

Reduction Task Trainer

Inventors: Brian Harvey, Nicole Fillingame, Robert Schremmer, Aiden McLuckie

The Innovation: The Reduction Task Trainer is a hand model to assist with completing competencies for healthcare workers to perform sideline reductions of certain joints in the body.

Background: A dislocation occurs when one of the bones in a person's joints is pushed out of its usual place. Dislocations often occur during traumas or sports injuries and many times require medical professional assistance to ensure they are put back in place properly. Medical professionals need to be trained on the proper techniques on how to treat or correct a joint dislocation situation. However, human subjects are not available for training purposes. Therefore, a simulation device that provides life-like tension forces, sounds, and pressures for training sports medicine and other medical professionals is needed and would be an invaluable tool.

A limited number of simulators are available in the market today which focus on finger dislocation, and those that are being used do not provide realistic conditions of joint reduction. However, researchers and clinicians at Children's Mercy have developed a novel partial task trainer to provide a realistic representation of what a practitioner would experience when treating a joint dislocation situation. Creating a realistic skin, bone, and joint tension in a simulation model is critical in creating a valuable training device.

Applications:

- **Medical Education:** Use as part of hands-on training curriculum and skill refreshers for healthcare workers and trainees who perform or will perform reductions as part of their role.
- **Research and Development:** Use as part of clinical research studies on joint injuries and treatment efficacy.

Advantages:

- **Enhanced Learning Outcomes:** provides a life-like, hands-on simulation for learning complex reduction techniques through practice and return demonstration without harming real patients.
- **Standardization of Training –** Provides consistent training experiences across skill levels with the opportunity to incorporate technology for real life performance and feedback.
- **Material:** constructed with a flexible material that simulate/mimic human skin.
- **Features:** Durable device that can be reliably reproduced and has been validated with users.

IP Status: Pending