Chronic Pain in Children

Common. Complex. Under-treated.

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Welcome from Oakland & San Francisco

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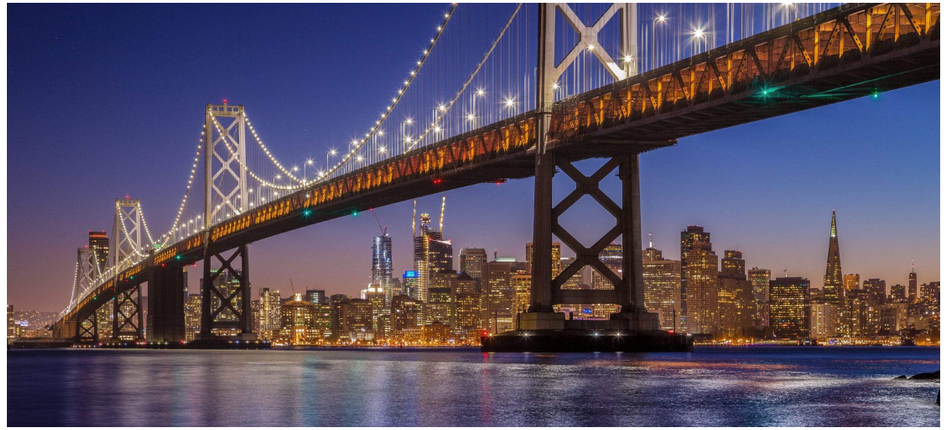

The Stad Center
for Pediatric Pain, Palliative & Integrative Medicine

Providing pain relief and comfort to kids

Chronic Pain versus Disability

- Chronic pain is a significant problem in the pediatric population, conservatively estimated to affect 20% of children and adolescents around the world Chambers CT, Dol J, Tutelman PR, Langley CL, Parker JA, Cormier BT, et al. The prevalence of chronic pain in children and adolescents: a systematic review update and meta-analysis. Pain. 2024;165(10):2215-34.
  - **USA: 14.8 million children 0-17yrs**

- While majority of children reporting chronic pain are not greatly disabled by them, approximately **3-5% of these children experience significant pain-related disability and are in need of intensive pain rehabilitation** Huguet A, Miro J. The severity of chronic pediatric pain: an epidemiological study. J Pain. 2008;9(3):226-36. LINK Hechler T, Dobe M, Zernikow B. Commentary: A worldwide call for multimodal inpatient treatment for children and adolescents suffering from chronic pain and pain-related disability. Journal of pediatric psychology. 2010 Mar;35(2):138-40.
  - **USA: 444,000 -740,000 children 0-17yrs**

- 12-20% of pediatric inpatients show features of chronic pain Friedrichsdorf SJ, Postier AC, Eull D, Foster L, Weidner C, Campbell F: Pain outcomes in a US children's hospital: a prospective cross-sectional survey. Hospital Pediatrics 2015. 5(1):18-26; Postier AC, Eull D, Schulz C, et al. Pain Experience in a US Children's Hospital: A Point Prevalence Survey Undertaken After the Implementation of a System-Wide Protocol to Eliminate or Decrease Pain Caused by Needles. Hospital pediatrics. 2018;8(9):515-523

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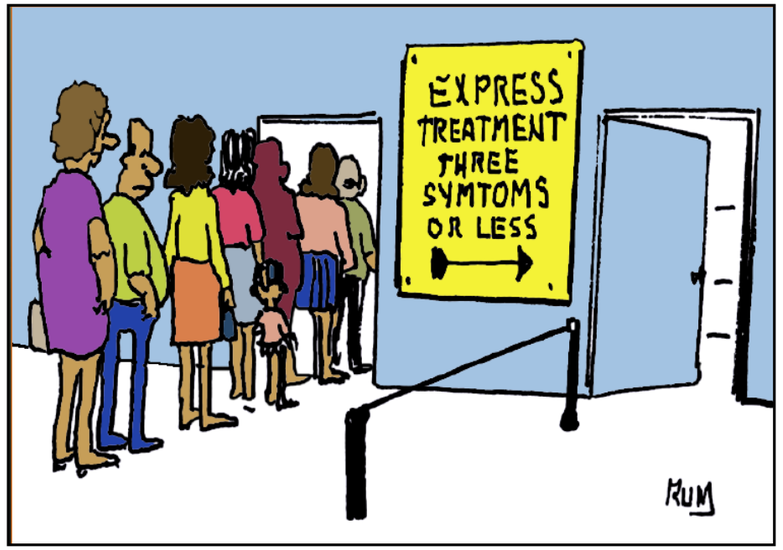
Chronic Pain in Kids = "Primary Pain Disorders"

