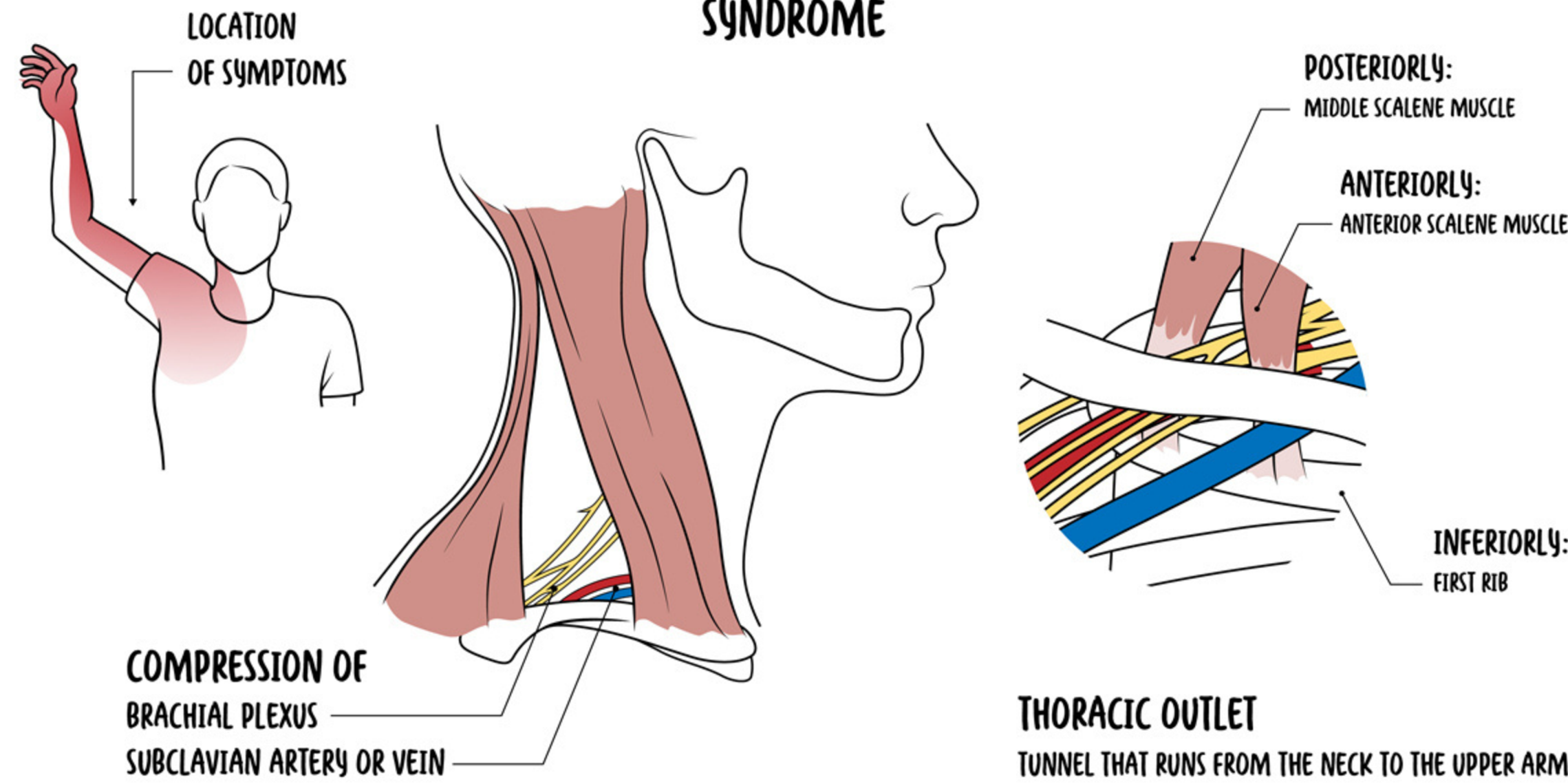
