



THE UNIVERSITY OF
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Long-Term Outcomes in Children with Acute Flaccid Myelitis

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PICO QUESTION

In children with a diagnosis of acute flaccid myelitis, what are the long-term outcomes regarding posture and movement, gross and fine motor control, and ADL performance?

RATIONALE

- Acute flaccid myelitis (AFM) is a neurological condition that affects the gray matter of the spinal cord and causes weakness of muscles and decreased reflexes
- April 2021: 652 confirmed cases since 2014
- Increase in cases in the U.S. in 2014, 2016, and 2018
- According to mentor, there has not been many cases with a full recovery
- Little known about long-term outcomes and prognosis of AFM

REVIEW PROCESS

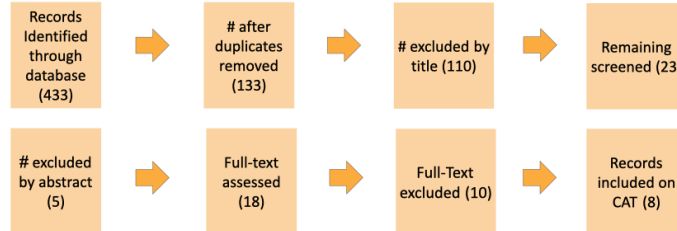


SEARCH METHODOLOGY

Databases Searched	CINAHL, Google Scholar, PubMed, Scopus, PMC
Search Terms	Child, pediatric, acute flaccid myelitis, outcome, posture, movement, gross motor, fine motor, motor function, ADL, activities of daily living, functional activities, dressing, feeding, bathing, functional mobility <i>*Terms searched individually and in combination</i>

Inclusion Criteria	Exclusion Criteria
<ul style="list-style-type: none"> • Published in English • Diagnosis of AFM • Population under age 18 	<ul style="list-style-type: none"> • Literature reviews • Population ages 18+ • Studies published 10+ years ago

SEARCH RESULTS



MAIN FINDINGS

Citation (Quality Score %)	Long-Term Outcomes	
	ADL Performance	Fine/Gross Motor Control, Posture & Movement
Level III Evidence		
Hagen et al., 2020 (61%)	(+) WeeFIM (Self-care) scores	(+) Strength in all muscle groups maintained or improved using manual muscle testing (+) Increase in WeeFIM (Mobility) and Physical Ability and Mobility Scale (PAMS) scores
Kane et al., 2019 (68%)		(-) 38/42 persistent muscle weakness (+) 1/3 mounted a full recovery
Melicosta et al., 2019 (77%)	(+) WeeFIM Self-Care Developmental Quotient overall mean score	(+) Spinal Cord Injury Measure and WeeFIM Mobility Developmental Quotient overall mean score
Level IV Evidence		
Chong et al., 2021 (86%)	(+) Barthel Index after 3 years	(-) 25/33 persistent motor deficits
Downey et al., 2020 (83%)	(-) 5/21 cases needed mod to total assist (+) 10/16 cases without full recovery can perform ADLs	(+) 20/21 cases improved to some degree (-) 16/21 with persistent weakness after two years
Kornafel et al., 2017 (75%)	(-) Total assistance for self-care skills and transfers	(+) Remained limited, but improved from admission (+) Can sit unsupported in wheelchair for up to four minutes
Martin et al., 2017 (71%)		(-) 2/8 improvement at one year with Assisting Hand Assessment (+) 6/8 had persistent motor or functional deficits at 12 months
Matensanz et al., 2019 (82%)		(-) 2/14 full recovery

(+) Positive outcomes seen in > 50% of participants
(-) Positive outcomes not seen in > 50% of participants

ACTIVITY BASED RESTORATIVE THERAPY (ABRT)

- ABRT is a therapeutic approach that uses repeated, patterned and non-patterned movement to recover function that is lost due to neurological injury.
- Key components: functional electrical stimulation, locomotor gait training, massed and task specific practice, and weight loading
- 3-5 hours per day of OT/PT, 5x/week

LIMITATIONS

- Due to the variable progression of the disease and individualized rehabilitation, outcomes may not be consistent
- Difficult to measure whether ABRT was successful or if natural recovery occurred
- Lack of follow-up
- High attrition rates

BOTTOM LINE

- Children with AFM who received some form of rehabilitation showed improvements in strength, activities of daily living (ADL) performance, gross and fine motor skills.
- All studies showed at least minimal improvement in functional performance from diagnosis up to three years.
- ABRT could have been a contributing factor to the improvements seen in children with AFM in two of our articles.

RECOMMENDATIONS

- 3-5 hours of OT/PT, 5x/week using the 5 components of ABRT
- Consistent assessments
- More research on the outcomes of specific interventions
- Individualized rehabilitation according to stage of progression

REFERENCES



EXAMPLE METHOD FOR MONITORING CLINICAL APPLICATION

