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Alpes



The pencil Exercise to treat posterior functional shoulder instability

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Disclosure



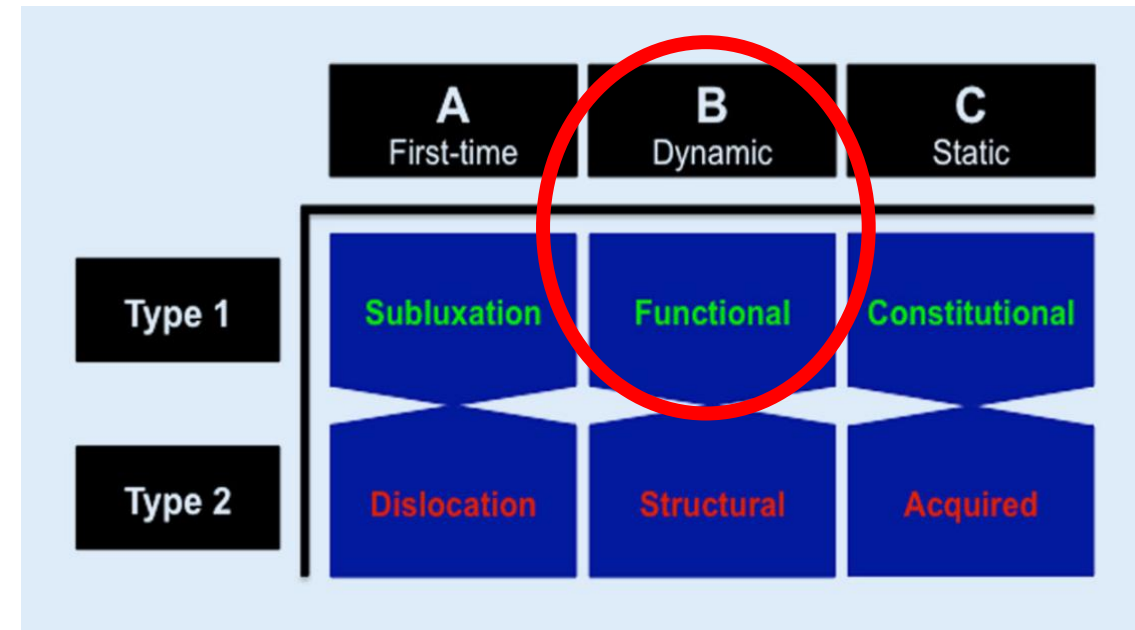
1. **Royalties** from Move Up and SBM
2. **Consulting** income from Arthrex, Move-Up and SBM
3. Past President of **SFA**
4. Member of **Green Shoulder Circle**
5. Co-Founder of the Journal "*The Hive*"



Background

- **Atraumatic**
- **Hyperlaxity**
- **Aberrant shoulder muscle activation**

B6 (Gerber) – Polar III
(Stanmore) – B1
(Moroder)



