

Reducing Pain and Anxiety for Children getting Shots

Selections from the literature

SKIIP 2016-17

Since children will only be getting injectable influenza vaccine this year, we want to share some suggestions for making getting a shot less stressful and less painful for children at a SKIIP clinic for nurses who don't regularly administer vaccinations. Many of these suggestions are taken from the literature and have some degree of scientific vetting behind them.

Before the shot

Treatment	Recommendation	Infants & children <3 years	Children 3-12 years	Adolescents 13-17	Adults 18+
Prepare Children with education	Explain what will happen ahead of time can reduce stress	-	Yes	Yes	-
Prepare Parents with education	Let parents know how they can best help their children during the shots	Yes	Yes	Yes	-

During the shot

Treatment	Recommendation	Infants & children <3 years	Children 3-12 years	Adolescents 13-17	Adults 18+
No Aspiration	It is no longer recommended to aspirate which can cause the needle to wiggle around and create more tissue trauma.	Yes	Yes	Yes	Yes
Position	Have patient sitting up. Children can sit on a parent's lap; this can also assist with keeping still the limbs to be vaccinated. Forcibly restraining children should be avoided because this can increase fear. Child should not sit on provider's lap.	-	Yes	Yes	Yes
Holding	Recommend parent hold young child; the provider however, should not hold child.	Yes	-	-	-
Parent present	Have the parent with the child	Yes	Yes <10 years	-	-
Vibrating device with cold	Use an external vibrating device with cold during vaccine injections	-	Yes	Yes	-
Muscle tension	Suggest muscle tension for vaccine injections in individuals with a history of fainting (tense muscle in a different area)	-	Yes >7	Yes	Yes
Verbal signal of impending shot	Suggest a verbal signal of the impending procedure (a signal of impending pain) before vaccine injections. Something like "ready, here comes a quick pinch"	Yes	Yes	Yes	Yes
Distraction	Video distraction during vaccine injections, such as having child watch a cute YouTube video on an iPad or cell phone	Yes	Yes	-	-

	Read a story to child or have child watch television	Yes	Yes		
	Verbal distraction, such as asking about favorite animal, game, book, place to eat, pets, subject, etc.		Yes	Yes	-
	Music distraction		Yes	-	-
Breathing distraction	Have child blow bubbles or pinwheel while administering vaccine		Yes	-	-
	Have child count backwards from 10		Yes	Yes	-
	Have adult hold their breath or cough during procedure	-	-	-	Yes
No manual tactile stimulation	Recommend AGAINST using manual tactile stimulation				
No warming of vaccine	Recommend AGAINST warming the vaccine before administering				
No using reassurance	Suggest AGAINST using repeated reassurance during vaccine injections—this can heighten anxiety				

After the shot

Treatment	Recommendation	Infants & children <3 years	Children 3-12 years	Adolescents 13-17	Adults 18+
Rubbing the injection site		-	Yes	Yes	Yes
Distraction with toy or sticker		Yes	Yes		
Giving lollipop or other sweet		Yes	Yes		
Acetaminophen	Recommend AGAINST giving acetaminophen or ibuprofen				

Some quotes from the articles cited below

“Children show lower levels of distress when parents stay before vaccine injections than when parents leave and prefer to have their parents present.¹³ Family-centred health care promotes caregiver presence whenever possible.²¹ Because parents’ behaviour can influence a child’s level of distress, education of parents is recommended to facilitate child coping and to alleviate pain, fear and distress”

“Individuals undergoing vaccination should be given information about what will happen (procedural information), how it will feel (sensory information) and how to cope (training in strategies to mitigate pain and fear).^{22–24} Information should mostly be given in advance. At the time of the procedure, the focus should be on neutral information about the procedure and coping strategies rather than threatening sensory information that can increase fear. There is evidence that education reduces preprocedural fear in children undergoing vaccination”

For older children, he said, you want something that actively engages the child's attention, whether it's reading a book, spinning a pinwheel or blowing bubbles. "Something that changes what they're attending to is enough to change what the brain does, so the child doesn't feel it in the same way."

There is also research, Dr. Cohen said, on how parental behaviors affect children's distress. There's some evidence suggesting that more extensive parental reassurance is actually correlated with more prolonged distress — though that doesn't tell you whether more child distress prompts more parental reassurance, or whether more parental reassurance prolongs the distress.

"Everybody's anxious when they don't know what is going to happen to them," Dr. Taddio said. "The idea is to tell kids with words what's going to be involved in the procedure — a pinch, pressure on your arm, then it goes away — this bothers some kids, doesn't bother other kids, we're going to try to find a way to help you so it doesn't bother you."

Children who remember extreme distress will be much more frightened the next time around. "Do your best not to make it a big event," Dr. Taddio said

"Longer needles are usually associated with less pain and less local reaction. During the injection, parental demeanor clearly affects the child's pain behaviors. Excessive parental reassurance, criticism, or apology seems to increase distress, whereas humor and distraction tend to decrease distress. Distraction techniques vary with the age, temperament, and interests of the child, but their efficacy is well supported in the literature."

"The length of the needle selected for intramuscular injections has been examined in a number of studies. Although it would seem intuitive that the shortest needle with the thinnest gauge would produce the least trauma and pain, this does not seem to be the case. A number of studies support the contention that longer needles, which are more likely to penetrate muscle than are shorter ones, cause less pain and fewer adverse effects."

Sources:

"Reducing pain during vaccine injections: clinical practice guideline," Anna Taddio et al. CMAJ 2015. DOI:10.1503

"A Flu Season Without FluMist? Making Shots Less Painful for Children" PERRI KLASS, M.D. New York Times; <http://nyti.ms/2cLUOPv>

"Pain Reduction During Pediatric Immunizations: Evidence-Based Review and Recommendations" Neil L. Schechter, MD et al. Pediatrics, 2007; 119:e1184