- **Primary Headaches**
  - *Chronic Migraines*
  - *Chronic Tension Type Headaches*

- **Chronic Abdominal Pain**
  - *Centrally mediated abdominal pain syndrome (CAPS)*
  - *Functional abdominal pain syndrome (FAPS)*
  - *Irritable Bowel Syndrome (IBS) - <u>not</u> to confuse with Inflammatory Bowel Syndrome (IBS)*



- **Widespread (chronic) musculoskeletal pain**
  - *"Fibromyalgia"*
  - *"Amplified musculoskeletal pain syndrome (AMPS)"*
  - *"Non-cardiac-chest pain"*
  - Complex Regional Pain Syndrome (CRPS) …?

- Majority of pediatric chronic pain clinic patients experience pain at multiple sites

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Surgery Usually NOT Recommended

- 25% of adults referred to chronic pain clinics underwent surgery antecedent - pediatric data unclear. Crombie, I.K., H.T. Davies, and W.A. Macrae, Cut and thrust: antecedent surgery and trauma among patients attending a chronic pain clinic. Pain, 1998. 76(1-2): p. 167-71.
- **Adolescents who underwent surgery for lumbar disk herniation (LDH) = increased disk degeneration and worse health outcomes** at average of 13.8 years of follow-up compared with controls Lagerback T, Kastrati G, Moller H, Jensen K, Skorpil M, Gerdhem P. MRI characteristics at a mean of thirteen years after lumbar disc herniation surgery in adolescents: a case-control study. JB JS Open Access 2021;6:e21.00081
  - caused by the previous herniation, natural progression, or the surgery itself?
- **Over a decade after surgery for LDH during adolescence, health among cases is worse compared with controls.** Ruehr L, Blomé S, Kastrati G, Lagerbäck T, Jonsjö M, Möller H, Skorpil M, Lasselin J, Lalouni M, Gerdhem P, Jensen K. Back morphology and walking patterns mean 13.8 years after surgery for lumbar disk herniation in adolescents. Pain Rep. 2024 Mar 14;9(2):e1148.
  - The head and trunk angles differ between cases and controls, indicating that the residual pain lingers and may cause changes in movement patterns long after a painful episode in early life.
- Pediatric spinal fusion: 35% moderate-severe pain presurgery Sieberg, C.B., et al., Pain prevalence and trajectories following pediatric spinal fusion surgery. J Pain, 2013. 14(12): p. 1694-702.
  - 1 year post-op: 11%
  - 2 year: 15%
  - 5 year: 15%

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fac·ti·tious

/fakˈtiSHəs/

adjective

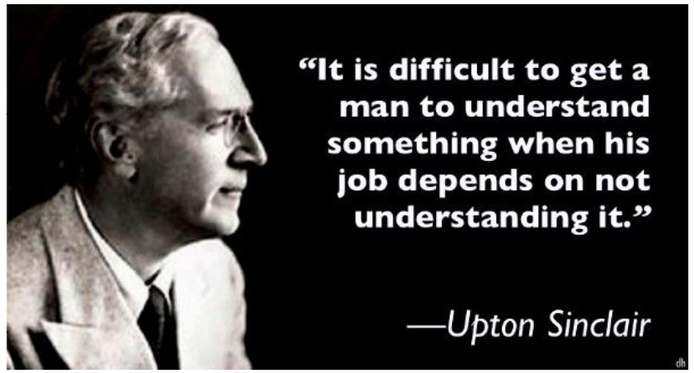
artificially created or developed.

Münchhausen by Doctor?

(99% of these diagnoses in kids with chronic pain incorrect and/or made up?)

As we hear hoofs... are these ponies, zebras, unicorns, or satyrs?

