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SPASTICITY AND SURGERY

SPASTICITY

Motor disorder with hyperactivity of the muscles / hypertony

The SPASM Consortium

Assuming that all involuntary activity involves reflexes, spasticity is an intermittent or sustained involuntary hyperactivity of a skeletal muscle associated with an upper motoneuron lesion

SPASTICITY

In upper extremity most often
- Adductors
- Flexors
- Pronator

PRESENTATION

Shoulder	adduction
Elbow	flexion
Wrist	flexion/ pronation
Fingers	variable flexed/ hyperextended (swanneck)
Thumb	adduction / IP flexed

http://www.xeomin.com/consumers/upper-limb-spasticity-adults/

Spasticity is

- Elective
- Elastic
- Variable

Modified Ashworth scale

0 No increase in tone
1 Slight increase in tone giving a catch, release and minimal resistance at the end of range of motion (ROM) when the limb is moved in flexion/extension
1+ Slight increase in tone giving a catch, release and minimal resistance throughout the remainder (less than half) of ROM
2 More marked increased in tone through most of the ROM, but limb is easily moved
3 Considerable increase in tone – passive movement difficult
4 Limb rigid in flexion and extension / Contracture

INDICATIONS FOR SURGERY

functioning vs non functioning

cave neglect

INDICATIONS FOR SURGERY

improvement of

function

hygiene/nursing/cosmesis

INDICATIONS FOR SURGERY

“failed” conservative treatment

- splint
- PT/OT
- Botox

TIMING

no improvement in motor/sensory recovery

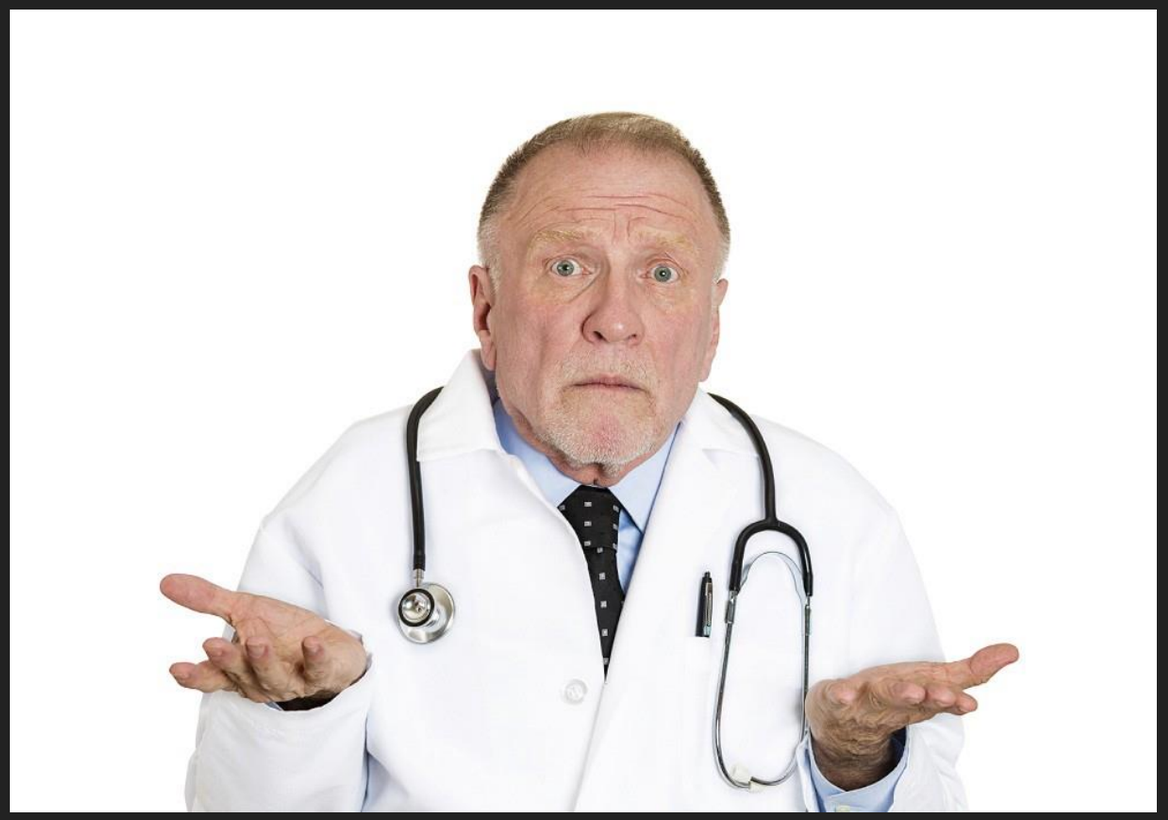
CONTRACTURE VS SPASTICITY

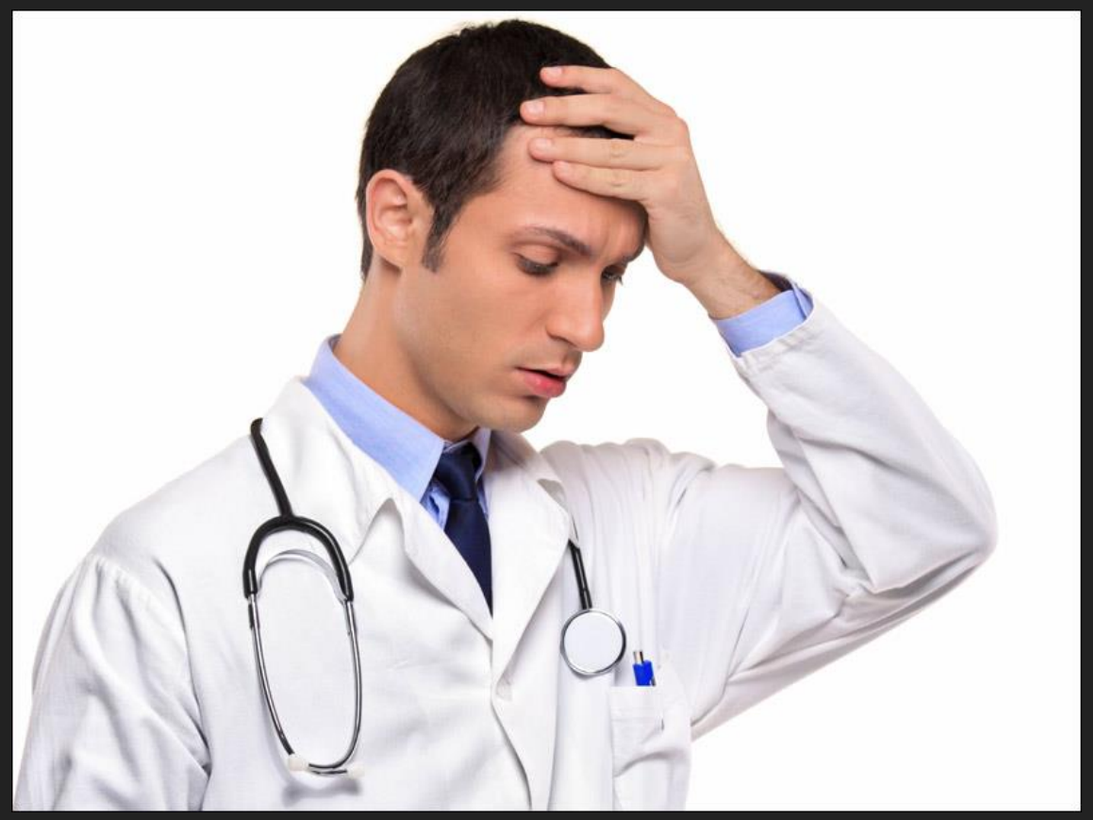
Restore balance
Reduce spasticity
Release contracture
Tendon transfer

CONTRACTURE VS SPASTICITY

Weaken spastic muscles
Strengthen paretic muscles
Stabilize instabile joints

RESTORE BALANCE





REDUCE SPASTICITY

selective neurectomy

2/3 of specific motor nerve branches

LeClerq 2016

N 20 (8 stroke)

