Symptom Management in Acute Flaccid Myelitis

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Disclosures

- No relevant financial disclosures or conflicts of interest

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Objectives

- Describe management of chronic medical conditions associated with AFM
- Describe management of chronic functional problems associated with AFM
- Describe ongoing management of two patients with AFM

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Chronic Medical Conditions

- Respiratory dysfunction
- Cranial nerve dysfunction
- Bladder dysfunction
- Bowel dysfunction
- Low bone mineral density

Chronic Medical Conditions

Bladder dysfunction

- Flaccid bladder/incontinence
- Renal stones
- Urinary tract infections

Bowel dysfunction

- Lower motor neuron bowel
- Incontinence
- Constipation

Bove R., et al. 2019 – Bowel and bladder incontinence 29% (24/83)

1. Messacar, K., et al. (2016). "Acute flaccid myelitis: A clinical review of US cases 2012-2015." Ann Neurol 80(3): 326-338.
2. Bove, R., et al. (2019). Unmet Needs in the Evaluation, Treatment, and Recovery for 167 Children Affected by Acute Flaccid Myelitis Reported by Parents Through Social Media. Pediatric Neurology,

Chronic Medical Conditions

Cranial nerve dysfunction

- Oculomotor/facial weakness
- Bulbar weakness - dysphagia/dysarthria
  - Supplemental nutrition