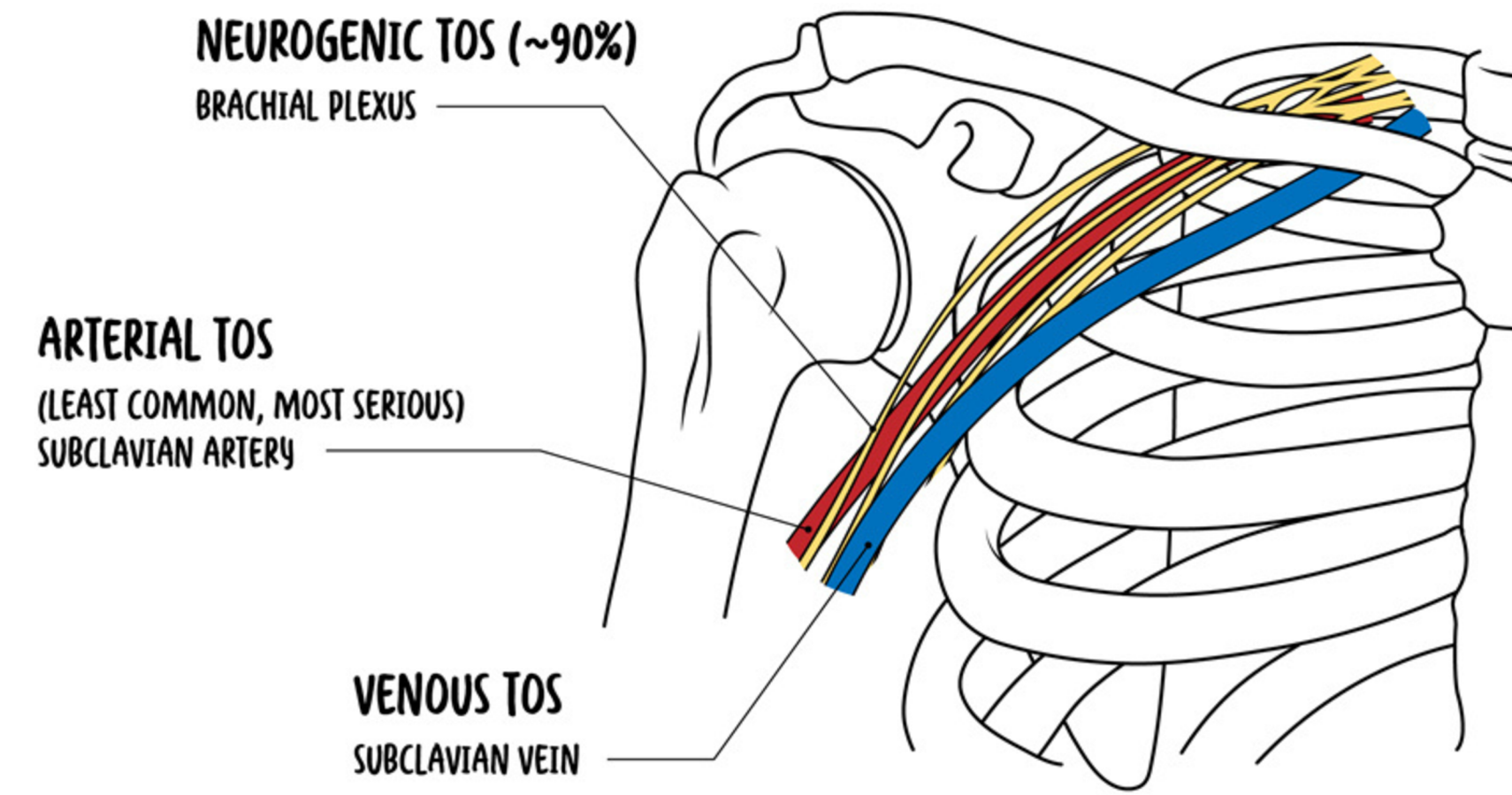


