

(Physical) therapy for shoulder dyskinesia in FSHD

Weakness versus discoordination

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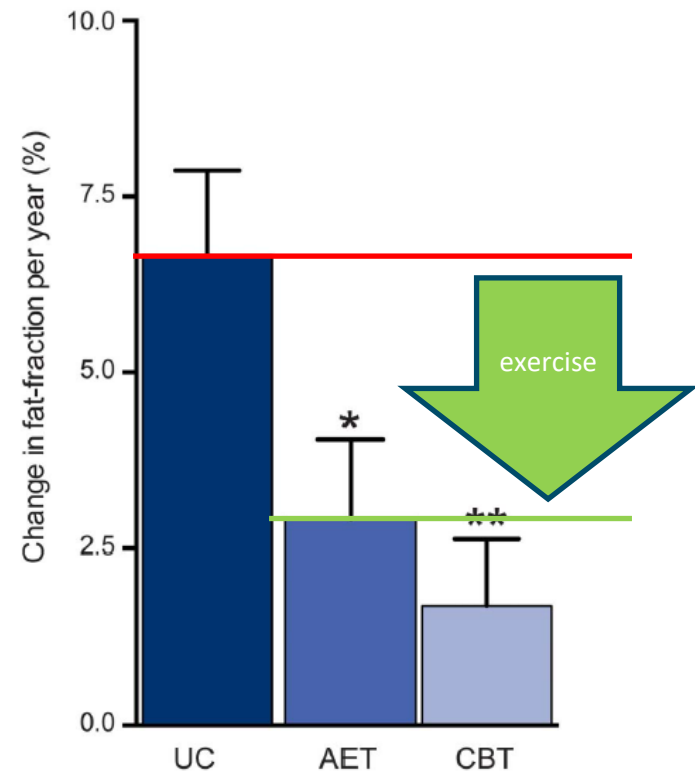


Radboudumc

Upper extremity dysfunction in FSHD

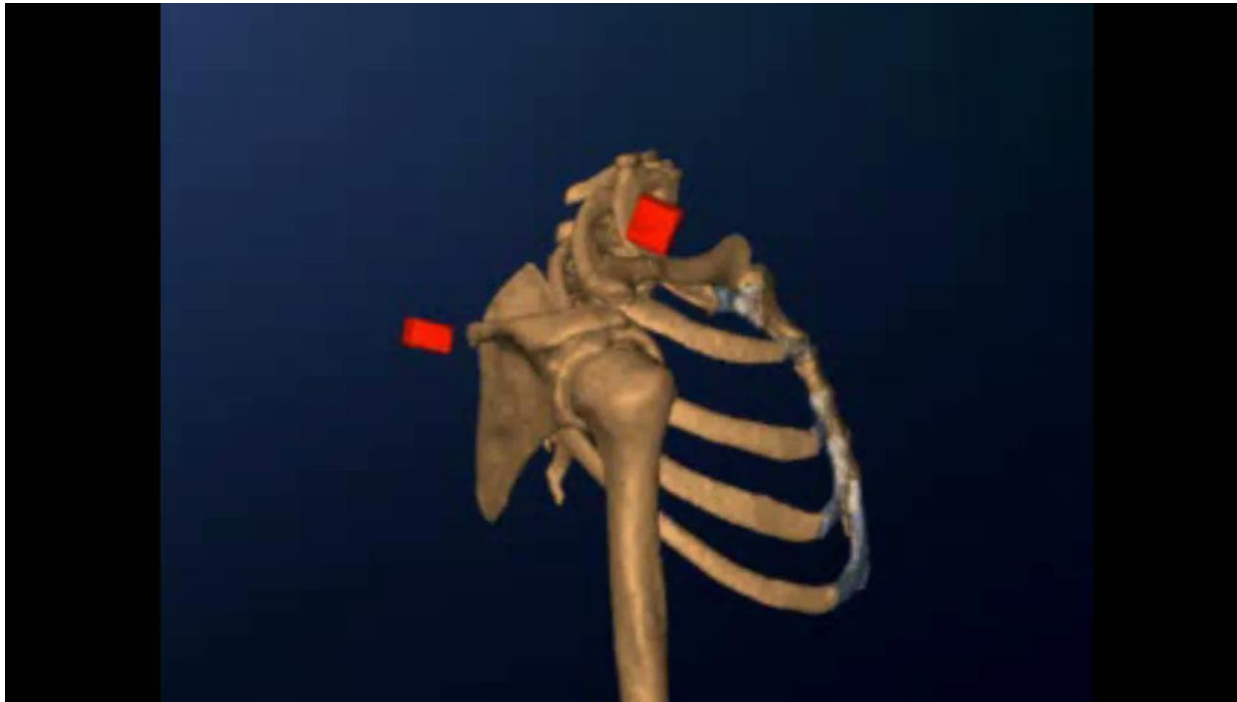
- Scapular instability is a well known sign of FSHD
- 96,9% of patients experience problems when using shoulders and arms (Hamel et al 2019)
- Most exercise interventions target lower extremity function (Voet et al., 2013)
- In FSHD exercise = medicine
- Only 44,4% of patients exercise the upper extremities (Faux nightingale et al 2021)