- "**POTS**" (Postural Orthostatic Tachycardia Syndrome)
- "**Dysautonomia**"
- "**ACNES**" Anterior cutaneous nerve entrapment syndrome
- "**Chronic Lyme Disease**"
- "**Mast Cell Degranulation**"
- **PANDAS** (Pediatric Autoimmune Neuropsychiatric Disorders Associated with Streptococcal Infections)
- Chiropractor dx:
  - "**Misalignment**"
  - yeast in stool
  - clots behind the eyes
  - heavy metal toxicity



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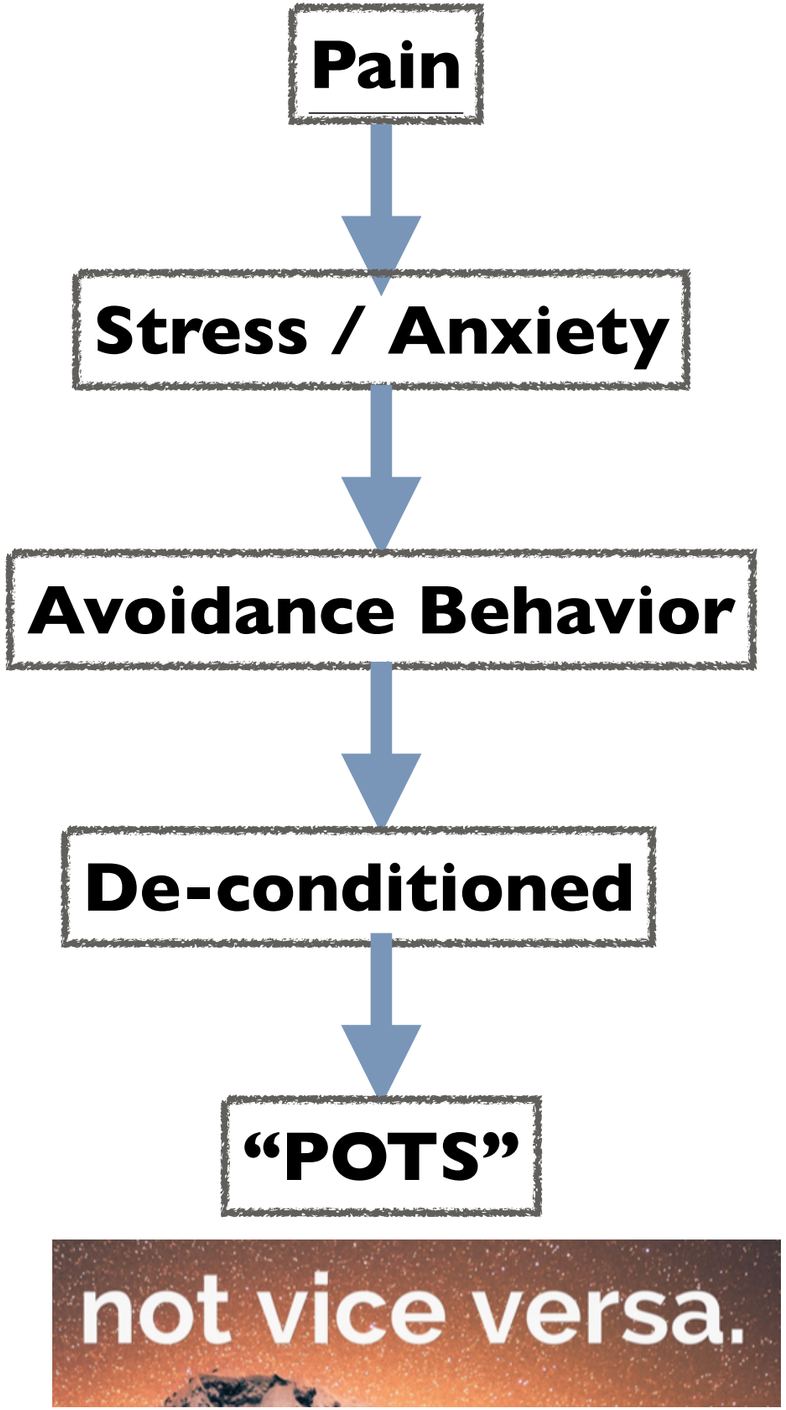

“Dysautonomia”, “POTS” etc.

- “POTS” (Postural Orthostatic Tachycardia Syndrome)

- **How an individual perceived the stimulus seemed to be more important for predicting the body’s autonomic nervous system’s response than the pain stimulus itself** Mischkowski D, Palacios-Barrios EE, Banker L, Dildine TC, Atlas LY. Pain or nociception? Subjective experience mediates the effects of acute noxious heat on autonomic responses. Pain. 2018;159(4):699-711.

