

Enhancing Pediatric Care: PARO Therapeutic Robot

- FDA Class II Biofeedback Medical Device since 2009
- Alternative for Live Animals in Therapy, Activities, and Support

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**PARO Improved Moods, Anxiety, Pain, etc.
Boy after 100+ of Surgeries of Brain Tumor
Pediatric Intensive Care Unit (PICU)
Benioff Children's Hospital
Univ. of California San Francisco (2019)**

What Is PARO?

1. Introduction

- Advanced interactive therapeutic robot designed to look like a baby harp seal.
- Developed by Dr. Takanori Shibata. Hand-made production in Japan for Quality.
- FDA cleared Class II Medical Device in the US since 2009.
- Global Presence (8,000 PAROs in more than 30 countries)
- Evidence by Clinical Trials (including RCTs and their Meta-Analysis)

2. Key Features

- Psycho-physiological Biofeedback Therapy
- Responds to touch, light, sound, temperature, and posture.
- Simulates emotions and behaviors.
- Battery-operated with 5-8 hours of use per charge.
- Available in white, gold, pink and grey fur.

3. Safety, Cleaning and Disinfection

- No cameras nor data transmission—ensures privacy.
- Autonomous Embodied-AI device—no subscription needed.
- Fur consists of silver-ion (Ag+) to kill bacteria and virus gradually.
- Wipe-down cleanable using disinfectant wipes for 2 min.
- Accelerated Hydrogen Peroxide (AHP) wipes, UV light, and high concentration alcohol can be used.



PARO for Ukrainian Refugees with PTSD, Stress, Anxiety, etc. Pediatric Neuropsychiatry Center in Poland since June 2022



Benefits of PARO

User engagement and interaction with PARO Artificial Intelligence generated behaviors can stimulate the same types of neurological responses that produce positive physiological and psycho-social outcomes that are common in live Animal Assisted Activities (AAA) and Therapies (AAT) without the risks of live animals.



1. Emotional and Psychological Support

- Reduces anxiety, stress, and loneliness.
- Provides comfort and companionship.

2. Therapeutic Benefits

- Improve moods, pain, anxiety, depression and agitation.
- Non-pharmacological therapy to reduce dosage of medications.
- Promotes positive behavior and emotional responses.

3. Developmental Advantages

- Improves fine motor skills and speech.
- Stimulates cognitive functions.
- Encourages social interaction.

4. Healthcare Support

- Assists healthcare staff in calming patients.



S. Okita, CYBERPSYCHOLOGY, BEHAVIOR, AND SOCIAL NETWORKING, Vol. 16, Number 6, 2013

**PARO Reduced Anxiety and Pain of Inpatient Children
Lucile Packard Children’s Hospital, Stanford University**



**PARO Improved PTSD, Stress, Anxiety, etc. of Ukrainian Refugees
Pediatric Neuropsychiatry Center in Poland since June 2022**



**PARO for Cancer Child during Chemotherapy
Hospital Pereira Rossell, Uruguay**



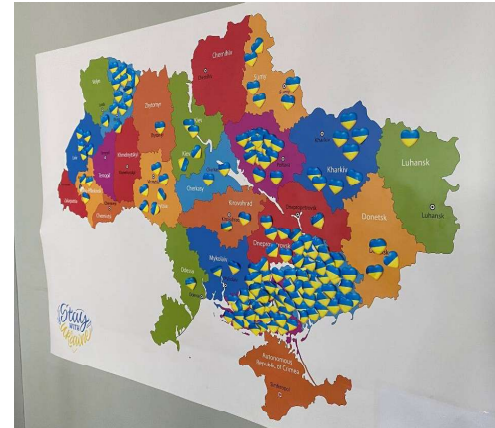
**PARO for Children with Cerebral Palsy
Asociación Nacional para el Niño Lisiado
Escuela Roosevelt, Uruguay**