Neuro-motor rehab program

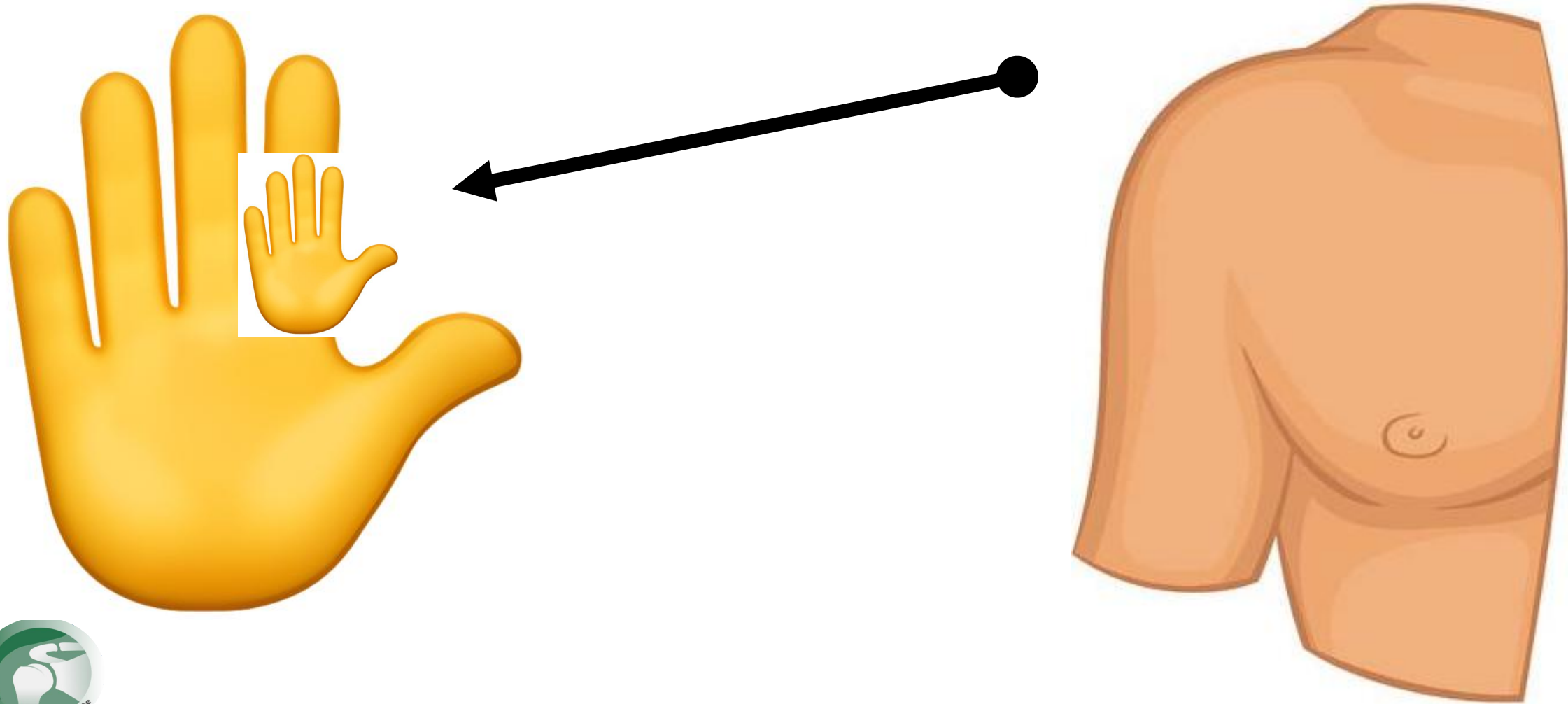
Bottom-up (Moroder)

