

Needle Pain



Stress Reduction Techniques

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Outline

- What is needle pain?
- Why should we manage it?
- What does the evidence say?
- WHO recommendations
- How do we implement recommendations?
- Key points to remember
- Resources



Needle Pain and fear

- Intense fear, pain and/or distress associated with needles
 - immunisations, venepuncture for blood tests, IV cannulation, IM injections, SC injections
- Psychological response
- Physical response – Stress!!!!!!
- Needle pain is primary source of anxiety for caregivers of children receiving injections (Taddio, 2015)
- Not limited to babies and children...adults feel pain too!
- Fear can intensify pain

Why the big fuss?

- Early childhood immunisations
 - vital for public health
- *But* painful/distressing for infants, children their families and health care providers
- Health care providers find performing needle procedures in fearful children challenging
- Relief of pain/distress is a basic human right
- Potential long term effects of unmanaged needle pain

- needle fear/phobia (approx. 20% adult population, Wright 2009)
- non-adherence to immunisation schedule
- vaccine hesitancy (influenza)
- avoidance of healthcare

Evidence

- Professor Anna Taddio

- University of Toronto
- Sick Kids Toronto (Pharmacist)

- Dr Christine Chambers

- Dalhousie University
- Centre for Paediatric Pain Research

- Denise Harrison

- University of Ottawa
- CHEO Research Institute

- World Health Organisation (WHO)

- endorsed guideline developed by Professor Taddio in a bid to increase vaccination rates and reduce spread of diseases globally

WHO Recommendations

General Measures (all ages)

- Neutral language
 - One VOICE
- Positioning
 - Comfort Positioning
- No aspiration during IM injection
- Most painful vaccine last



WHO Recommendations

Age Specific Measures

- Infants and Young Children

- the caregiver should be present
- <3 years held by caregiver
- >3 years seated on caregiver's lap
- breastfeeding commenced before and continued throughout vaccine administration
- distraction

- Adolescents

- non-procedural talk

- Adults

- distraction
- breathing exercises



WHO Recommendations

Pharmacological Measures

- Not recommended globally
- Topical anaesthetic creams
 - AnGel, EMLA, LMX
- Sucrose



Implementation

- **Neutral language – “One Voice”**
 - teaches health care providers how to create a less-threatening environment for children undergoing medical procedures
 - online PowerPoint, handouts, posters and ID badge cards
- **Comfort Positioning**
 - Minimises child’s movement during needle procedures
 - adaptable for variety of settings
 - immobilises extremity
 - offers secure, comforting hugging hold for child
 - comfort through close contact with caregiver
 - positive assistance, not negative restraining
 - sitting position promotes sense of control
 - fewer staff required to complete the procedure
 - Comfort Kids at RCH



Get Comfy with comfort positions



Bear Hug

- Best for small children who need distraction and prefer not to watch procedure
- Allow the child to straddle parent or staff and have a secure "hug"



Side Sitting

- Great for older children who may want to watch while feeling secure
- Use when child can't straddle parent or staff

Swaddle

- Best for infants and young toddlers
- Provide TootSweet® if child is not NPO
- Encourage parent to remain in eyesight of child



Back to Chest

- Safe and comforting position with child's feet secure in parent's legs
- Great for older children who want independence, but need to be held



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Back to Chest: Port Access

- Child remains secure and easily distracted
- Use when child cannot sit still but wants to remain sitting up

Positioning for Comfort

Control is Key to Cooperation

Positions can maximize the child's sense of control and cooperation during procedures. Combining the appropriate position with a comforting hold by a parent is always preferable.



Two-Person Hold for IV Start Position
Use when the child cannot straddle the parent/staff. Allow the child to straddle parent or staff. Secure the child's arms and head by giving a hug.



Side Sitting Position
Use when the child cannot straddle the parent/staff. Allow child to swing legs safely. Older children feel secure and less confined.



NG Tube Placement Position
The child's head against parent's shoulder or chest. Allow for immobility of the head and secure placement of tube.



IV Start in a Sitting Position
Allow child to watch. Guide child throughout procedure. Encourage deep breathing and imagery hold-on.



Positioning for Leg Injections
Legs/feet are flexible and extend to extend. Holding's feet from only. Child gets a sense of control in choosing to watch or not.



Positioning for Catheter Placement
Always parent to hold the child against them. The child cannot see or hear during insertion.



IV Placement in Foot
Strong position decreases the ability to kick and move the leg. Cougher/staff is close and able to comfort.



Infant Swaddle for IV Start
Use swaddle to swaddle infant. Hold child in arms or lay child on the bed with parent holding from the side. Use Swaddle when to remain in a doctor's.



Positioning for Port Access
Hold child against you with one arm supporting child's arms and the other used to help extend their head. Child's feet are able to provide distraction during insertion. Have a staff member assist when holding to remain child on bed with increase anxiety level.



Positioning for Sutures
Always parent to hold the child against them in a secure hug. Leg and hand are able to extend. Child is able to be distracted while focus is straight in front of them.



Two-Person Hold for Nasal Swabs
Parent is able to provide a hug hold and one staff member is available. If needing double nasal swabs it is important to do the two nostrils and do them both at the same time. Sweet Ease (Suzanne) can be used with children under 6 months.

How to Help Children Cope During a Procedure

- Talk in a calm voice.
- Praise your child.
- Rub your child's arm, forehead or cheek.
- Position yourself so that your child can see or touch you.
- Be honest.
- Hold your child's hand.
- Provide coping/distraction as appropriate.