THORACIC OUTLET SYNDROME

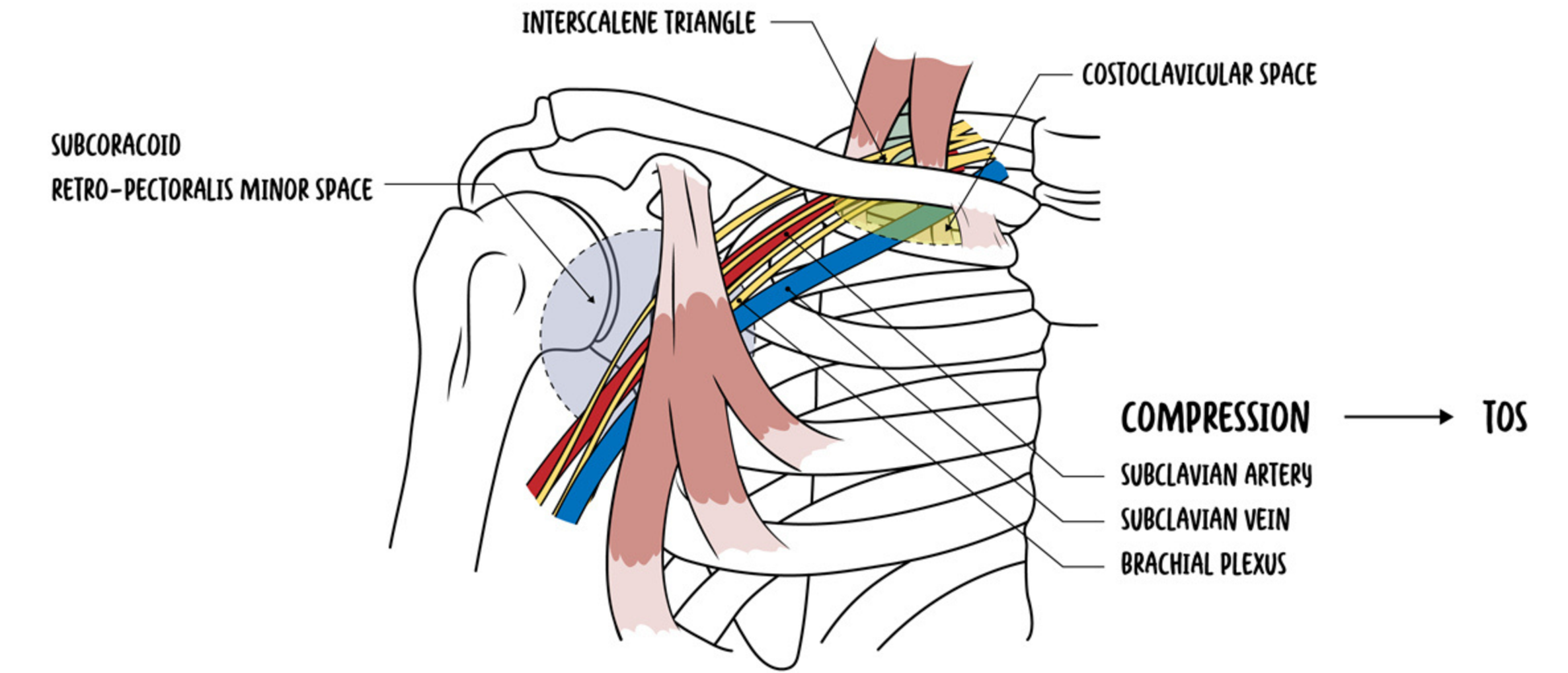


TYPES OF THORACIC OUTLET SYNDROME (TOS)

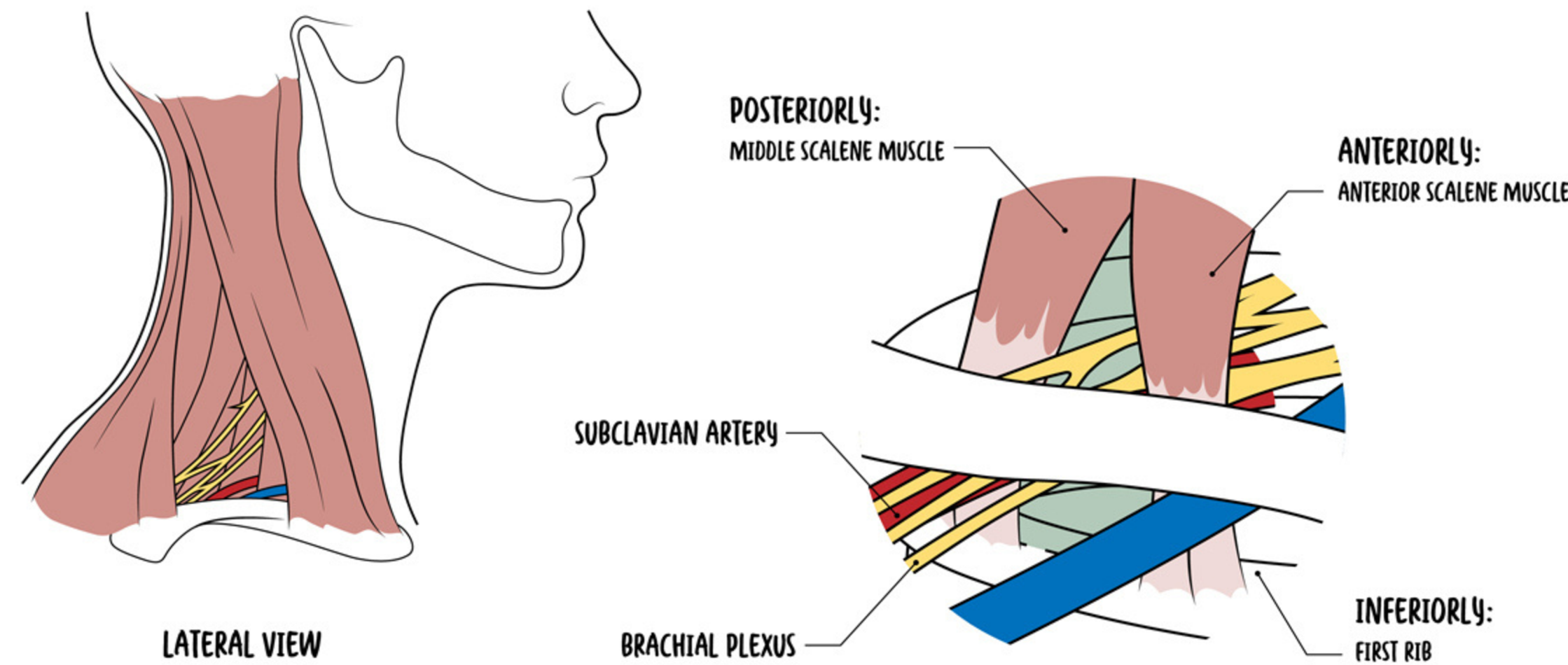
BASED ON THE STRUCTURE THAT IS COMPRESSED