Or

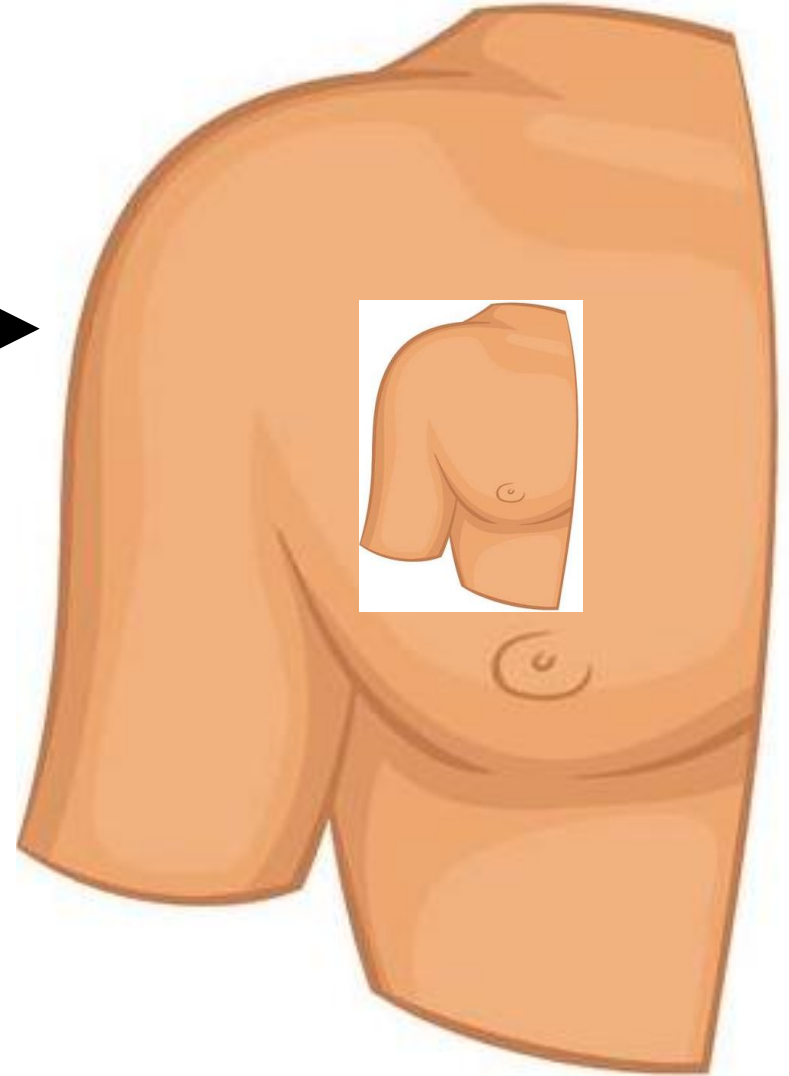
Top-down (Liotard)