Pharmacological Pain Management

- Sweet Ease (Suzanne) for infants 6 months or younger.
- EMLA or LMX4 Topical Anesthetic (use with children over the age of 1 month).
- Ethyl Chloride Medium Jet Stream Spray (topical anesthetic Skin Refrigerant).
- Lidocaine
- LAT
- Use Buzzy if available (www.buzzy4kids.com)

ONE VOICE

- One voice should be heard during the procedure.
- Need for parental involvement. Educate the parent before the procedure about what is going to happen.
- Validate a child with your words.
- Offer the patient the most comfortable, non-threatening position.
- Individualize your game plan.
- Choose appropriate distraction/ coping techniques to be used.
- Eliminate unnecessary staff who are not actively involved with the procedure.

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- **Breastfeeding**

- has been shown to reduce crying time and pain scores in babies who are breastfed during immunisations (Harrison, 2015)

- non-nutritive sucking (sucrose)

- **Breathing exercises**

- focusing on breathing fully and deeply

- moves the patient out of their sympathetic nervous system (fight or flight) and into their parasympathetic system (relaxation and calm)

nervous

- **Distraction & non-procedural talk**

- reduces fear, anxiety and pain

- aim to take the mind off the painful procedure, onto something more pleasurable

- emphasize coping skills rather than information



Distraction ideas

- BUZZY
- Phone / iPad - look at photos, play game
- books
- Talk- School/ footy/ Spiderman T-Shirt...
- Sing a song
- TLC Distraction box- bubbles, noisy toys



BUZZY

BUZZY is a vibrating device which incorporates a cold pack. Combined effects of vibration and cold interrupt the pain sensation of a needle stick, reducing pain perceived

BUZZY can be used prior to, during and after painful procedures

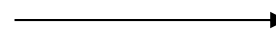
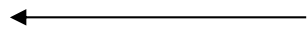
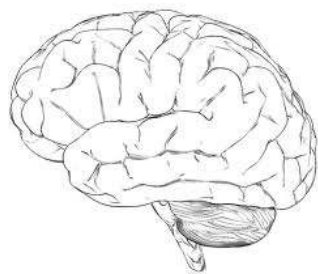
- Insertion of IV cannula
- Port access
- Venepuncture
- Finger pricks for blood samples
- SC or IM injection



How does BUZZY work?

BUZZY needs to be placed “between the pain and the brain” to be effective

Using the body’s own nervous system, the gate control theory invokes the concept that the final common pathway for sharp pain to the brain can be shut out by the nerves that transmit cold and vibration senses = stimulating cold receptors can dull needle pain



Virtual Reality (VR)



Topical anaesthetic creams (TAC)

- Produce anaesthesia by inhibition of Na⁺ channels in sensory neurons
 - Reduction in self reported pain scores when TAC used for immunisation (Shah et al 2009)
 - 30-90 mins recommended length of time prior to needle procedure
-
- EMLA – Lignocaine + Prilocaine
 - AnGel - Amethocaine
 - LMX – Lignocaine



TAC Barriers

- Time

- Some caregivers don't want to wait 30-90 mins for topical anaesthetic cream to work
- "Coolsense" may be an alternative, although evidence is limited for its effectiveness



- Staffing

- Lack of DIV 1 nurses in pathology clinics at MCH
- DIV 2 nurses not able to apply topical anaesthetic creams or administer sucrose



Nitrous Oxide

- Not recommended in WHO guideline
 - but widely used in Australia
- Odourless, colourless anaesthetic gas
- Quick onset and offset
 - 3 to 5 minutes
- Sedation, amnesia, analgesia, anxiolysis
 - excellent for quick needle procedures
- Can be used with or without a pre-med
- Most effective when used in conjunction with other comfort measures

Sucrose

- Analgesic and calming effect
- Babies up to 18 months of age
- Mechanism of action not known but thought to be by the release of endogenous opioids
- Pharmacy prepared 24% sucrose
- Tootsweet – Natus Medical
- Nurse initiated at MCH & RCH



Key points

- Significant impact on public health
- Prevention is better than cure!
 - make first experience positive
- Implement WHO guidelines
- Measures used must be age appropriate
- Our responsibility as health care providers to minimise needle pain
- Multiple resources available and accessible



Thank you!

If you would like a list of resources and references
please contact me

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Resources

One Voice

- www.onevoice4kids.com

Guidelines

- http://www.who.int/immunization/policy/position_papers/reducing_pain_vaccination/en/
- <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3001531/>

Comfort Positioning

- https://www.rch.org.au/comfortkids/for_parents/#cposition
- https://www.childrensmercy.org/Patients_and_Families/Support_and_Services/Child_Life/Comfort_Positions/

Denise Harrison “Be Sweet to Babies”

- <https://www.thepainhubuottawa.com/deniseharrison>

Christine Chambers “It Doesn’t Have to Hurt”

- <https://www.youtube.com/watch?v=ge6RY7L2vVo>
- <https://www.youtube.com/watch?v=KgBwVSYqfps>

Stefan Freidrichsdorf “Children’s Comfort Promise”

- <https://www.childrensmn.org/services/care-specialties-departments/pain-program/childrens-comfort-promise/>
- <https://www.childrensmn.org/departments/pdf/reducing-needle-pain-no-needless-pain-poster.pdf>

