The Effectiveness of a structured exercise program for reducing impairments in pediatric burn patients

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Impairments from a burn injury
• Significant loss of muscle mass
• Skeletal muscle catabolism
• Prolonged physical inactivity
• Burn Scar Contractures/ Rigidity of scars
• Decreased ROM

Benefits of Exercise in Burn Patients
• Less surgical interventions
• Tolerate standing or walking
• Return to ADLs
• Increased emotional and physical independence
• Increased self confidence

Exercises for Burn Patients
• Aerobic
  • 20-90 minutes, 3 days/week
  • Cycle ergometer, treadmill, bicycle, rowing machine, elliptical machine, swimming, organized sports, walking/jogging.

• Resistance Training
  • 3 days/week
  • Week 1: 50-60% of 3RM
  • Weeks 2-6: 70-75% of 3RM
  • Weeks 7-12: 80-85% of 3RM

Pediatric Exercise Environment
• Low incidence of injury
• Little Equipment required
• Done individually or with a group
• Ability to prescribe moderate frequency and intensity
• Pt demonstrates 95% wound closure,
• Pt is ambulatory, or adjusted equipment for pts who are not ambulatory.

Evidence
• Exercise has shown an increase in muscle strength and ability to do work resulting in an improvement in the burned child’s capability to return to normal activities of daily living.
  • A supervised, structured exercise program has proved to have greater benefits than a home exercise program alone. The exercise program has benefits lasting 3 months after cessation.
  • Exercise therapy should be a fundamental component of a multidisciplinary treatment program for burn victims due to the increased benefits.
  • A progressive comprehensive exercise program can be effective in improving muscular strength and functional outcome in severely burned children and that it may be safely included in a multidisciplinary rehabilitation program for severe burns.

References