

Bolest u dětí

The Comfort Promise

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Konflikt zájmů

- Absolvent kurzu The Paediatric Pain Master Class 2024
- Nadace rodiny Vlčkových a Fakultní nemocnice Ostrava

15th Pediatric Pain Master Class

Saturday, December 7 – Friday, December 13, 2024

Mission Bay Conference Center at UCSF

San Francisco, California, United States



UCSF Department of Pediatrics
Division of Pain, Palliative and Integrative Medicine.
University of California in San Francisco School of Medicine

Course Chairs



Stefan J. Friedrichsdorf, MD
FAAP Elisa and Marc Stad Professor in Pediatric Pain Medicine, Palliative Care and Integrative Medicine Chief, Division of Pediatric Pain, Palliative and Integrative Medicine University of California at San Francisco Medical Director, Stad Center for Pediatric Pain, Palliative and Integrative Medicine UCSF Benioff Children's Hospitals

In the News!

Dr. Friedrichsdorf has been voted one of the most influential people in health in 2024 by Time Magazine [TIME100 HEALTH](#)



Karen Sun, MD
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Cíle přednášky

- Proč řešit - dopady neléčené bolesti na morbiditu a mortalitu dětí
- Jak řešit - The Comfort Promise – jednoduché procedury k prevenci bolesti



Proč?

- 2010 Declaration of Montreal: „... **adequate pain management is a fundamental human right**“
- Bolest u dětí: běžná, nerozpoznaná, neléčená
- Rodiče:
 - Druhá nejvyšší priorita po stanovení diagnózy je terapie bolesti
 - Nejvyšší míra stresu – neléčená bolest dítěte
- Dopady neléčené bolesti:
 - Dlouhodobá změna prahu a percepce bolesti
 - Snížení efektu analgesie v budoucnu (senzitivace CNS)
 - Zvýšení morbidit (chronické bolestivé stavy, autoimunity) a mortality

Proč

- CDC – 2019 – Procedurální bolest
- 2 děti ze 3 / 1 dospělý ze 4 – významný strach z jehel a návštěvy lékaře z obavy stran bolestivých intervencí (odběry)
- Novorozenci – až 450 bolestivých procedur za pobyt na NICU (cca 11/den);
- ↑riziko IVH, morbiditu (hypokoagulace, respirační distres, ↑ICP, hypoxie)
- Lepší neurologický stav ve 2 letech v porovnání s dětmi bez řádné analgésie
- Nezralí novorozenci – časné zaostávání růstu (tělesného + obvodu hlavy)

Jak?

- Příprava
- Topická anestezie (gel/krém)
- Sacharóza/kojení
- Pozice při odběru
- Rozptýlení při odběrech
- Pozitivní přerámování zážitku – odměna, slovní ocenění
- Plán B: N₂O, mírná/střední sedace





The Comfort Promise

We promise to do everything possible to prevent and treat needle pain. For every child. Every time.

No one wants to see their child in pain. That's why – whether your child needs a vaccine, a blood draw or an IV catheter placement – our experienced and compassionate staff partner with you and your child to use simple pain-reduction tools and techniques that work for your family.

Our Comfort Tool Kit

The tools we use – and how we use them – vary by developmental age and what's best for your child. You'll find more details about each one on our website.



Numbing cream
Makes needle procedures less painful



Comfort positions
Helps children feel calm and secure



Distractions
Puts the focus on an entertaining activity



Choices
Provides the patient with some sense of control



Breastfeeding or sugar water
Soothes and reduces babies' pain



Memory-shaping
Frames the experience in a positive way

To learn more, visit ucsfbenioffchildrens.org/comfort-promise



Please fill out and detach the coping card on the right and bring it with you to your appointments.

I also want you to know _____

Date _____

Date of birth _____

MY COPING PLAN

Name/Pronouns _____



Additional Tips

If you're looking for even more ways to help your child cope with the pain and anxiety of a needle procedure, consider these supportive practices:

- Help your child understand what to expect. Explain that the procedure is needed to help their body be healthy. Don't claim that it won't hurt. Instead, try saying, "You may feel a pinch or pressure, and you can use [child's preferred distraction] to make it easier."
- Give your child a job to do. For example, let them know that their job is to keep their arm still or to squeeze your hand.
- Have them try deep breathing. Encourage your child to take calming breaths before the procedure, and use big exhales to "blow away the pain" while it's happening.



