

Pain experts say fear of needles partly to blame for Canada's relatively low immunization rates

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Helping both adults and children overcome their fear of needles could have a significant personal and public health benefit, according to a University of Alberta pain expert.

"We have a vaccine hesitancy crisis in Canada," said Samina Ali, professor of pediatrics and emergency medicine. "Eight to 10 percent of people report their hesitancy is due to needle fear or phobia, so if we can address this one issue we can get eight to 10 percent more people vaccinated, which is huge."

Needle phobia is a fear of needles that can cause severe panic attacks or fainting and can lead people to avoid getting flu or travel vaccines, Ali said.

She cited a [Canadian study](#) that reported needle fear or phobia was the reason mentioned by seven to eight percent of those who didn't get immunizations, and a more recent [American review](#) that showed avoidance of influenza vaccination because of needle fear occurred in 16

percent of [adult patients](#) and eight percent of [health-care workers](#).

Health Canada reports that just 38 percent of Canadians were immunized against the flu during the 2017-18 season. That falls far short of the national flu vaccination goal of 80 percent, and the rate in other countries including the U.K. at nearly 75 percent and the U.S. at 45 percent. While immunization rates against other illnesses are improving slightly among Canadian children, they are well below the national targets of 90 to 95 percent.

Fear starts in childhood

Ali said needle phobia usually starts with a single bad experience or series of experiences as a child.

"The memory of [pain](#) can stick with you and make how you process pain more complicated for the rest of your life," she said.

"For some adults it's catastrophic—they'll risk getting influenza or hepatitis. They know they should get the shot, but they hate needles so much they won't go to the clinic."

All children experience pain, according to Bonnie Stevens, co-director of the Pain Centre at SickKids Hospital in Toronto and a professor of nursing at the University of Toronto. For example, most Canadian children get a vitamin K injection at birth and are scheduled to receive approximately 20 vaccinations before the age of five. Hospitalized preemies and sick newborns undergo six to 16 painful procedures per day, Stevens said.

"Pain has consequences," she said. "It's upsetting for the child and the parent, and there can be long-term consequences such as fears and needle

phobia if the pain is not treated or managed."

Parents can pass on their own fear of needles or make the pain worse for a child when they are getting treatment during infancy and early childhood, Stevens added.

"Parents play a key role," she said. "How much anxiety a child has, how they cope with a painful event, can depend on how much the parent supports them or catastrophizes."

Ali encouraged parents to stay calm and positive when their child undergoes a skin-breaking procedure such as a vaccination, while acknowledging what is going on in an honest way. She pointed out that a parent minimizing their child's experience of pain or telling them to "tough it out" is not helpful in the longer term.

"I'll just let the parent know, "Yes, I can see your child is tough, but let's save that for unpredictable events in life."" Ali said. "This is predictable and can be managed. It doesn't have to hurt."

Comfort and distraction really work

Both Ali and Stevens said health-care providers and parents should use tested methods to minimize pain for babies, including:

- applying numbing cream on the skin before a needle
- holding the baby skin-to-skin on the parent's chest
- breastfeeding during and after a painful procedure
- giving a couple of drops of sweet solution prior to a procedure
- bundling with a blanket to make the baby feel secure
- offering a soother

Stevens, an expert in implementing new knowledge in practice, said health-care professionals are not always aware of new evidence or are unable to effectively put it into practice due to a lack of time, resources or "know-how," but parents should feel confident asking for pain management measures for their child and participating in comforting

strategies. Stevens heads a cross-country study on the effectiveness of an online resource to help health professionals improve pain treatment for hospitalized infants.

Ali said distraction is also key, noting that bells, toys and bubbles will work for infants, while animated conversation, videos, music and video games are helpful for older children. Ali has studied how a robot called MEDi can help distract children in the U of A Hospital's emergency department, and in January she will begin a study using virtual reality goggles to determine whether they can make children feel safer and less distressed during procedures. Her research in pain management has been funded by the Stollery Children's Hospital Foundation.

Ali said that although much fewer studies have been done to test the same measures of providing comfort and distraction to adults, she suspects they work just as well.

For adults with overwhelming [needle](#) phobia, she said research suggests doing deep breathing and other relaxation exercises, as well as desensitization therapy with a psychologist.

"Pain is the reason eight to 10 percent of children are not getting vaccinated," Ali said. "Managing pain better could in many ways be a very easy fix, because we have so many tools at our disposal."

Provided by University of Alberta

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