Bove R et al. 2019 – Dysphagia 16%

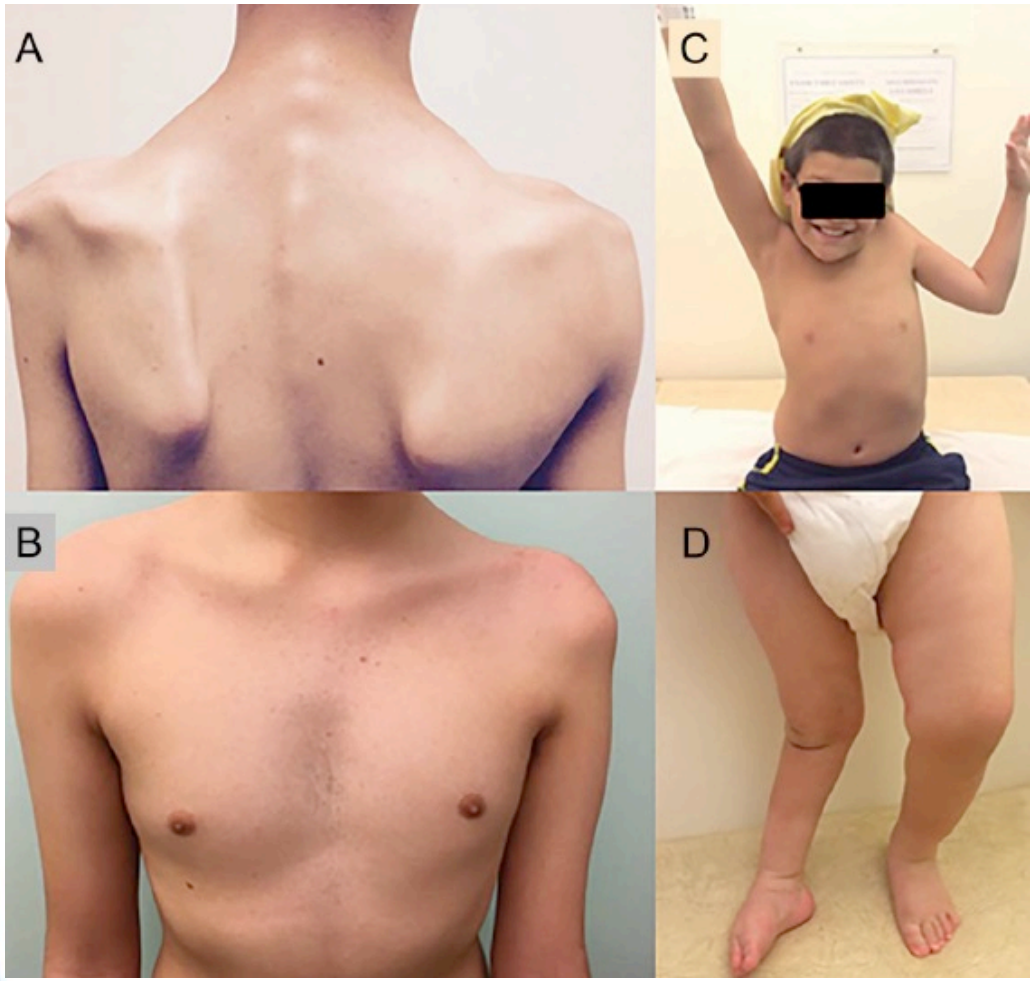
Low bone mineral density

- Osteoporosis
- Fractures

Bove R et al. 2019 – Osteoporosis 21%

1. Messacar, K., et al. (2016). "Acute flaccid myelitis: A clinical review of US cases 2012-2015." Ann Neurol 80(3): 326-338.
2. Bove, R., et al. (2019). Unmet Needs in the Evaluation, Treatment, and Recovery for 167 Children Affected by Acute Flaccid Myelitis Reported by Parents Through Social Media. Pediatric Neurology.

Neurologic Recovery in AFM



- Distal > proximal muscles
- Profoundly affected muscles least likely to recover
- Residual weakness in 75-90% at 1 year
- Recovery most rapid in first several months
- Ongoing functional gains despite muscle weakness