11.2023-WF-180826

When Your Child Needs Extra Support

If the comfort tools and techniques we offer don't make needle pain manageable for your child, talk with us about other options.

These may include:

- Therapeutic play
- Relaxation techniques
- Additional preparation and coping support from our child life specialists
- Behavioral health treatment
- Calming medication



The Comfort Promise is brought to you by the Stad Center for Pediatric Pain, Palliative and Integrative Medicine.

My Choices

☐ No information

☐ Limited information

☐ Tell me everything

☐ Step-by-step explanations

My Coping Preferences

☐ Left arm ☐ Right arm

☐ Numbing cream

☐ Heat

☐ My own comfort item

☐ Count down

☐ I want to watch

☐ Thumbs up = ready

☐ Thumbs down = need a break

☐ Imagery/breathing exercises

☐ Comfort hold (list preference)

My Distraction Preferences

☐ Stress ball/fidgets

☐ Distraction cards

☐ Light spinner

☐ Distraction app

For Infants

☐ Swaddle

☐ Sucrose (sugar water)

☐ Breastfeeding

☐ Skin to skin

☐ Bubbles

☐ My own electronic device

☐ Conversation

☐ Other: _____

☐ Therapeutic touch

☐ Comfort hold (list preference)

Made accessible 3/24

The Comfort Promise



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Comfort Tool Kit

**Plan the
“Before”,
“During”,
“After”**

 **UCSF** Benioff Children's Hospitals
COMFORT PROMISE

We will do everything possible to prevent and treat pain. For every child. Every time.

Topická anestezie

- EMLA
- 4% Lidokain
- 4% Tetrakain



WHO guidelines (2015) state that the lack of analgesic provision for vaccination pain is inexcusable.

WHO. Reducing pain at the time of vaccination: WHO position paper, September 2015—Recommendations. Vaccine. 2016 Jul;34(32):3629–30.; Carbajal R. Epidemiology and Treatment of Painful Procedures in Neonates in Intensive Care Units. JAMA. 2008 Jul 2;300(1):60.; McLenon J, Rogers MAM. The fear of needles: A systematic review and meta-analysis. J Adv Nurs. 2019;75(1):30–42.

Kojení / sacharóza



- 0 – 12 měsíců
- Redukce bolesti při odběrech
- Uvolnění endogenních opioidů (blokace naloxonem)
- Aplikovat 2 minuty před intervencí
- Trvání efektu cca 2 – 4 minuty

Magistraliter:

Sacharosi 25,0

Aqua pro inj. ad 100,0

Pozice při odběrech



Comfort positions

Helps children feel calm and secure

Babies (0-12 months)

- Held by parent

Toddlers and preschoolers (1-5 years)

School age (6-12 years)

- Held by parents or close by, upright is best

Teens (13-18 years)

- Parents available
- Sitting upright is best
- Distraction: interactive toys, books or electronics
- Teen may choose to watch or lay down

Rozptýlení



- Dle přání dítěte
 - Malé děti – bublifuk, aplikace, foukání na větrník, knížky
 - Větší děti – online hry, hračky, VR
 - Adolescent – hudba, kniha, mobil
-
- Jemné tření /hlazení v blízkosti místa vpichu (rodič) + využití hypnotické mluvy
 - Odvedení rozhovoru od odběrů
 - Nasazení rukavic mimo zorné pole dítěte
 - Příprava - co bude ihned po odběru (odměna, tlak na místo, napití se,)



Dát předem možnosti



- Viz příprava – vybírá dítě s rodičem
- Pocit zachování svobody a kontroly

Přerámování zážitku - mluva



„Slova jsou, podle mého ne tak skromného názoru, naším největším nevyčerpatelným zdrojem magie. Schopná způsobovat zranění i léčit.“



Mluva před



- Co slyšíme formuje naše zážitky a paměť – fixace zážitku s bolestí
- Vyhýbat se slovům „bolestivým“ - jehla, vpich, bolest, zabolí,
- Náhradní slova – trubička/brčko, špípnutí, tlak
- Možnost kontroly – výběr kroků ke snížení bolesti

Mluva během....

