strategies. More on these below for preschoolers and older.

The recommended strategies can change depending on the age of the person getting the needle. For example, infants benefit from kangaroo care (<1 month) or being closely held by the caregiver, breastfeeding, and/or sugar water for more minor procedures such as immunizations or venipunctures.

Research shows that the psychological techniques listed below help to reduce immunization pain, and can help for other needle pain in children as well as adults. They are all relatively easy to use and low in cost, if not free. Each technique can be adjusted as needed, depending on a person’s age and the specific procedure they are having.

- **Education and Preparation** – everyone deserves to know what procedure they are getting, why, and what will be done to make it comfortable (what they can do and what others will do). Provide choice when possible: for example, do they want to look at or away from the needle? What coping strategies will they use? Do they want a caregiver or other trusted individual to be present?





- Before* a needle procedure:
- Answer any questions people have in a way that is honest but appropriate for their age
 - Tell very young children about the needle only a little while before the procedure
 - Tell older children, adolescents, and adults about their procedure before the day in question so they can prepare coping strategies
- **Communication to the individual immediately before and during the procedure. For all ages:**
 - Speak calmly, clearly, with simple wording.
 - Signal the start of the procedure in a neutral way (e.g., "1, 2, 3, here we go").
 - Do not say "it won't hurt". That does not help and it is not necessarily true so could lead to mistrust.
 - Do not reassure (e.g., say "it's okay" or "almost done") over and over again. It does not help.
 - **Distraction** – these are strategies that involve taking a person's attention away from the procedure. Use age-appropriate distraction techniques such as:
 - Talking about things other than the procedure (e.g., holidays, favourite movie)
 - Toys
 - Videos (with adult coaching to engage for younger children)
 - Singing
 - Video games
 - Books
 - **Deep breathing or blowing** – this strategy involves the person taking slow, deep, regular breaths, which can help with feeling relaxed. Using a toy is recommended for school-aged children and adolescents (e.g., pinwheel or bubble wand) which then also includes distraction. Children (and adults) can be instructed to take a calm and slow breath from their diaphragm (e.g., "take a deep breath in from your tummy. When you breathe in, your tummy should fill up like a balloon. Then breathe out pushing out all the air."). Adults may also find coughing or taking a deep breath in and holding it (for brief injections such as immunizations) helpful.

What if a high level of needle fear is present?

Needle fear is present in about 2/3 of children and 1/4 of adults and can range from mild to severe levels. The strategies listed above are helpful for people with low to moderate needle fear. Across the lifespan, about 10% of individuals have high levels of needle fear that can interfere with their willingness to undergo needed medical procedures. At the most severe end of the spectrum, ~4-5% of individuals have a phobia related to needles which is characterized by extreme fear and anxiety and called blood injection injury phobia. People who have high levels of needle fear require different strategies than are listed above – they need to undergo exposure-based therapy in which they face their fear in a controlled,





hierarchical manner. After their fear reduces, they can then benefit from the traditional pain and distress management strategies.

Where do I go for more information?

- Recently, the HELPinKids&Adults Team, a group of many different types of health professionals, including psychologists, published a pain management guideline for childhood immunizations. <http://phm.utoronto.ca/helpinkids/>
 - The full HELPinKids&Adults team Clinical Practice Guideline can be found at: <https://www.cmaj.ca/content/cmaj/187/13/975.full.pdf>
 - The appendices contain age based algorithms and other tools
 - The CARD™ system for school based immunizations is also based on this work: <https://www.aboutkidshealth.ca/card>
- Solutions for Kids in Pain: <https://www.kidsinpain.ca/>
- ItDoesn'tHaveToHurt social media campaign and resources (e.g., videos) are available here <https://itdoesnthavetohurt.ca/>
- For needle fear:
 - CANVax Podcast on needle fear (see episode 3): <https://canvax.ca/emerging-topics-podcast>
 - Clinical Practice Guideline on treating high levels of needle fear (extra info in the supplementary material): <https://www.tandfonline.com/doi/full/10.1080/16506073.2016.1157204>
- Resources and videos on helping infants specifically:
 - Be Sweet to Babies: <https://www.cheo.on.ca/en/clinics-services-programs/be-sweet-to-babies.aspx>
 - Reducing pain from vaccinations in babies: <https://www.youtube.com/watch?v=5Oqa1Fag5eQ&feature=youtu.be>

You can consult with a registered psychologist to find out if psychological interventions might be of help to you. Provincial, territorial, and some municipal associations of psychology often maintain referral services. For the names and coordinates of provincial and territorial associations of psychology, please visit: <https://cpa.ca/public/whatisapsychologist/PTassociations>

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Your opinion matters! Please contact us with any questions or comments about any of the *Psychology Works* Fact Sheets: factsheets@cpa.ca

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