  - Compensatory strategies

1. Martin, J. A., et al. (2017). "Outcomes of Colorado children with acute flaccid myelitis at 1 year." Neurology 89(2): 129-137.
2. Messacar, K., et al. (2016). "Acute flaccid myelitis: A clinical review of US cases 2012-2015." Ann Neurol 80(3): 326-338.
3. Yea, C., et al. (2017). "Longitudinal Outcomes in the 2014 Acute Flaccid Paralysis Cluster in Canada." J Child Neurol 32(3): 301-307.
4. Gordon-Lipkin, E., et al. (2018). "Comparative quantitative clinical, neuroimaging, and functional profiles in children with acute flaccid myelitis at acute and convalescent stages of disease." Dev Med Child Neurol.

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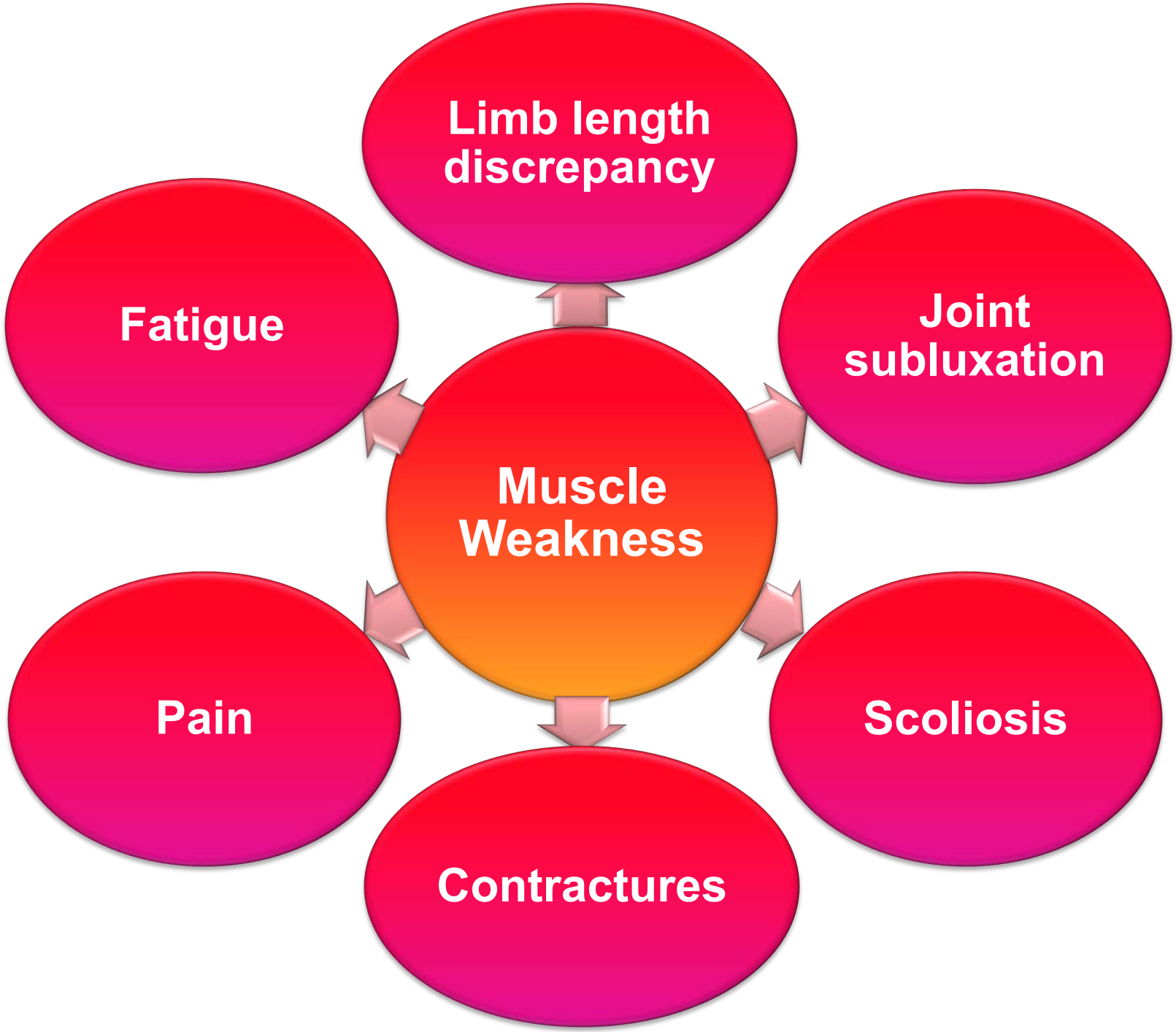
Chronic Functional Problems