- „Neboj se“ / „Brzo už to bude“ – děti (5-10 let) vnímají jako stresovou větu!
- Rozhovor netýkající se procedury (např. mluvit o dýchání, odměně)
- Cca 10 % dětí – chtějí vše vidět a přesně vědět, co děláte



„...If a Adult Tells You Not to Worry, and You Weren't Worried Before, You Better Hurry Up and Start 'Cause You're Already Running Late.“

Christopher Curtis: Bud, But Not Buddy

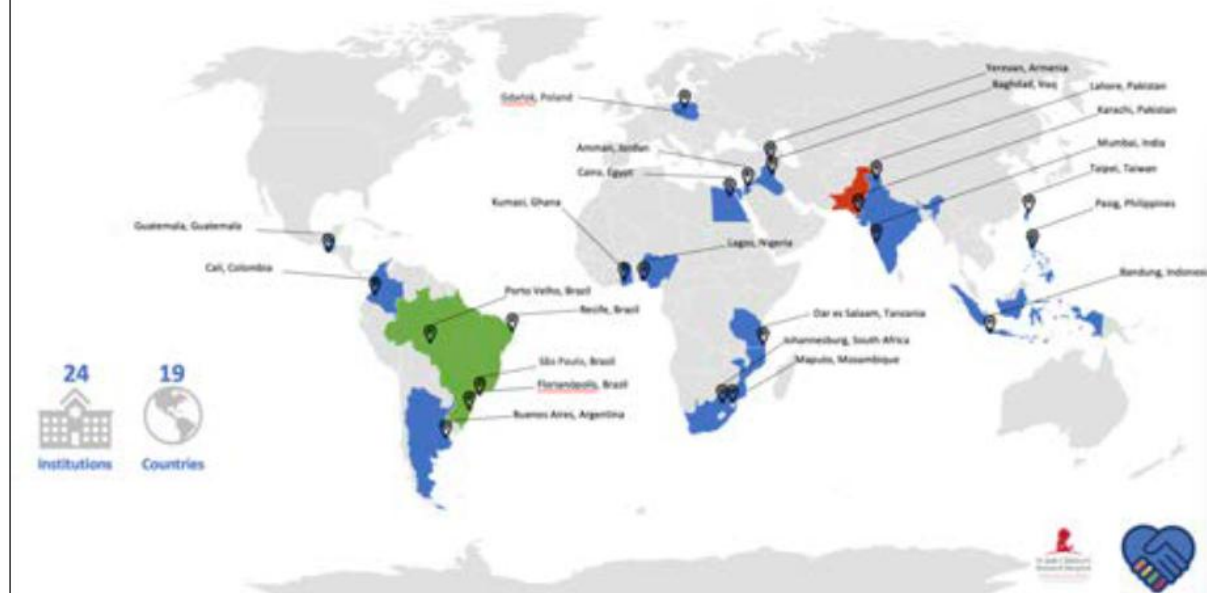
Mluva po...



- Ihned po výkonu!
- Ocenění statečnosti
- Odměna – nálepka, diplom, obrázek
- „Vidíš, jak jsi cítil jenom tlak? Vedl jsi si skvěle!“ (fixace zážitku pozitivně)
- „Jsem na Tebe pyšná, jak jsi to zvládla!“
- Výrazně nižší riziko strachu a odmítání procedury do budoucna

Je to opravdu realizovatelné?

Global Comfort Promise Participating Sites



CONCLUSIONS



IASP
INTERNATIONAL ASSOCIATION
FOR THE STUDY OF PAIN

2019 Global Year Against Pain in the Most Vulnerable Populations

“Failure to implement evidence-based pain prevention and treatment for children in medical facilities is now considered inadmissible and poor standard of care”

Friedrichsdorf SJ, Goubert L. Pediatric pain treatment and prevention for hospitalized children. *Pain Rep.* 2020;5(1):e804.

