

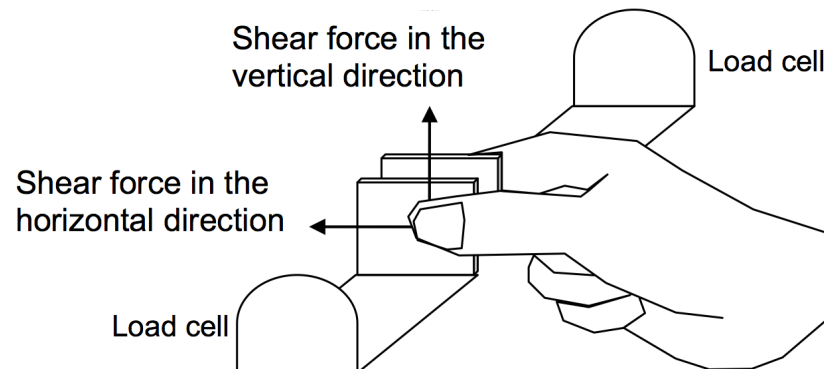
The Benefits of Visual Feedback

Use of Visual Force Feedback to Improve Digit Force Direction During Pinch Grip in Persons With Stroke

N. Seo, H. Fischer, R. Bogey, W. Rymer, & D. Kamper

Archives of Physical Medicine and Rehabilitation

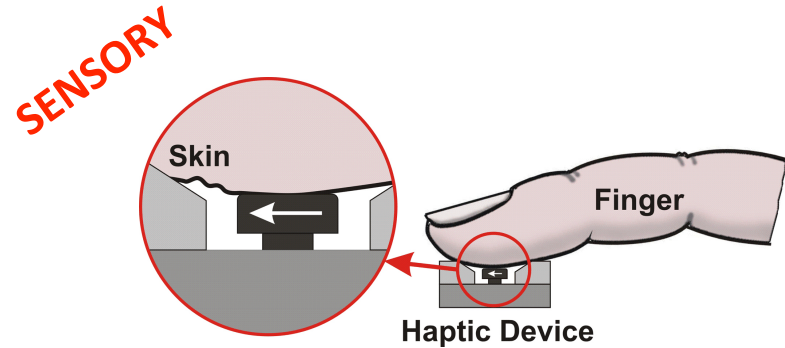
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Discussion Point #1

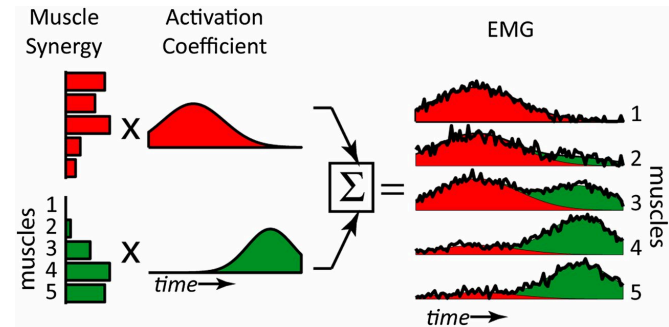
What is the root of stroke patients' digit-force misdirection?

1. Impaired perception of sensation (e.g., skin stretch), which would impair closed-loop control?
2. Altered muscle-activation patterns (i.e., corticomotor lesions)?



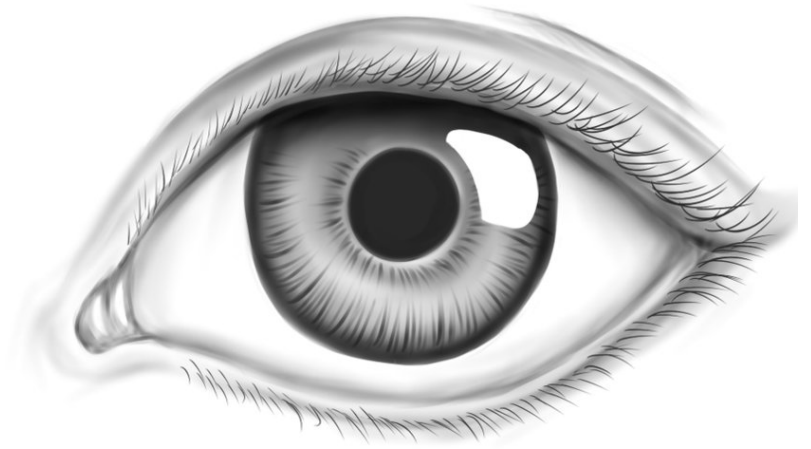
VS.