Figure 3 Treatment effects of aerobic exercise training and cognitive-behavioral therapy on MRI-derived fat fractions of the individual thigh muscles in patients with facioscapulohumeral muscular dystrophy (FSHD)



Janssen et al. 2016

(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



Radboudumc shoulder expertise



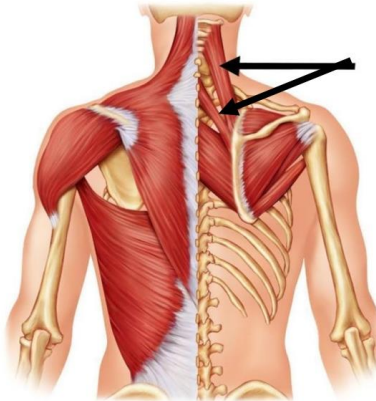
- 22 years old man
- At age 16: Parsonage Turner syndrome (neuralgic amyotrophy)
- Effects before and after physical- and occupational therapy (6 months, 12 sessions)
- **Scapula alata caused by dyskinesia, not weakness**

Muscular imbalance in recruitment

Scapular stabilizing muscles

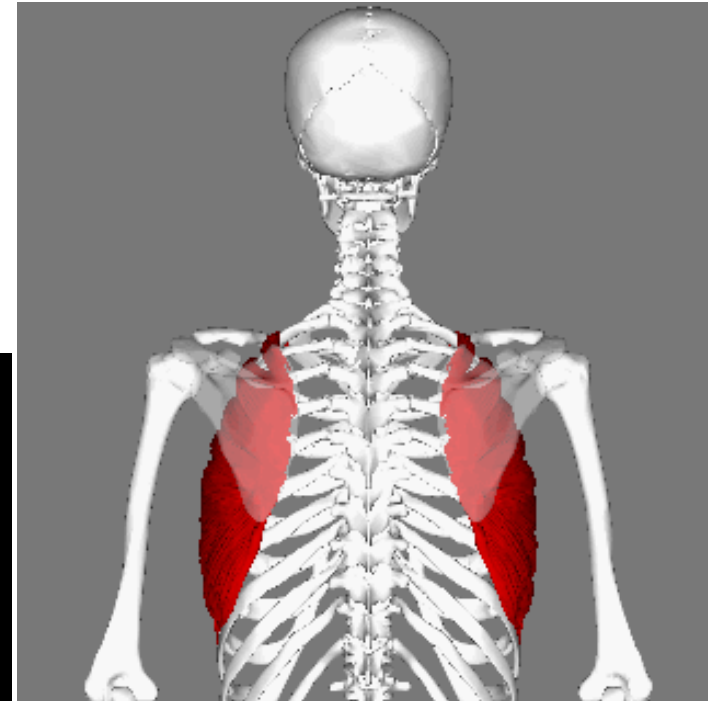
Scapular bracing against impact