Descriptive analysis

Global Comfort Promise package interventions used (n= 5962)



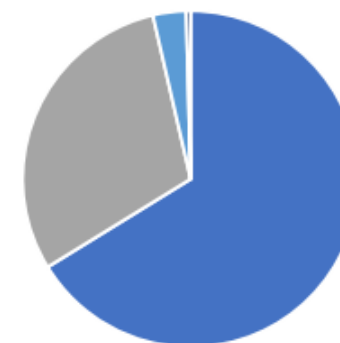
99%

successful procedures

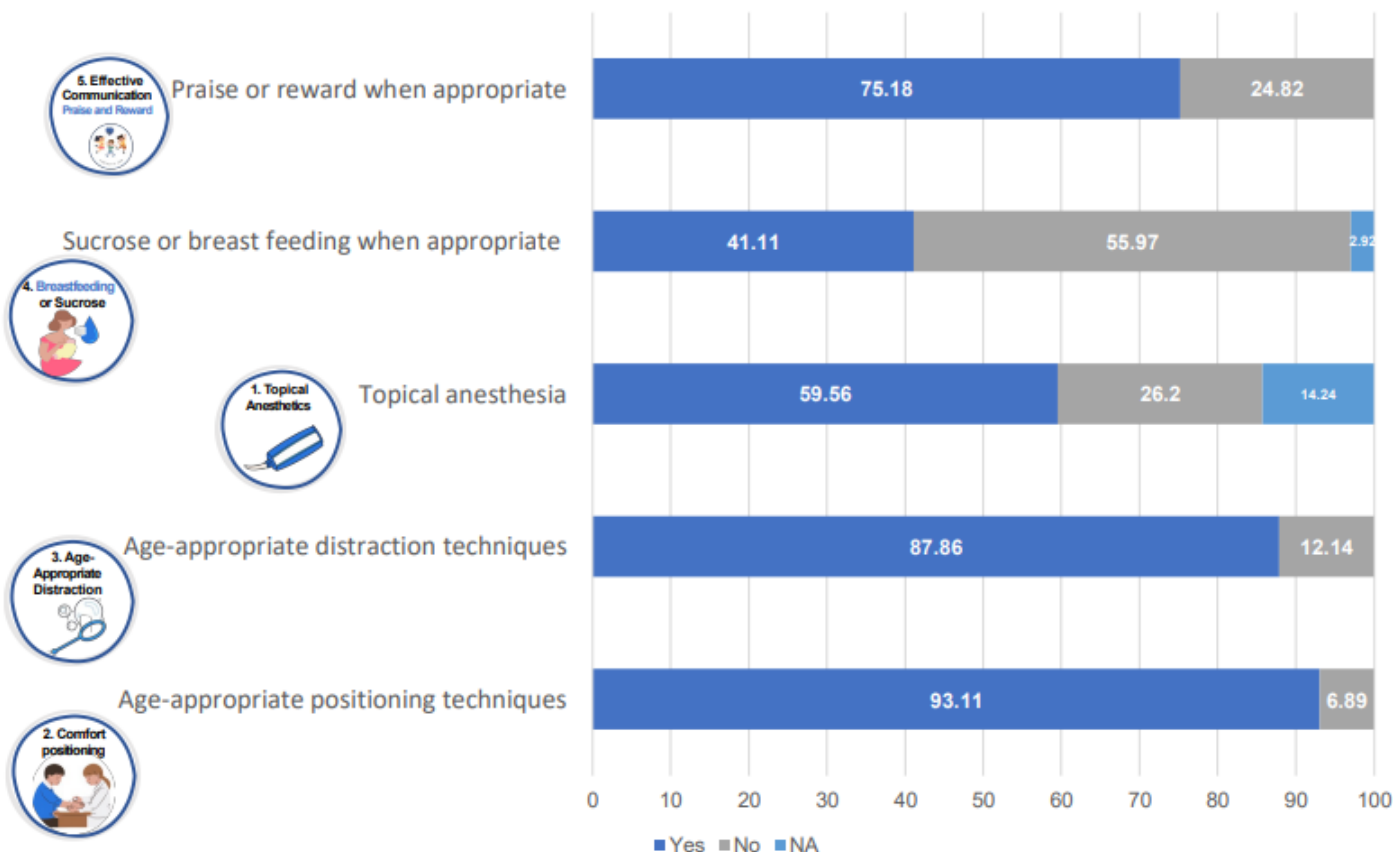
5,928

Pain-free procedures
Transforming tears into smiles

Procedure satisfaction



■ Very Satisfied ■ Satisfied ■ Somewhat Satisfied ■ Not Satisfied



Plán B

- N₂O
 - IV sedace (ketamin, propofol)
 - IN dexmedetomidin, fentanyl
-
- Nepoužívat samostatně intranasální midazolam (neovlivňuje bolest!)

Principle and Secondary Medication Effects

Medication	Sedation	Analgesia	Amnesia
Barbiturates	+++	-	-
Benzodiazepines	+++	-	+++
Opioids*	++	+++	-
Ketamine	+++	+++	++
Propofol	+++	-	+
Chloral hydrate	++	-	-
Nitrous Oxide	+	++	+

*Different opioids produce different levels of sedation

American Heart Association. PALS Provider Manual: Chapter 14-Sedation Issues for the PALS Provider, 2002.

Intranasal Fentanyl

Drug			Onset	Duration	Max single dose	Max Dose (total)	
Fentanyl	Use in greater than 10 kg patients	1.5 mcg/kg	7 min	~1 hr	1 mL/nostril	2 mcg/kg	Use parenteral preparation (50 mcg/ml)

- 74% bioavailability, highly lipophilic
- Well tolerated
- Direct systemic absorption
- Effective pain reduction and anxiolysis

Adverse effects:

- Nasal irritation, unpleasant taste, salivation, nausea/vomiting, change in vision



Mucosal Atomization Device (MAD)

Other agents



• **Dexmedetomidine IN: 3 mcg/kg/dose**

- sedative-anxiolytic and mild analgesic agent
- alpha2-agonist (similar to clonidine)
- IN dexmedetomidine for sedated MRI – safe and effective. No major nor minor adverse events were reported, including neonates