MOTOR



Discussion Point #2

This study replaces skin stretch (or similar tactile feedback) with vision. What about moving the stretch to a different, unimpaired location on the body? Could this be an extension of Sam and Zhan Fan's research? Or even HAPIBands?



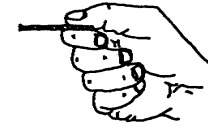
Discussion Point #3

What is the effect of letting subjects “pinch through their preferred digit orientation”?

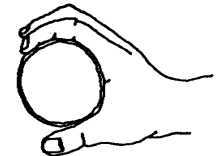
Didn't Michele make a similar design choice in her reaching task?



1. Pinch



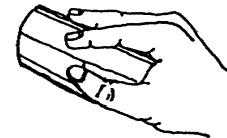
1. Pinch



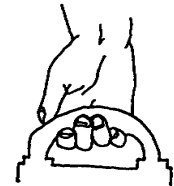
3. Span



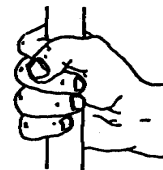
2. Disc



2. Disc



4. Hook



5. Power



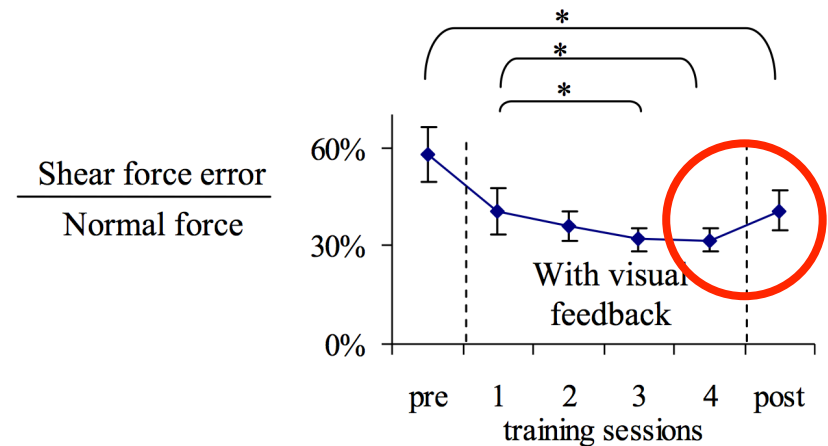
6. Flat Hand Push



7. Finger Push

Discussion Point #4

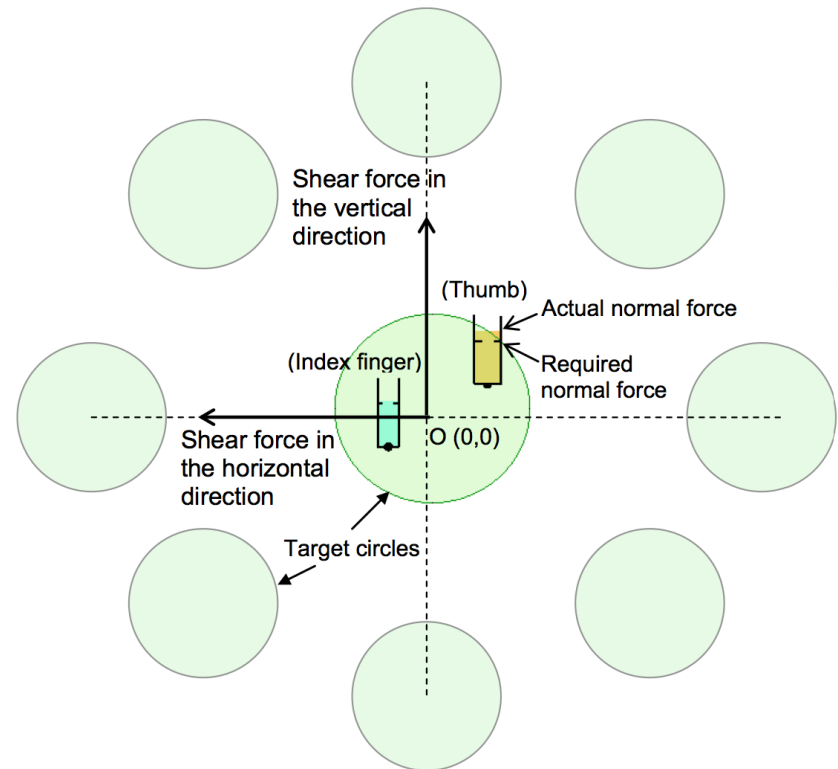
Was it a problem that the post-training evaluation was conducted immediately after the last training session? Does this weaken the authors' conclusions?