HSN 63 muscles

Ashworth scale reduced from 1.9 to 0.4

Patient satisfaction 6.9/10

REDUCE SPASTICITY

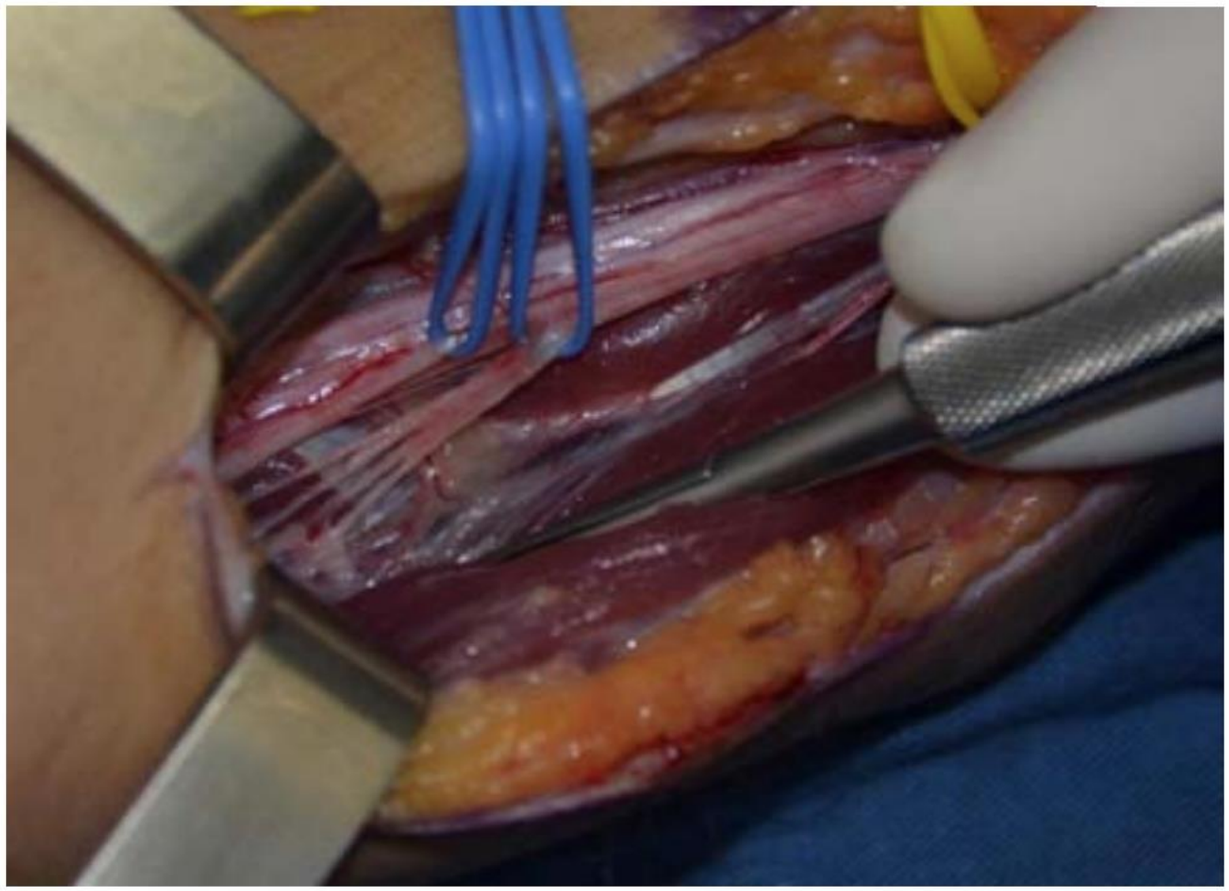


Figure 2: Microdissection of the 4 motor rami to the flexor carpi radialis atr the neuro-muscular junction, immediately before they enter the muscle.