- Levator scapulae
- Rhomboïdeus minor/ major
- Pectoralis minor



Scapular pivoting with arm use

- Trapezius, pars ascendens
- Serratus anterior
- Trapezius descendens



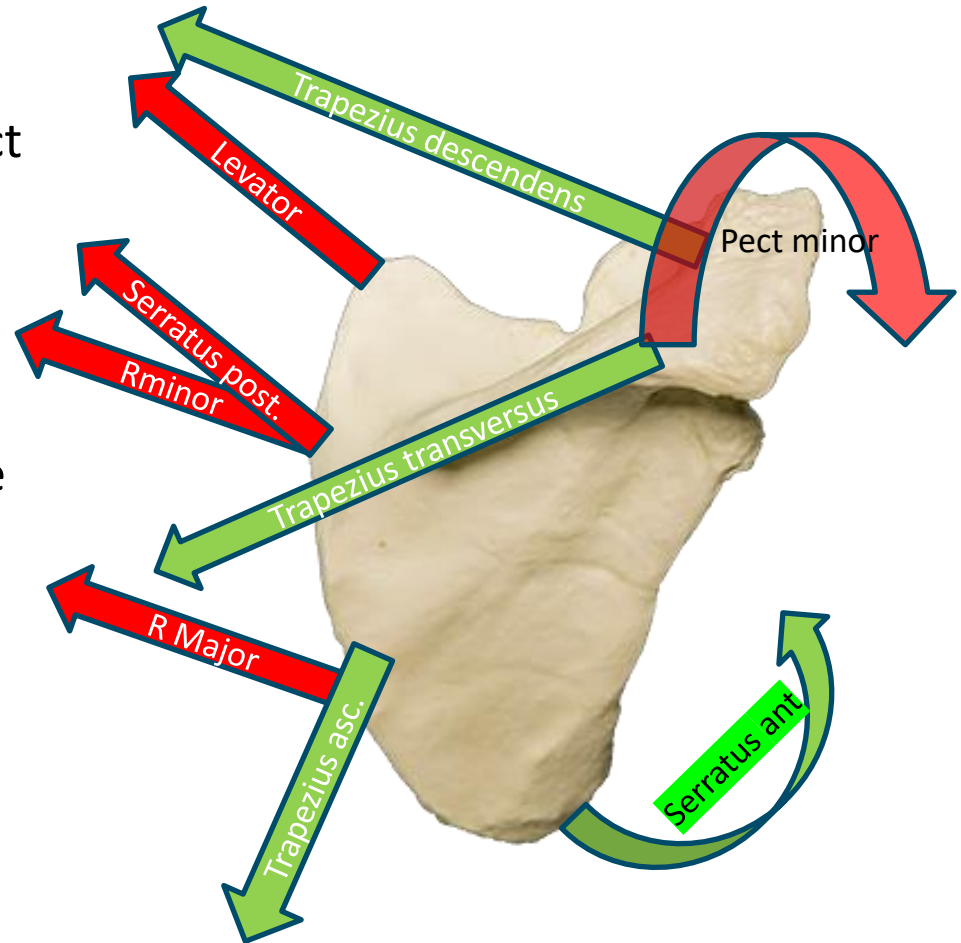
Scapular musculature function

Scapular bracing against impact

- Levator scapulae
- Rhomboïdeus minor/ major
- Pectoralis minor

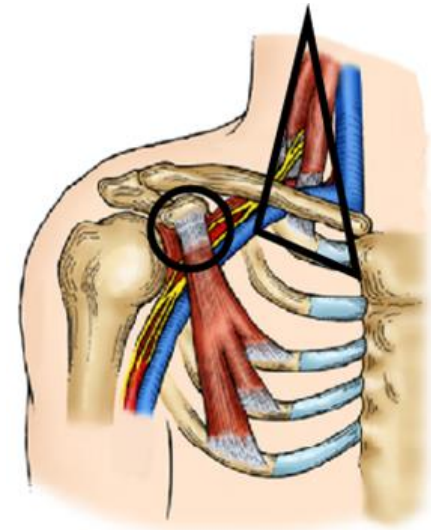
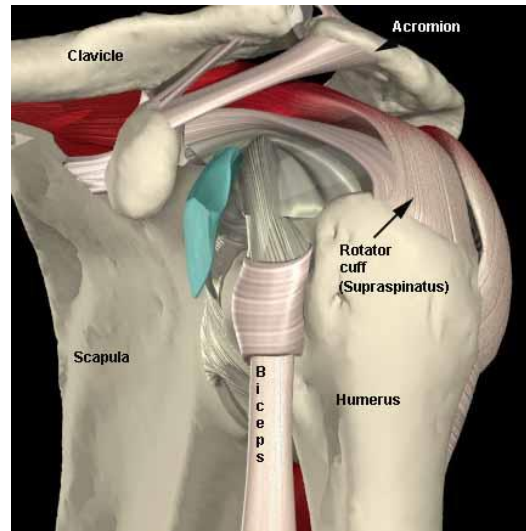
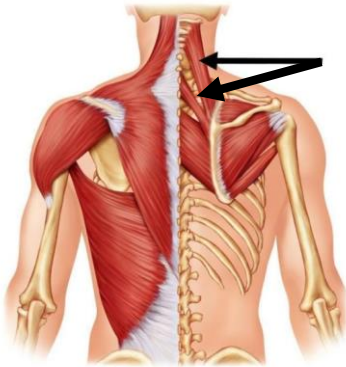
Scapular pivoting with arm use

- Trapezius, pars ascendens
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Consequences of scapular dyskinesia

Surmenage Impingement Entrapment



What can be achieved for muscles targeted by FSHD?