What Happens at a Pediatric Pain Clinic?

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Pain Clinic Exit Interview

- **Pain is real!**
- Avoid diagnostic uncertainty: linked to higher youth catastrophic thinking about their pain Neville A, Jordan A, Pincus T, Nania C, Schulte F, Yeates KO, et al. Diagnostic uncertainty in pediatric chronic pain: nature, prevalence, and consequences. Pain Rep. 2020;5(6):e871.
- Expectation = Self-fulfilling prophecy
- **Expectations predict chronic pain treatment outcomes: superior clinical outcomes observed in individuals who expect high positive outcomes as result of treatment.** Cormier, S., et al., Expectations predict chronic pain treatment outcomes. Pain, 2016. 157(2): p. 329-38.

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Rehabilitative Pediatric Pain Clinic Approach

- **Physical Therapy**
  - Daily home exercise
- **Integrative Medicine**
  - Self-Hypnosis
  - Biofeedback
  - Progressive Muscle relaxation
  - Daily home exercise
    - Passive: Massage, Acupuncture
- **Psychotherapy** (…especially if missing school)
- **Normalize Life**
  - **S**ports/Exercise
  - **S**leep-hygiene
  - **S**ocial: Having daily fun
  - **S**chool: Attending full-time (or school-re-entry plan)
- **Family Coaching**
- **<u>Very</u> low importance of pharmacology**
  - Opioids contraindicated

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Pediatric Outpatient Pain Clinics

- **Are awesome!**
- **Evidence-Based**
- **Extremely effective**
  - Majority of kids become pretty much pain free
  - Nearly all return to normal function
- **Very cost-effective**
- **A few patients need additional intensive rehabilitative day-treatment / inpatient program** (about 5 in US)

- Friedrichsdorf SJ, Giordano J, Desai Dakoji K, Warmuth A, Daughtry C, Schulz CA. Chronic Pain in Children and Adolescents: Diagnosis and Treatment of Primary Pain Disorders in Head, Abdomen, Muscles and Joints. Children (Basel). 2016;3(4). https://pubmed.ncbi.nlm.nih.gov/27973405
- Mahrer NE, Gold JI, Luu M, Herman PM. A Cost-Analysis of an Interdisciplinary Pediatric Chronic Pain Clinic. J Pain. 2018;19(2):158-165.
- Evans JR, Benore E, Banez GA. The Cost-Effectiveness of Intensive Interdisciplinary Pediatric Chronic Pain Rehabilitation. J Pediatr Psychol 2016;41(8):849-856.
- Simons LE, Sieberg CB, Conroy C, et al. Children With Chronic Pain: Response Trajectories After Intensive Pain Rehabilitation Treatment. J Pain. 2018;19(2):207-218.

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Pain Treatment

"Fluffy, do children & adolescents in pain have access to a pain clinic with psychology, physical therapy and integrative therapies in USA…? Do health insurers cover costs for those evidence-based treatments…?"