RELEASE OF CONTRACTURE

intrinsic vs extrinsic contracture

detachment of origin

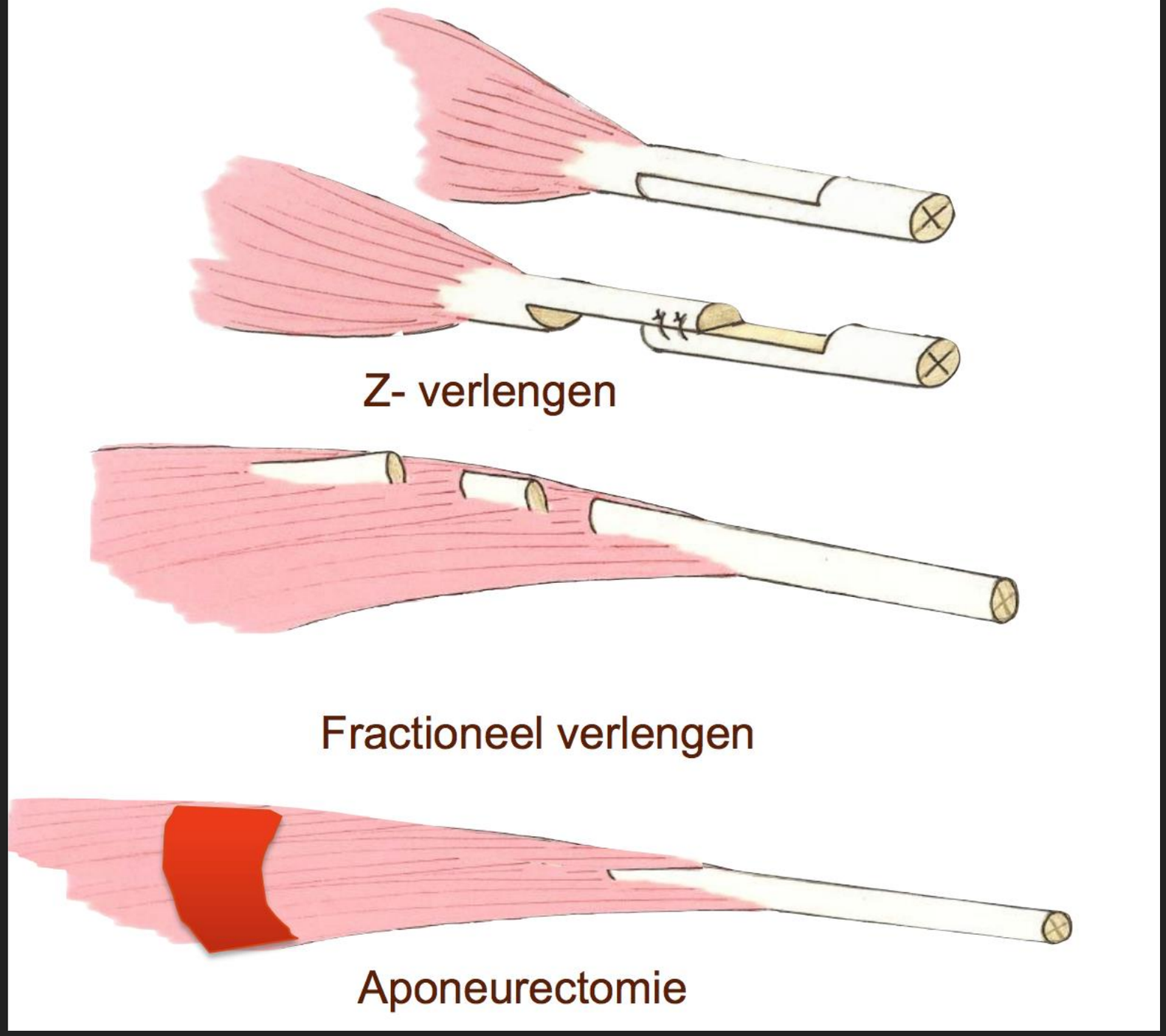
most often flexor of wrist and fingers
medial epicondylar release