Mental Health and Psychosocial Support (MPHSS) during Emergencies and beyond

PARO has been incorporated in the MPHSS Programs of the UNICEF and the UN IOM for Ukrainian Refugees in Poland since July 2023



PARO Case Studies and Practical Uses



- PARO in Pediatric Intensive Care Unit (P-ICU)
 - Example: [Univ. of Nebraska Medical Center since 2018](#) [youtube.com]
 - Example: [Univ. of California San Francisco since 2019](#) [youtube.com]
 - Outcomes: Reduced anxiety and improved moods among children.
 - No problems in infection control (Swab and ATP tests & practical uses)
- PARO in Mental Health Settings
 - Example: CAMH (Canada) Centre for Addiction and Mental Health.
 - Outcomes: Enhanced patient engagement and emotional well-being.
- Global Applications
 - Usage in various countries (e.g., Australia, UK, EU, HK, Singapore).
 - Broad range of applications from children to elderly care.
 - Analog Space Missions: Improve Stress, Isolation and Socialization
- Supporting Videos [youtube.com]
 - [PARO's Impact on Ukrainian Kids at Mazovian Center of Neuropsychiatry in Poland](#)
 - [PARO Eases Anxiety and Boosts Social Skills in Ukrainian Kids at Mazovian Center of Neuropsychiatry in Poland](#)
 - [PARO Brings Joy to Cancer Kids Before Treatment at Hospital Pereira Rossell in Uruguay](#)
 - [PARO Provides Comfort During Kid's Chemotherapy at Hospital Pereira Rossell in Uruguay](#)
 - [The Impact of PARO Robot on Health and Well-being](#)



**PARO at the Pediatric Intensive Care Unit (P-ICU)
Univ. of Nebraska Medical Center (2019)**



**PARO for Analog Astronauts
HI-SEAS, Hawaii, USA
(May 2023 - current)**



UNMC Researchers Studying Secrets Behind Cute, Cuddly Therapy Seal

PARO has been incorporated into the UNMC-Nebraska Medicine and Children's Nebraska.

<https://www.unmc.edu/newsroom/2024/02/21/unmc-researchers-studying-secrets-behind-cute-cuddly-therapy-seal/>

- **WRITTEN BY** Kalani Simpson, UNMC strategic communications
- **PHOTOGRAPHY BY** Kent Sievers and Chris Christen
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Dr. Hetland is conducting a randomized controlled trial (RCT) to investigate the effectiveness of PARO in pediatric care, co-investigating with Dr. Coulter and Dr. Roberts. PARO helps young patients with motor skills, speech, and emotional well-being, offering a unique alternative to traditional pet therapy. Early studies show promising results, with children engaging actively and positively with PARO. This innovative research aims to expand to adult patients, exploring PARO's potential to reduce stress and promote recovery across all ages.

Click [here](#) and [here](#) for more videos on Dr. Hetland's research into the therapeutic use of robotic baby harp seals, PARO.



Dr. Hetland and her daughters, Layla, 5, and Tully, 19 months, enjoy PARO, the robotic therapy seal in their home.

The Influence of a Socially Assistive Robot on Mood, Anxiety, and Arousal in Children

Molly K. Crossman, Alan E. Kazdin, and Elizabeth R. Kitt
Yale University, Professional Psychology: Research and Practice, 49(1), 48–56

A Randomized Controlled Trial (RCT) conducted by Prof. Alan Kazdin discusses the impact of the PARO therapeutic robot on children. The robot's realistic behaviors, such as moving, making sounds, and responding to touch, help reduce anxiety and stress in young patients.

Potential Benefits from this RCT include:

1. **Research Findings:** Studies indicate that children interacting with PARO exhibit reduced anxiety levels and increased positive mood.
2. **Therapeutic Benefits:** PARO has been shown to improve emotional well-being, decrease feelings of loneliness, and enhance social interactions among pediatric patients.
3. **Applications in Healthcare:** The robot is particularly beneficial for children undergoing long-term treatments, as it provides consistent emotional support and distraction from medical procedures.