(Physical) therapy for shoulder dyskinesia in FSHD

Weakness versus discoordination

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Upper extremity dysfunction in FSHD

- Scapular instability is a well known sign of FSHD

- 96.9% of patients experience problems when using shoulders and arms (Hamel et al 2019)

- Most exercise interventions target lower extremity function (Voet et al., 2013)

- In FSHD exercise = medicine

- Only 44.4% of patients exercise the upper extremities (Faux nightingale et al 2021)
(normal) Scapular movement
Scapula alata in FSHD

• Bilateral winging scapula

• Almost no scapular support for the arms

• Low muscle strength of scapular pivoting muscles

• Normal muscle strength of Arm muscles and scapular bracers
• 22 years old man
• At age 16: Parsonage Turner syndrome (neuralgic amyotrophy)
• Effects before and after physical- and occupational therapy (6 months, 12 sessions)
• **Scapula alata caused by diskinesia, not weakness**
Muscular inbalance in recruitment

Scapular stabilizing muscles

Scapular bracing against impact
- Levator scapulae
- Rhomboïdeus minor/ major
- Pectoralis minor

Scapular pivoting with arm use
- Trapezius, pars ascendens
- Serratus anterior
- Trapezius descendens
Scapular musculature function

Scapular bracing against impact
- Levator scapulae
- Rhomboïdeus minor/ major
- Pectoralis minor

Scapular pivoting with arm use
- Trapezius, pars ascendens
- Serratus anterior
- Trapezius descendens
Consequences of scapular dyskinesia
Surmenage  Impingement  Entrapment
What can be achieved for muscles targeted by FSHD?

Flexibility
Strength
Endurance
Technique
Muscular discoordination test in FSHD

- 38 years old male
- Genetically confirmed FSHD
- Scapula alata with adequate serratus anterior strength
Explicit Scapular training supine
Explicit Scapular training seated
Implicit scapular training suggestion
Implicit scapular training suggestion
Scapulataping

- Taping aimed at providing exoceptive feedback for scapula propriocepsis
- Helps maintain scapular posterior tilt while using the arm
- Use non stretchable taping (in this case a combination of fixomull stretch and leukotape)
- Apply ventrally without strength and increase resistance when posterior of the acromion and scapular spine.
- The two strips intersect at the inferior angle of the scapula
Discussion

Scapular Discoordination (dyskinesia)

Limitations in daily life

Muscle weakness

Disuse in daily activities

Accelerated fatty infiltration (Janssen et al. 2013)

Scapular coordination training

OR

Less disuse and limitations?

Slowed fatty infiltration??
Take home message

- Scapular coordination might be more influential in arm movement restrictions than loss of muscle strength in part of the FSHD population.

- Normal use of scapular muscles might protect from rapid progression of FSHD in the shoulder girdle.

- However, clinical experience shows that scapular coordination is more difficult to influence in FSHD than in NA.
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• Questions?