tenotomy

for wrist flexors

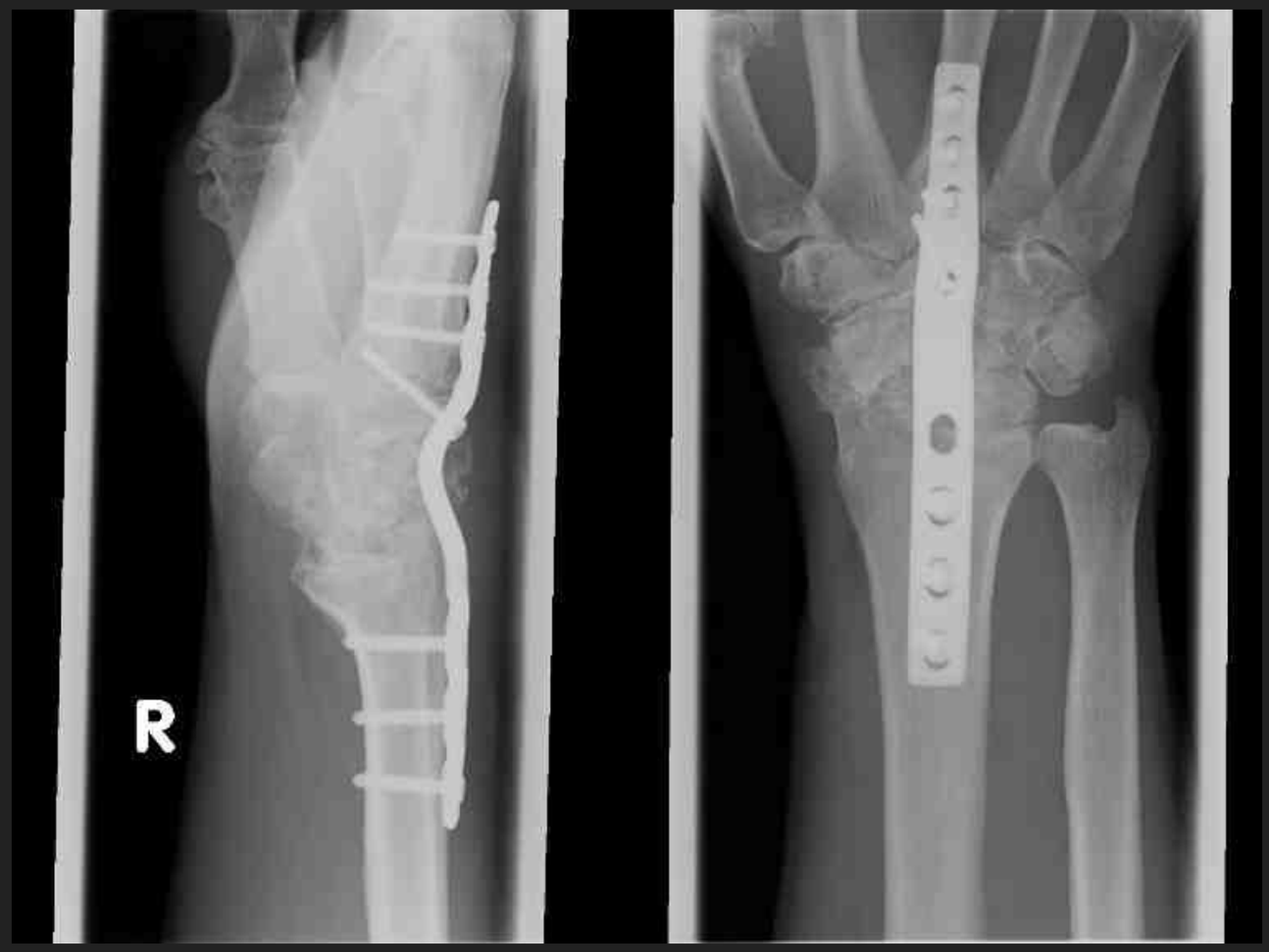
lengthening of the tendons

musculotendon junction / fractional or sliding
in the tendon / z lengthening
sublimus to profundus tendon