Flexibility



Strength

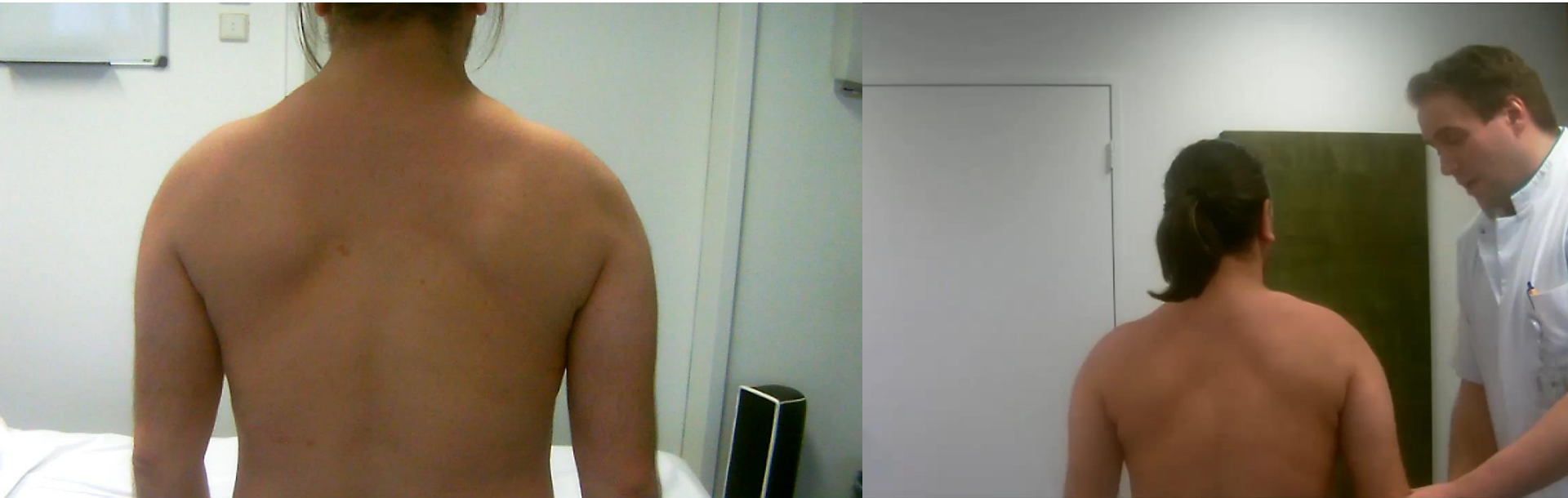


Endurance



Technique

Muscular discoordination test in FSHD



- 38 years old male
- Genetically confirmed FSHD
- Scapula alata with adequate serratus anterior strenght