REGULATION

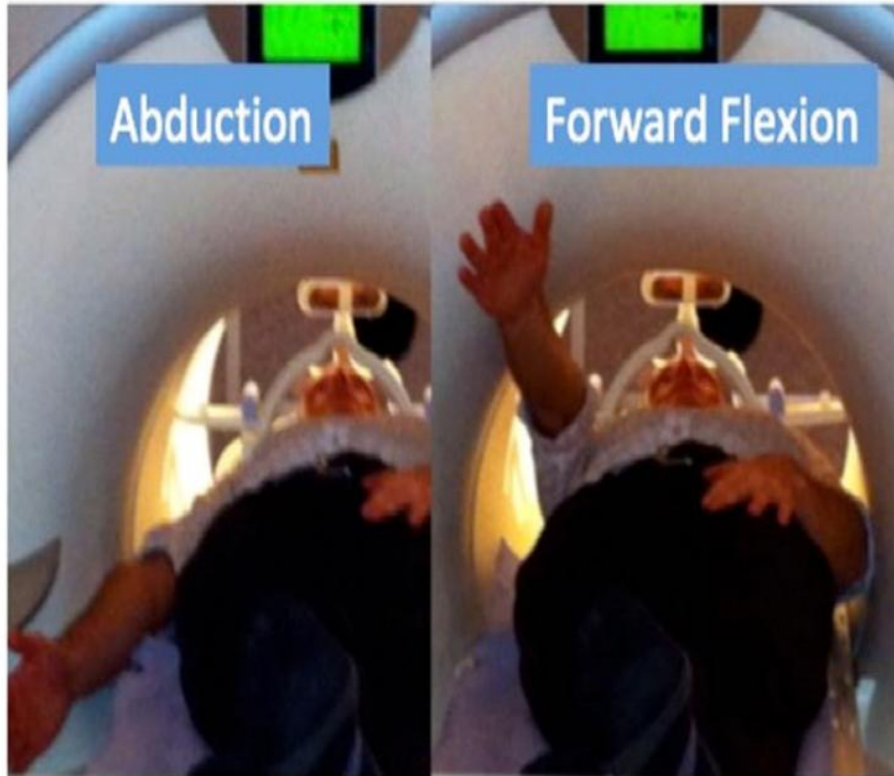
Bottom-up / Proximal-distal rehab



Top-Down / Distal-Proximal rehab



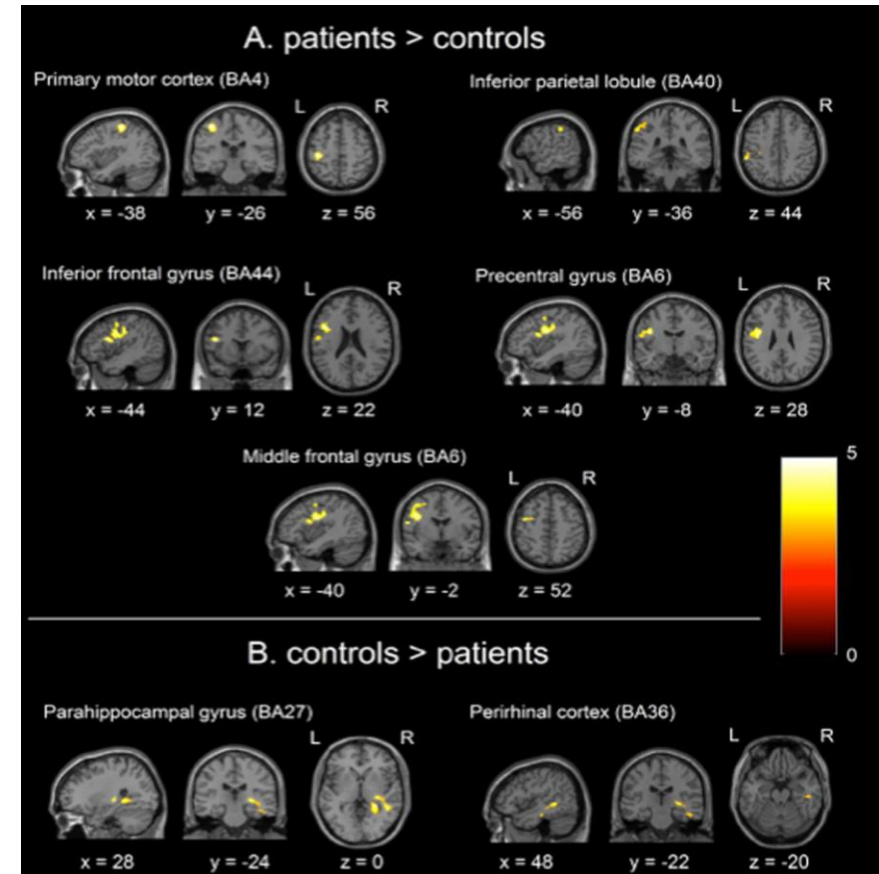
Abnormal Cortical Activation in FSI



1 Cycle