Z- verlengen
Fractioneel verlengen
Aponeurectomie

RELEASE OF CONTRACTURE

- Arthrolysis
- Arthrodesis
- Joint stabilisation

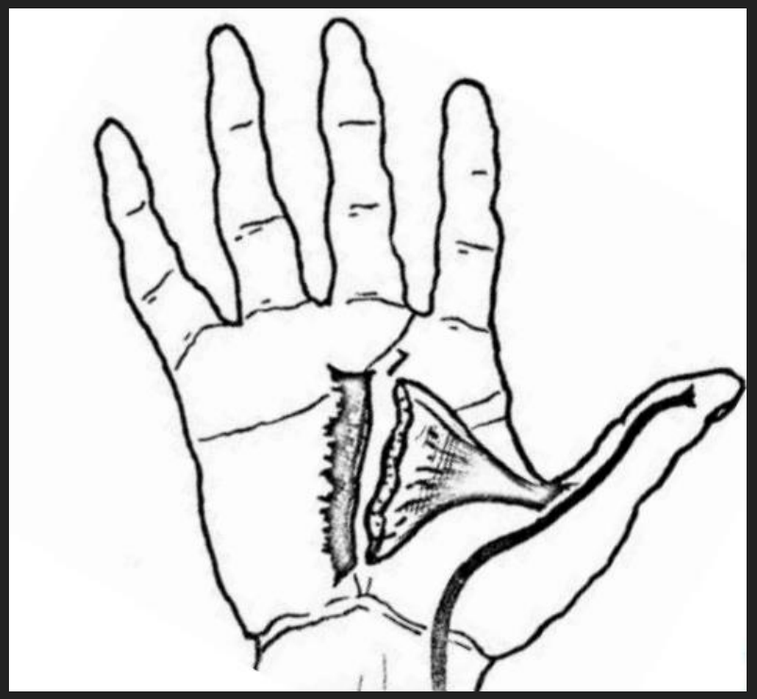


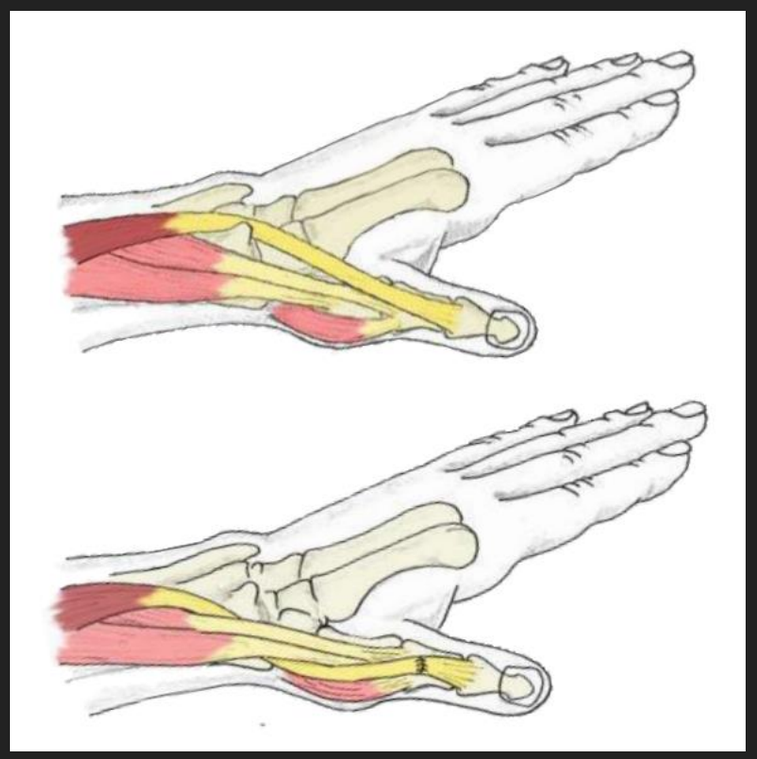