- Sulton, Carmen MD¹; Kamat, Pradip MD, MBA²; Mallory, Michael MD, MPH³; Reynolds, Jason MD⁴. The Use of Intranasal Dexmedetomidine and Midazolam for Sedated Magnetic Resonance Imaging in Children: A Report From the Pediatric Sedation Research Consortium. Pediatric Emergency Care 36(3):p 138-142, March 2020.

• **Propofol:** sedative, no analgesia

• **Ketofol**

- Combination ketamine and propofol

• **Remifentanyl**

- ultra-short-acting opioid, given as an infusion in combo w/midazolam

• **Remimazolam**

- Ultra-short-acting IV benzodiazepine/remifentanyl combination

Závěr

- Nepodceňujme krátkou procedurální bolest (dlouhodobé následky)
- Pokud máme dost personálu na restrikci pohybu bránícího se dítěte, máme dost personálu na kroky Comfort promise 😊
- Balíček Comfort Promise (kompletní/parciální) -jednoduché, aplikovatelné a bez zvýšení nákladů

Závěr

5 Steps to Avoid Pain & Anxiety Caused by Needles

All Ages



We will do everything possible
to prevent and treat pain.
For every child. Every time.

CHOICES = Preparation for parents / kids, Anxiety reduction: what to do before, during, after; offering options) **Child Life Specialist available?**

1. **Topical Anesthesia** (4% Lidocaine Cream, LET-cream)
2. **Comfort Position** (NEVER restrain a patient)
3. **Age-appropriate distraction**
4. **Allow Patient/Parent Control** (e.g. STOP sign, BREAK sign)

Infants 0-12 months

5. Sucrose or breastfeeding

If above inadequate

- **Sedation**
 - Fentanyl, midazolam, ketamine, propofol, IN dexmedetomidine
 - CONTRAINDICATED: Intranasal midazolam, meperidine/pethidine
- **Nitrous Gas !!!**

Toddlers, Children & Teens

5. Praise & Memory-making