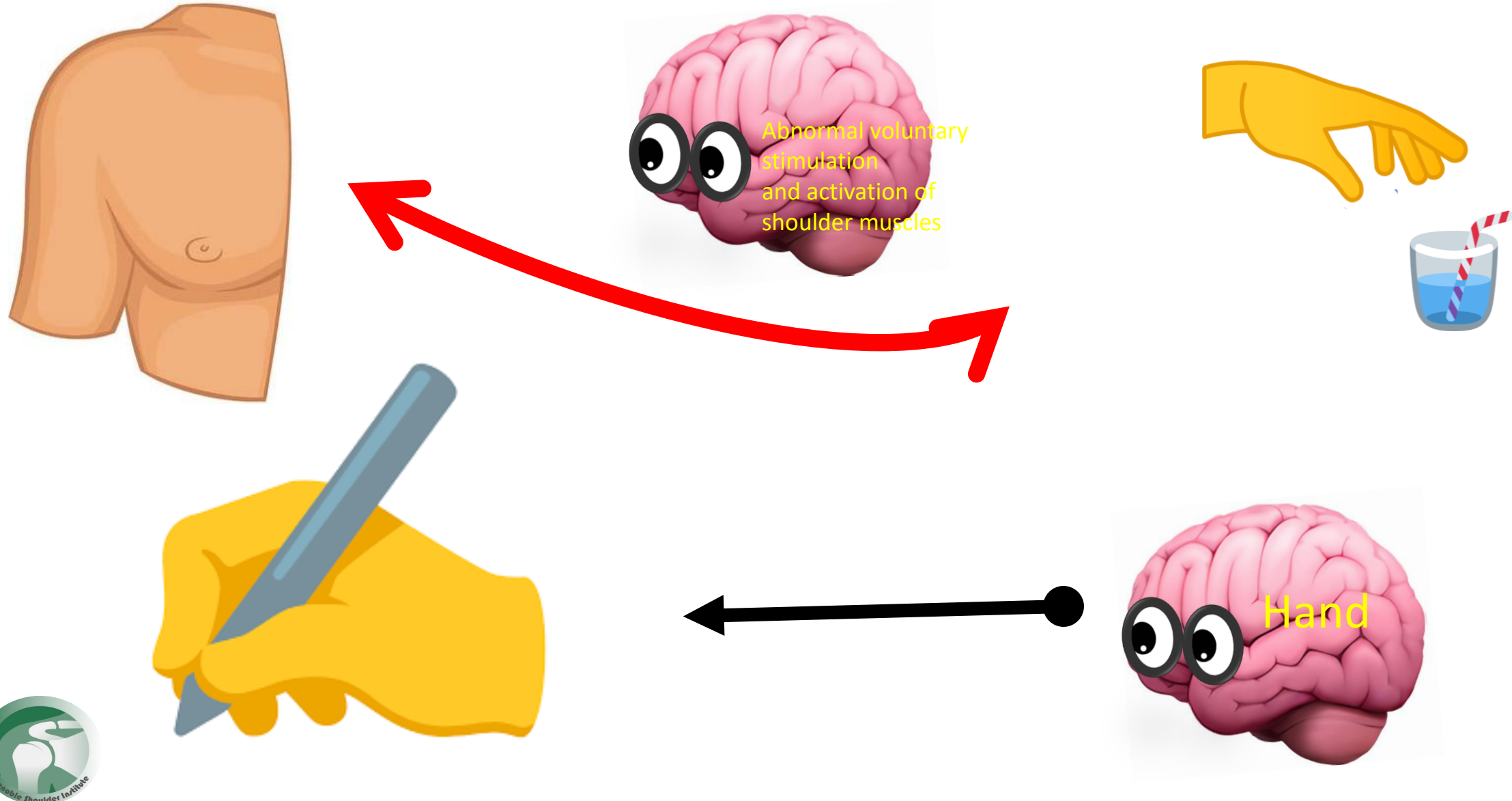
Forward
Flexion or
Abduction
(12 sec)

Rest
(12 Sec)



Activation was greater in controls compared to patients in the parahippocampal gyrus (BA27) and perirhinal cortex (BA36)