SPECIFIC

Thumb in palm

SPECIFIC

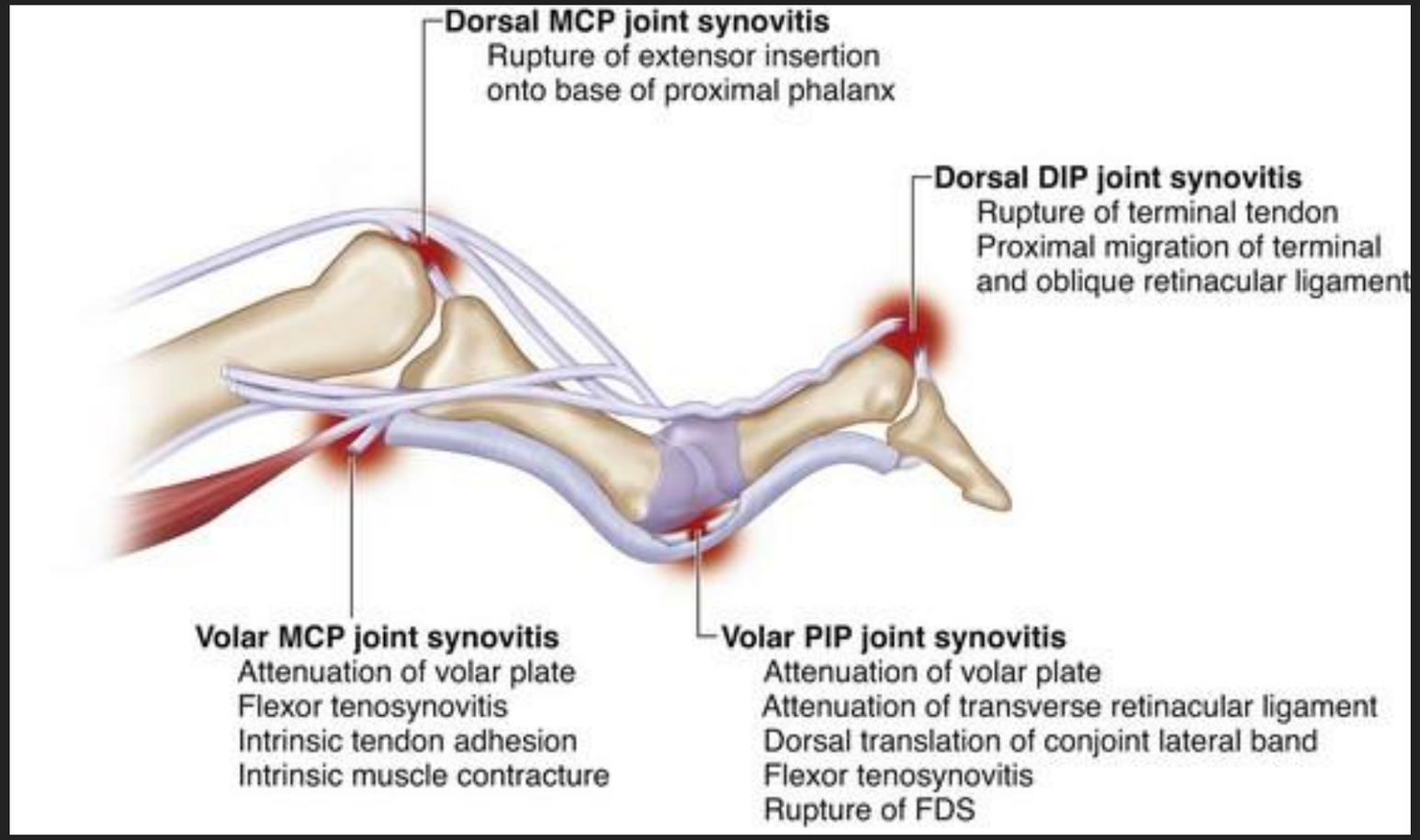
Thumb in palm
- median neurectomy
  - release strength FPB
- Matev Slide
  - release of AP /FPB
- EPL rerouting





