

“Reduced Discomfort” Vaccination: Pain Prevention Strategies



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“Vaccination is the Most Significant Medical Achievement”

Abstract

Background: Vaccine-preventable diseases are increasingly recognized to cause preventable morbidity, mortality, and costs. Despite the efficacy, utility, and ethical imperatives of recommended vaccination schedules, fear of injection pain and programming by past injection experience remains a powerful disincentive to offer and receive recommended vaccines.

Objective: Identify medical means to reduce or eliminate vaccination injection fear and/or discomfort in an effort to avoid vaccine-preventable causes of stillbirth and damaged babies at birth.

Methods: We performed Medline and PubMed English-language searches for controlled or uncontrolled evidence for prevention of vaccination injection pain. We hierarchically categorized recommendations according to U.S. Public Health Service (USPHS) criteria.

Results:

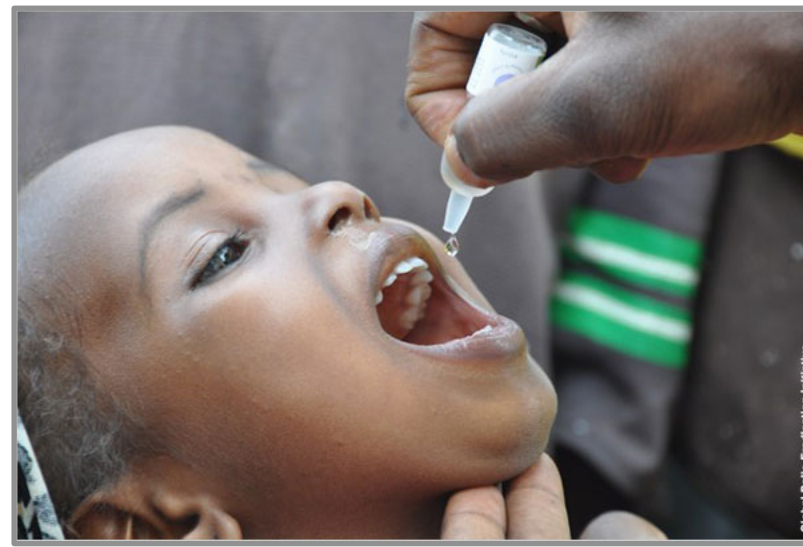
- 1) Our review of current relevant American Congress of Obstetricians and Gynecologists (ACOG) publications showed no mention of vaccine injection pain and no means to prevent injection pain.
- 2) The clinical problem of injection pain is most frequently indexed in Pediatric, Family Practice, and General Medical journals respectively.
- 3) Recommendations supported by USPHS class I or II evidence include:
 - a) medical providers can provide distractions at the time of injection;
 - b) use of cold or vibration at skin site contralateral to the proposed injection site;
 - c) use cold, vibration, local anesthetic, or counterirritation at proposed injection site;
 - d) inject the most painful shot last; and
 - e) do not invoke “man up” imprecations or false reassurances.

Conclusions:

- 1) Evidence from non-reproductive medicine literature demonstrates effective means to reduce vaccination injection pain.
- 2) The listed USPHS recommended suggestions can be utilized without cost or difficulty in clinical OB/GYN practice.



Jonas Salk, MD



Results

- 1) Pain experience of children vs. adults
- 2) “Imprinting” of sensitization
- 3) Consequences of poor pain/anxiety/stress management
- 4) Consequences of parental anxiety
- 5) Myths
- 6) Evidence-based intervention (similar to Taddio A. *Clinical Therapeutic* 2003 p31)

Comments

- Newly recognized RESEARCH imperatives include:
- 1) Neurologic mechanisms
 - 2) Research @ long-term consequences on clinical choices and policy-making
 - 3) Most cost-effective means to reduce pain and increase satisfaction

Background

- 1) Effective @ 60% to 90% + herd
- 2) Multiple shots
- 3) Childhood, adolescent, adult, maternal, paternal
- 4) Underutilized: patients, providers, policy makers (Leggett C. Canada Mothers. *CMA* 2014-16. Inadequate pain/fear control)
- 5) Emotion-driven myths



1918 Flu Pandemic
 500 million infected, 50 to 100 million killed
One of the world's deadliest disasters...
NOW PREVENTABLE!

Summary

- 1) We conducted “logic model” analysis of vaccination pain and means to reduce fear and pain
- 2) The importance of vaccination as a personal and public health practice is impaired by vaccinating pain. Reducing the experience of vaccination pain is now a recognized priority in BIOLOGICALLY-BASED medicine.



Media stars such as Jenny McCarthy and Jim Carrey have powerful opinions about vaccination.



Painless Vaccine Administration



Goals

- 1) Review epidemiology
- 2) Biology of immunization
- 3) Theobald Smith principles
- 4) Pain pathobiology
- 5) “Evidence-based” clinical strategies

Methods

- 1) Created logic model review database
- 2) Industrial review of needles
- 3) Review “needle phobia” (trypanophobia)
- 4) Child/adult sequelae of vaccination pain
- 5) New technologies: stamps, band-aids, patches
- 6) Nonpharmacologic management—IM and oral
- 7) Breathing: yoga
- 8) Gate-theory based



Ipsi- and Contralateral Stimulation

References

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