Our method: bypass the shoulder



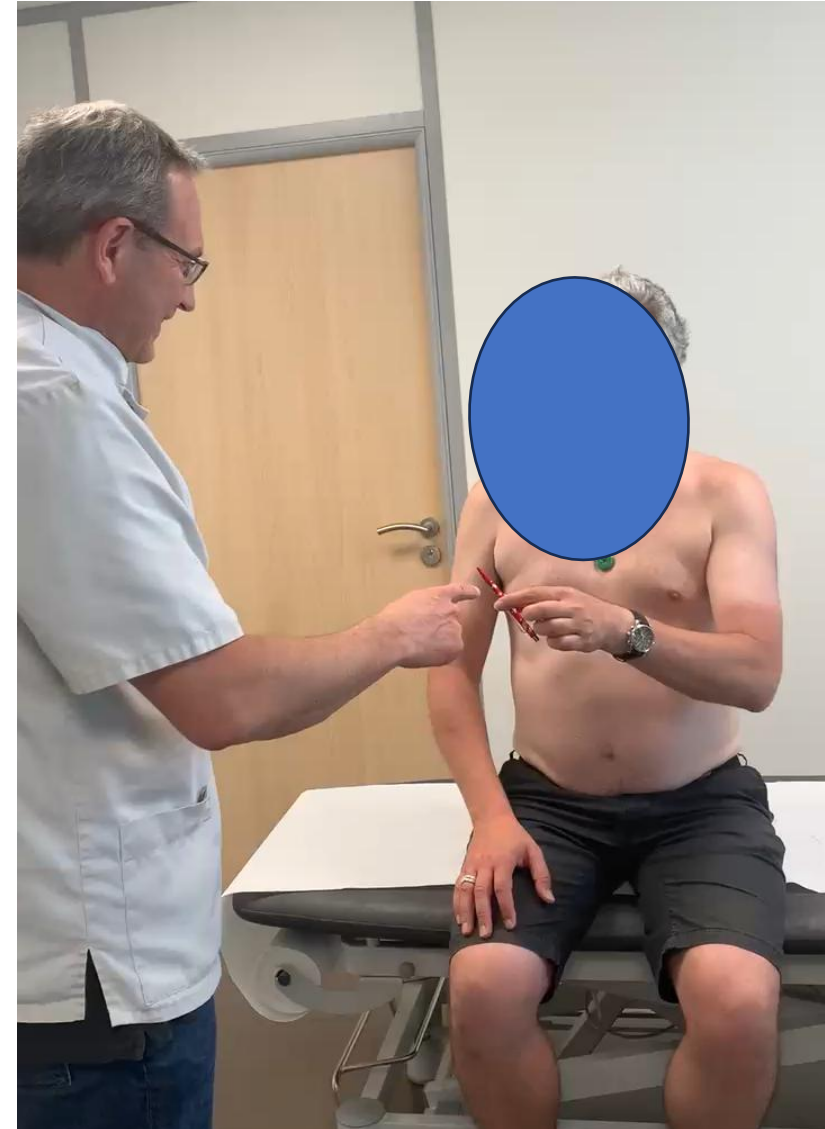
“The Pencil Exercise”

Step 1:

- Patient seated
- Fine motor movements with the pen
- Only the hand first

Step 2:

- Incorporate movements of the entire arm



“The Pencil Exercise”

Step 3:

- Copy and follow the therapist's movements

Step 4:

- Continue without having to imitate the therapist



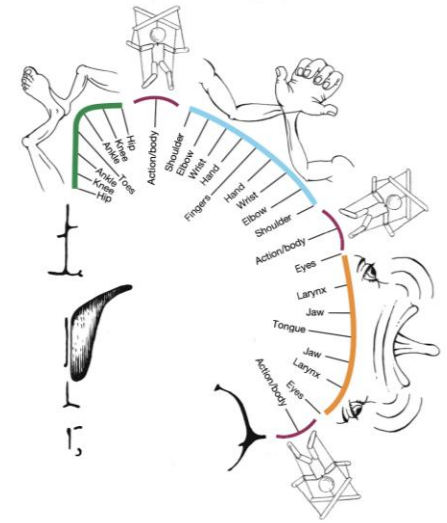
“The Pencil Exercise”

Step 5:

- Take the time that's needed to reach autonomy of the patient
- The patient returns home able to do this exercise alone.



Take Home Message: PFI



1. abnormal cortex activation

2. abnormal muscle contraction

3. Focus on the Hand!

- **Neuro-motor rehab**
 - Bottom-up regulation (Shoulder Pace-Maker)
 - Top-down regulation (Pencil exercise)
- **Further studies are required to define the effectiveness of these techniques**

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