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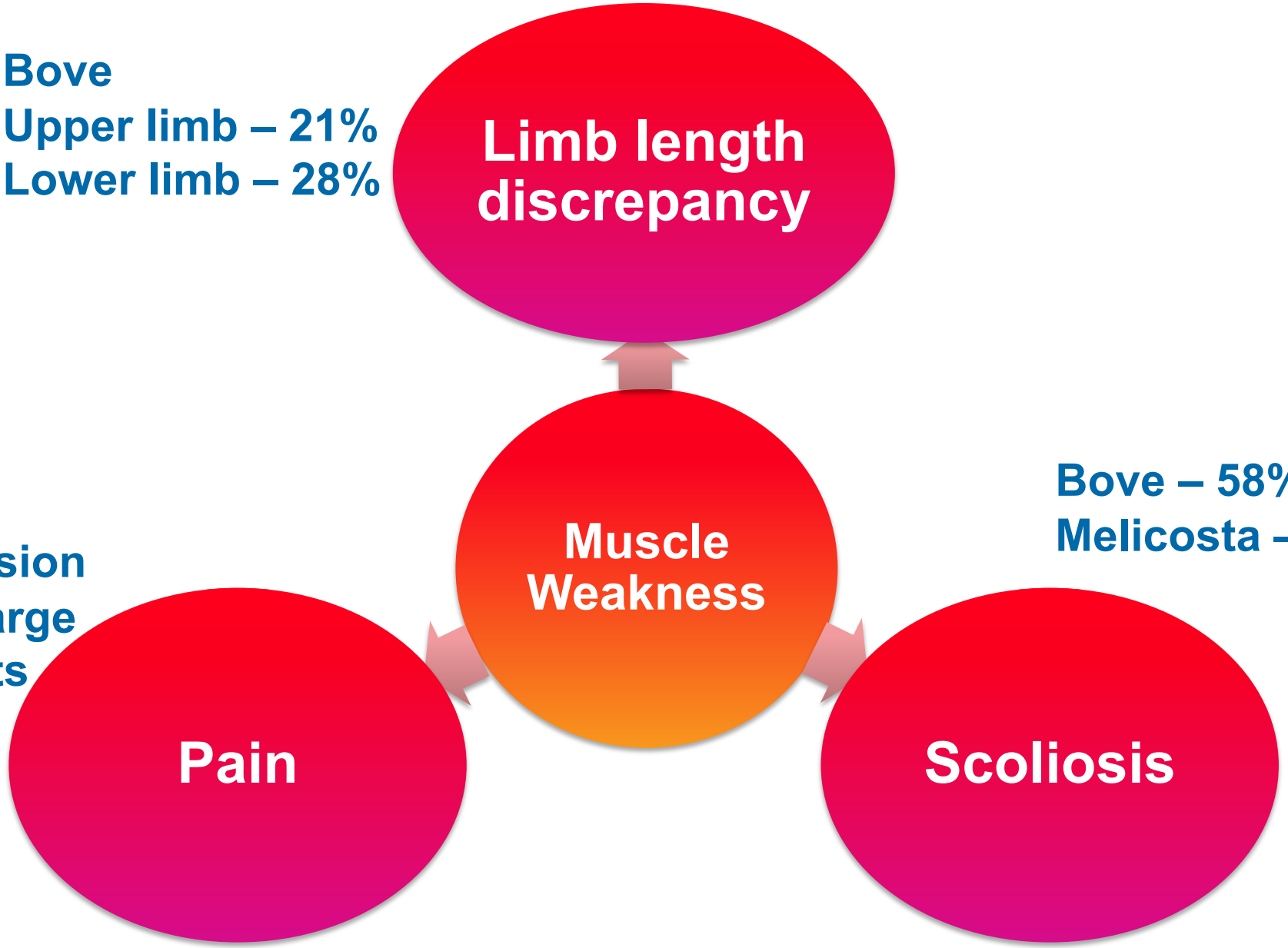
Bove
Upper limb – 21%
Lower limb – 28%