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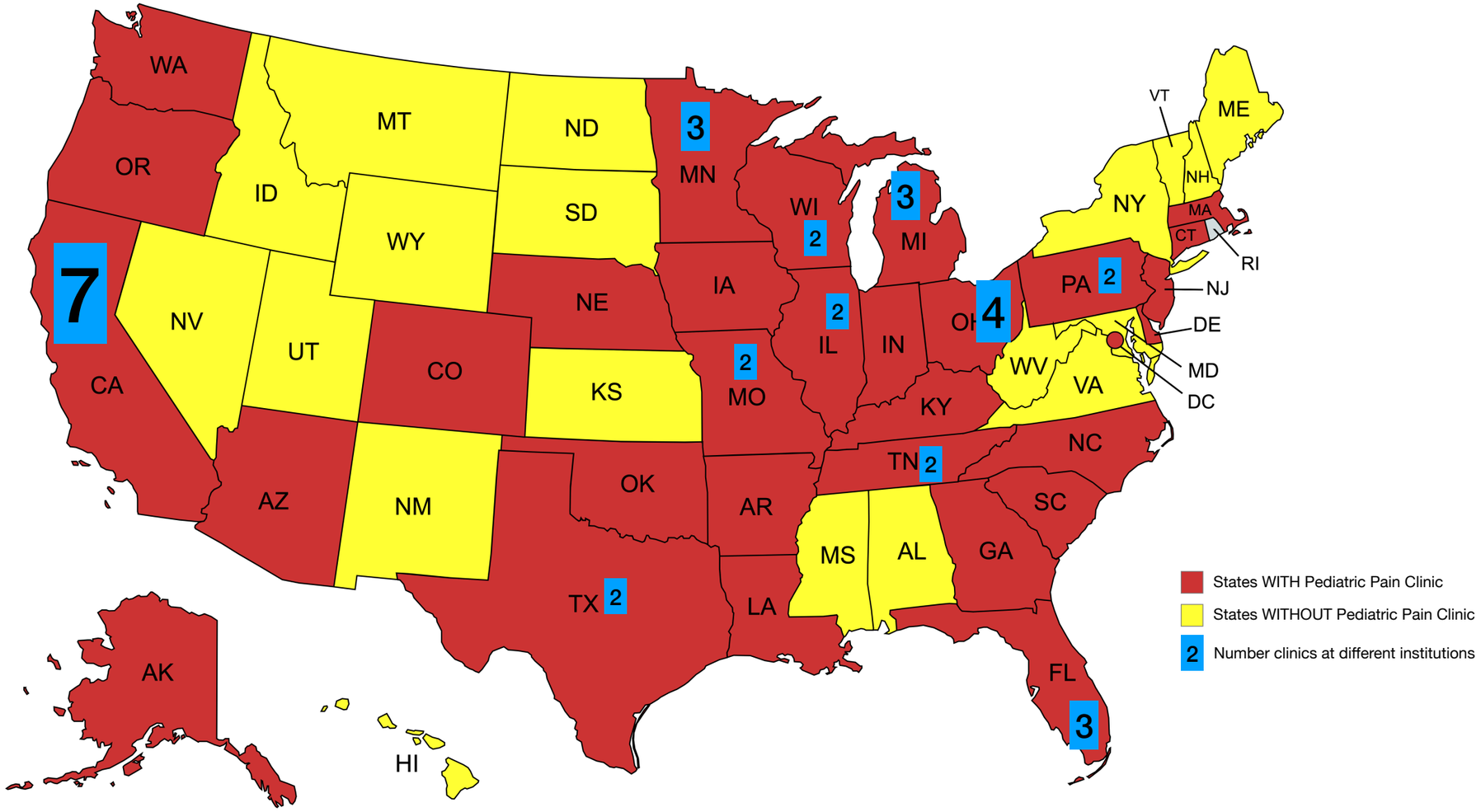
Pediatric Pain Clinics 2025

- **60 self-declared Pediatric Pain Clinics**
- **in only 32 States & D.C.**
  - Only 11 = clinic in more than 1 institution
  - TX: 2 clinics in 2nd largest state
- **19 States WITHOUT any pediatric pain clinics**
  - including NY: 4th largest state, biggest city in US



Based on data from Palermo T: International Directory of Pediatric Chronic Pain Programs http://childpain.org/index.php/resources/

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Pediatric Patients: Status-Quo 2025

- Most pediatric patients do **NOT** have **access to** effective safe alternatives to opioids that are **covered by insurance (!)**
- **Lack of**
  - **Designated Inpatient Pain Teams 24/7**
  - **Interdisciplinary Pain Clinics**
    - Physical Therapy
    - Psychology
    - Integrative (non-medicine strategies)
  - **Mental health services**
  - **Substance Misuse (“Addiction”) treatment programs**

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Conclusion

- Chronic pain usually not derived from peripheral nociceptive input (i.e. damage or inflammation)
- Many different chronic and recurrent pain syndromes now considered manifestations of underlying vulnerability rather than separate disorders
- Importance of rehabilitative, interdisciplinary team approach
- Opioids in absence of tissue injury or inflammation not indicated
- Patient expectation predict pain treatment outcomes
- **<u>GOOD NEWS</u>: Disability in children caused by Chronic Pain is extremely well treatable by pediatric pain programs**
- **<u>BAD NEWS</u>: Lack of pediatric pain clinics** (loosing money due to poor reimbursement by health insurers incl. "pre-authorization" a.k.a. denial of services)

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Questions/Comments?

Thank you!