Explicit Scapular training supine



Explicit Scapular training seated



Implicit scapular training suggestion

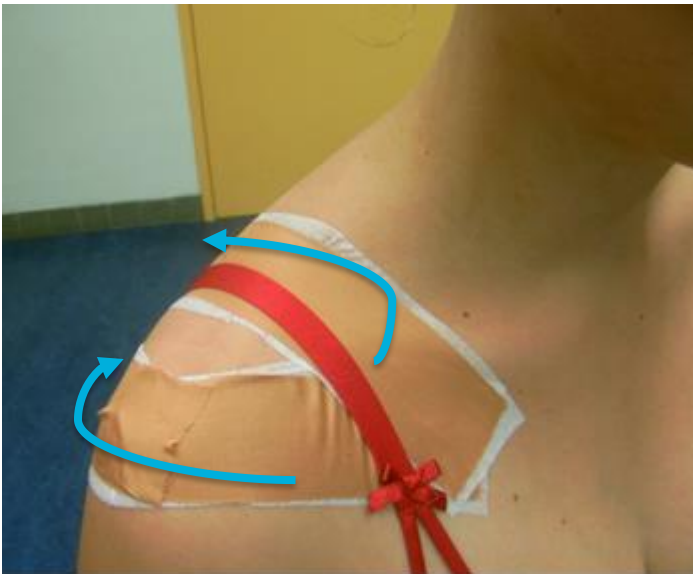


Implicit scapular training suggestion

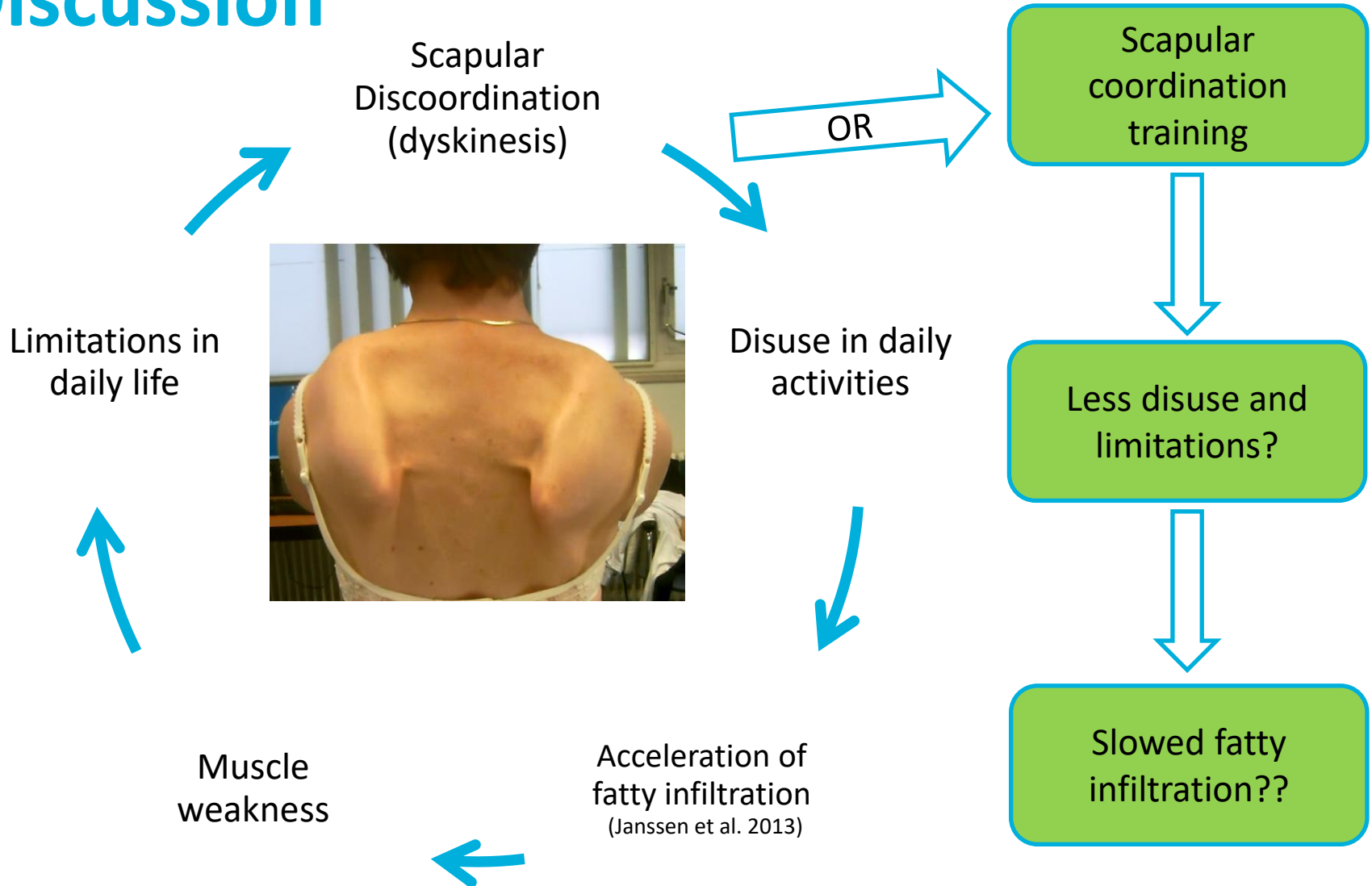


Scapulataping

- Taping aimed at providing exoceptive feedback for scapula proprioception
- 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 strenght and increase resistance when posterior of the acromion and scapular spine.
- The two strips intersect at the inferior angle of the scapula



Discussion



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

Acknowledgements

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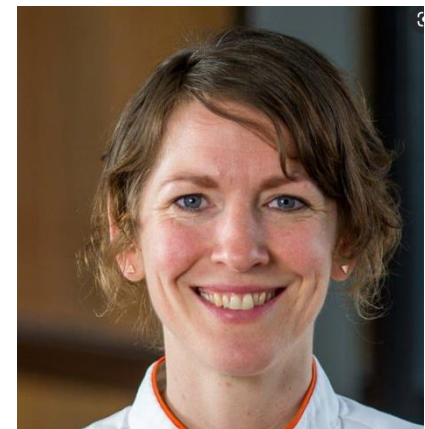
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Disclosures

- The authors have nothing to disclose
- Thank you for your attention
- Questions?