Bove – 29-40%
Melicosta
- 61% at admission
- 39% at discharge
- 0% outpatients

Bove – 58%
Melicosta – 35%

1. Bove R et al. (2019) Unmet Needs in the Evaluation, Treatment, and Recovery for 167 Children Affected by Acute Flaccid Myelitis Reported by Parents Through Social Media. Pediatric Neurology.
2. Melicosta M et al. (2019) Acute Flaccid Myelitis: Rehabilitation challenges and outcomes in a pediatric cohort. Journal of Pediatric Rehabilitation Medicine

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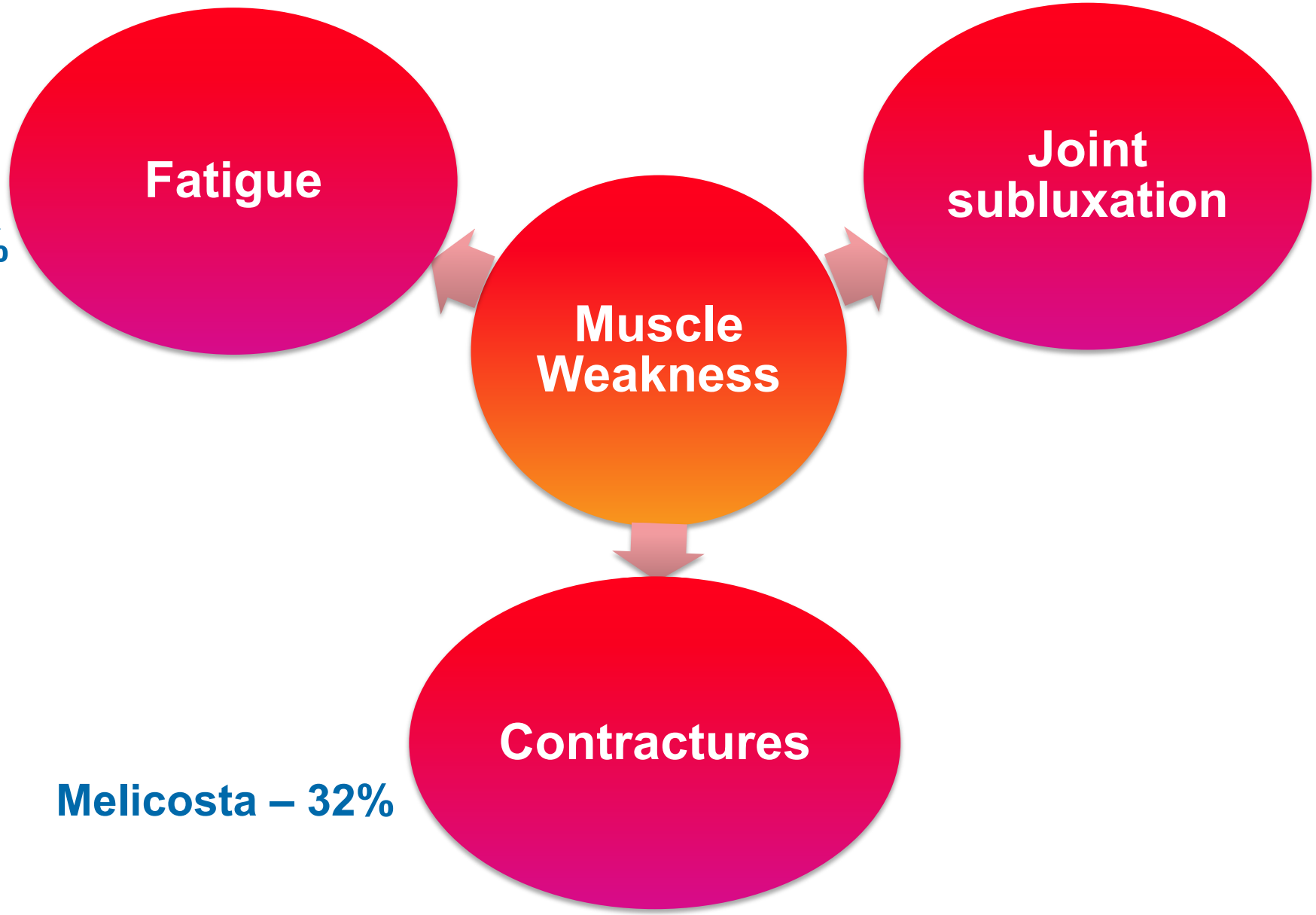
Bove – 53%



