Comparing the energy cost of ambulation with the reciprocal gait orthosis (RGO) to the ankle foot orthosis (AFO) in children with myelomeningocele.

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Benefits of ambulation 1-3
• Reduced contractures
• Reduced fracture incidence
• Lower risk of pressure ulcer
• Increased circulation
• Increased strength and range of motion
• Less risk of osteoporosis/greater bone density
• Improved bowel function
• Stimulates bone development/growth in children
• Promotes independence
• Prevents deformities
• Psychosocial benefits

Reciprocal Gait Orthoses (RGO) 2
• Benefits
  • Immobilize knees & ankles
  • Allow hip motion in sagittal plane
  • Produces more reciprocal gait pattern
  • Couples motion of hip joints
• Costs
  • Slow and exhausting
  • High discontinuation rate
  • Facilitates excessive trunk flexion and arm loading

Ankle Foot Orthoses (AFO) 1,3
http://www.eagleorthopaedics.com/ortho.html
• Benefits
  • Reduction in pelvic tilt and rotation
  • Improved standing posture
  • Knee-extension force of floor-reaction AFOs prevents crouching
  • Less complaint of fatigue/heat than with RGO
  • Prevent foot deformities
  • Encourage independent mobility
• Costs
  • Increased height and weight higher cost
  • Less success with age
  • Crouching
  • Footwear fittings

Clinical Relevance 1-3
• AFOs most commonly prescribed
• AFO users exhibit better posture alignment
• 95% of children with MMC can achieve community ambulation with assistance
• Use of AFO brings energy cost of walking down vs. higher metabolic cost with RGO
• RGOs and AFOs allow for more normal gait pattern vs. barefoot walking and HKAFO
• RGOs have been successful as exercise equipment

References