Discussion Point #5

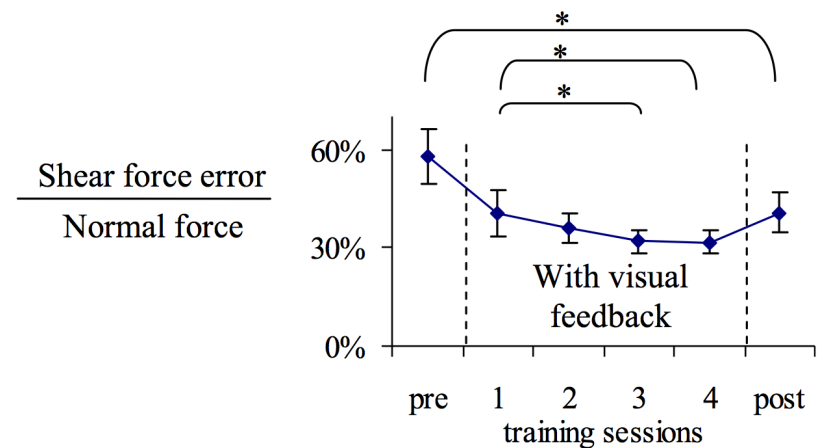
What do you think of the visual feedback?

1. Is there a “bias” toward the representation of normal force?
2. Why focus on precision (i.e., specific target) for shear but not normal force?



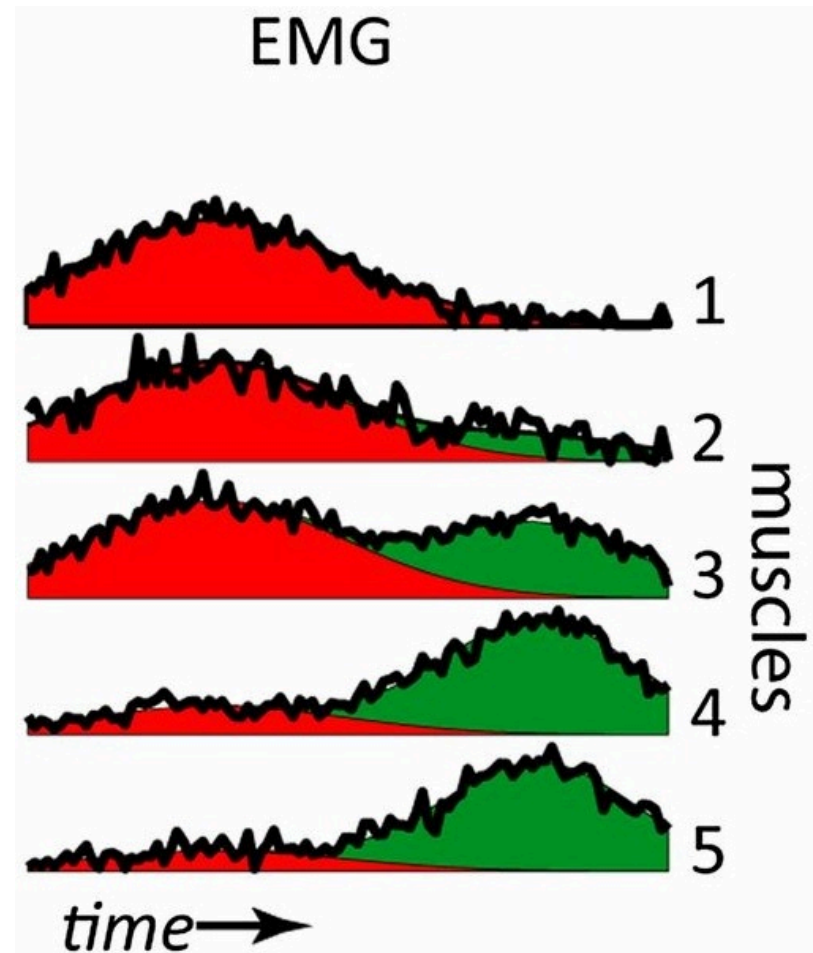
Discussion Point #6

The plot appears to be leveling off at the end of training. Does this suggest some limit on the improvement of stroke patients? Or would healthy patients have performed similarly?



Discussion Point #7

Did the paper “undersell” their findings regarding muscle-activation patterns?



Discussion Points #8, #9, #10 ...