Melicosta – 32%

1. Bove R et al. (2019) Unmet Needs in the Evaluation, Treatment, and Recovery for 167 Children Affected by Acute Flaccid Myelitis Reported by Parents Through Social Media. Pediatric Neurology.
2. Melicosta M et al. (2019) Acute Flaccid Myelitis: Rehabilitation challenges and outcomes in a pediatric cohort. Journal of Pediatric Rehabilitation Medicine

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Patient 1 - RH

- 7 y/o boy, history of asthma
- October 2018
- Febrile respiratory illness/status asthmaticus
- Flaccid left lower limb paralysis
  - 0/5 throughout
- Back, hip and thigh pain
  - Gabapentin

Strength at 20 months post-onset

Muscles Left Leg:	Strength (0/5)
Iliopsoas/sartorius	1
Gluteus maximus	1
Gluteus medius	2
Adductors	1
Medial Hamstrings	1
Lateral Hamstrings	1
Quadriceps	1
Anterior Tibialis	1
Gastrocnemius/soleus	1
Peroneals	3
Posterior Tibialis	0
Toe extensors	3
Toe flexors	3

Patient 1 – RH

The Center for Gait & Movement Analysis

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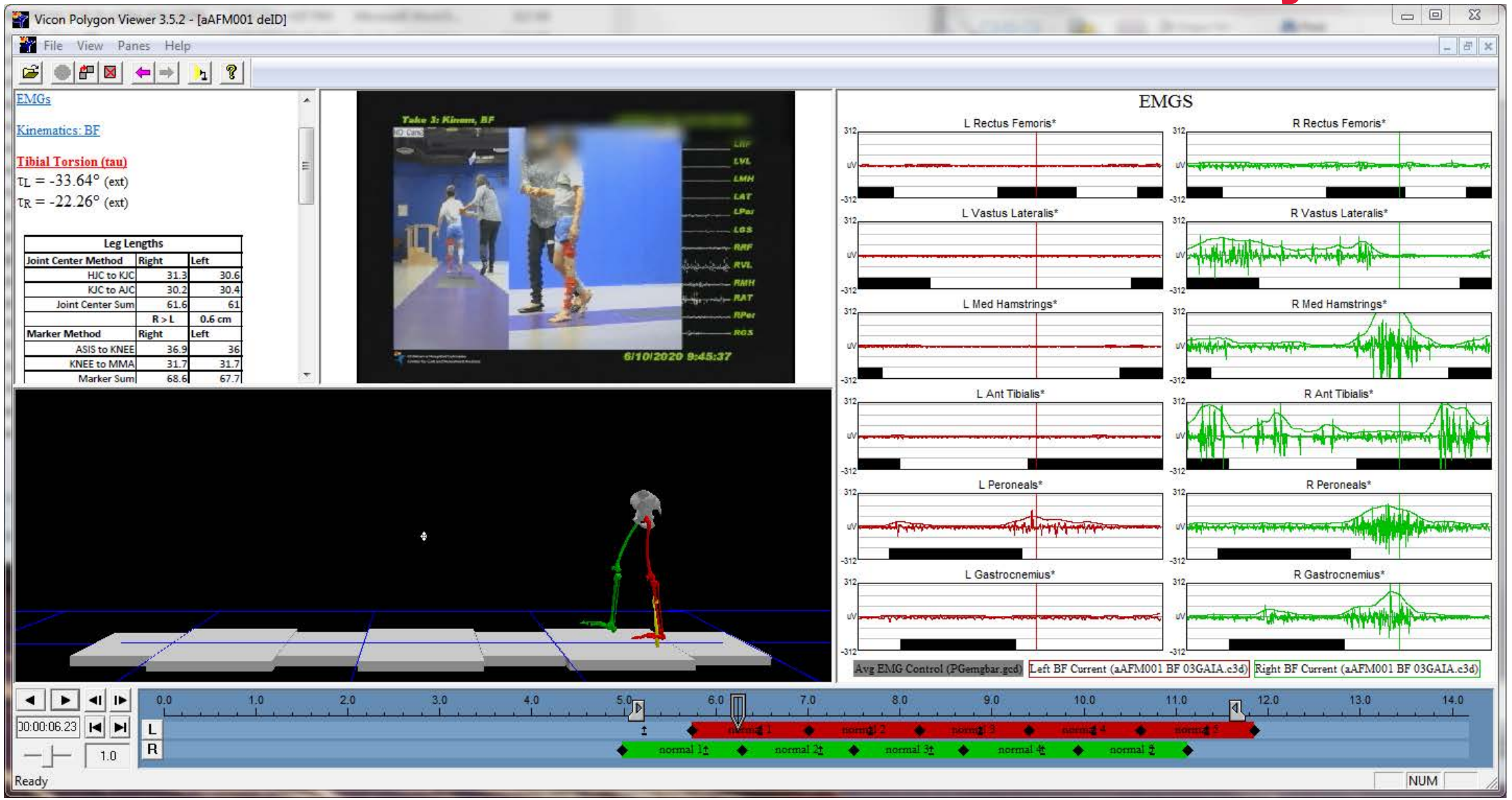
Patient 1 – RH

The Center for Gait & Movement Analysis



Patient 1 - RH

Orthotics

- Initially HKAFO and forward walker
- Trial of carbon fiber toe-off AFO

Pain

- Left knee and low back pain
  - Neoprene knee sleeve

Orthopedic

- No hip subluxation
- 5 mm limb length discrepancy
- No scoliosis

Rehabilitation

- Ongoing PT
- Electrical stimulation

Patient 2 - CA

- 13 y/o boy
- August 2018
- Fever, headache, neck stiffness
- Diagnosed with viral meningitis prior to AFM
- Left upper limb weakness, neck pain, dysphagia, constipation
  - Strength – 0/5 all shoulder muscles, 1/5 biceps, triceps, supination, pronation, 3/5 wrist extension/flexion and grip

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Patient 2 - CA

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Patient 2 - CA

Rehabilitation

- Occupational therapy
- Kinesio taping for scapular stability
- Electrical stimulation

Pain

- Neck and shoulder pain has resolved

Orthopedic

- Mild inferior shoulder subluxation resolved
- No scoliosis

Nerve transfer

- 7 months post-onset
- Spinal accessory to suprascapular nerve
- Median nerve to brachialis
- Ulnar nerve to biceps

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THANK YOU