SPECIFIC

Swanneck

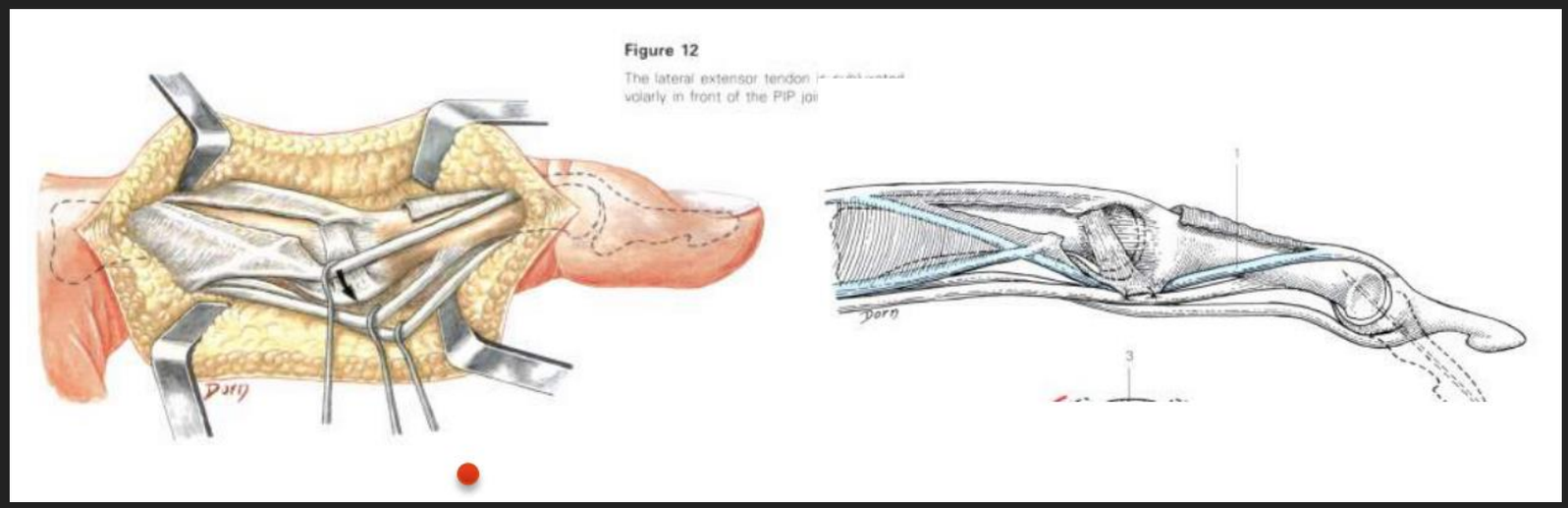


SPECIFIC

Swanneck

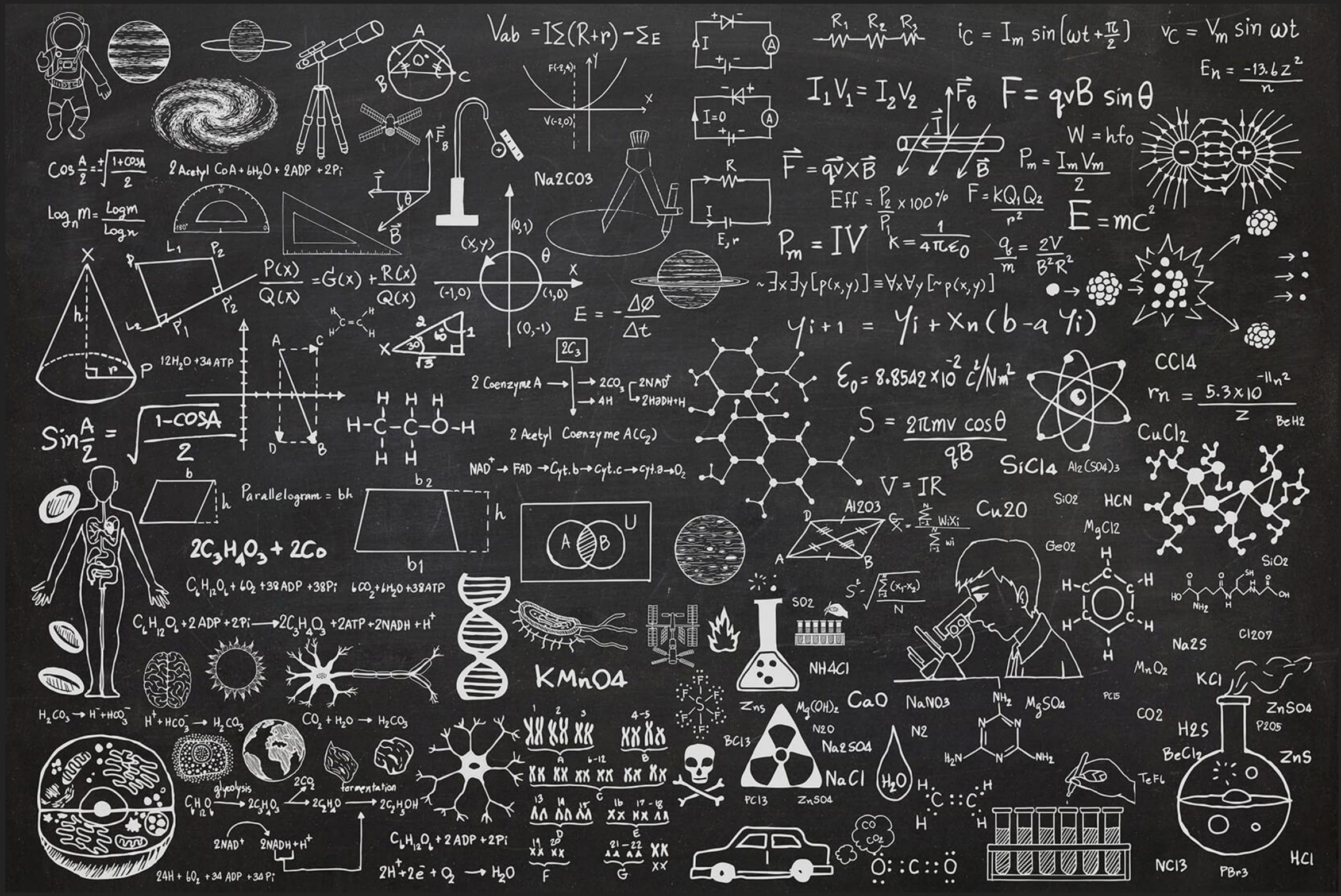
intrinsieke release

lateral slip translocation



SPECIFIC

- Swanneck
  - FDS sliptenodesis
  - Arthrodesis



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