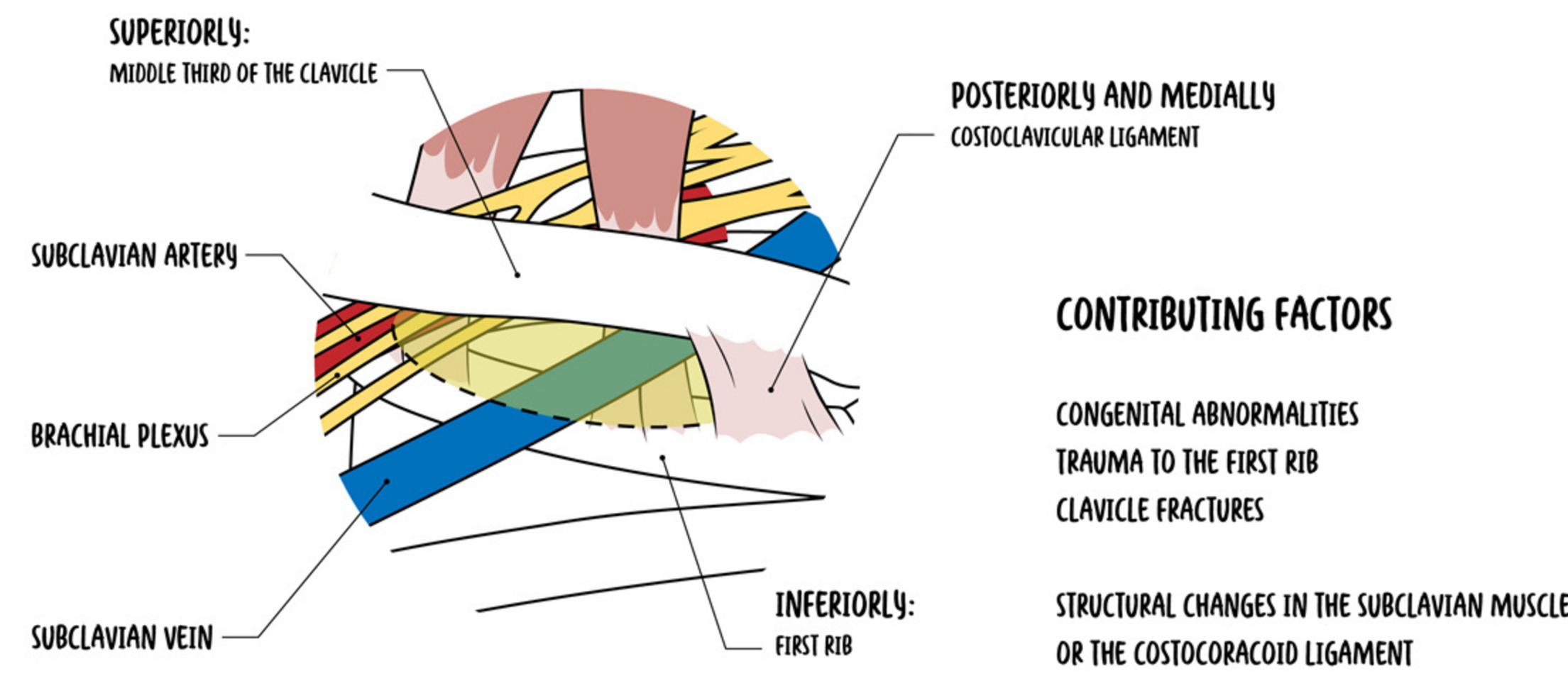
MECHANISM



INTERSCALENE TRIANGLE



COSTOCLAVICULAR SPACE

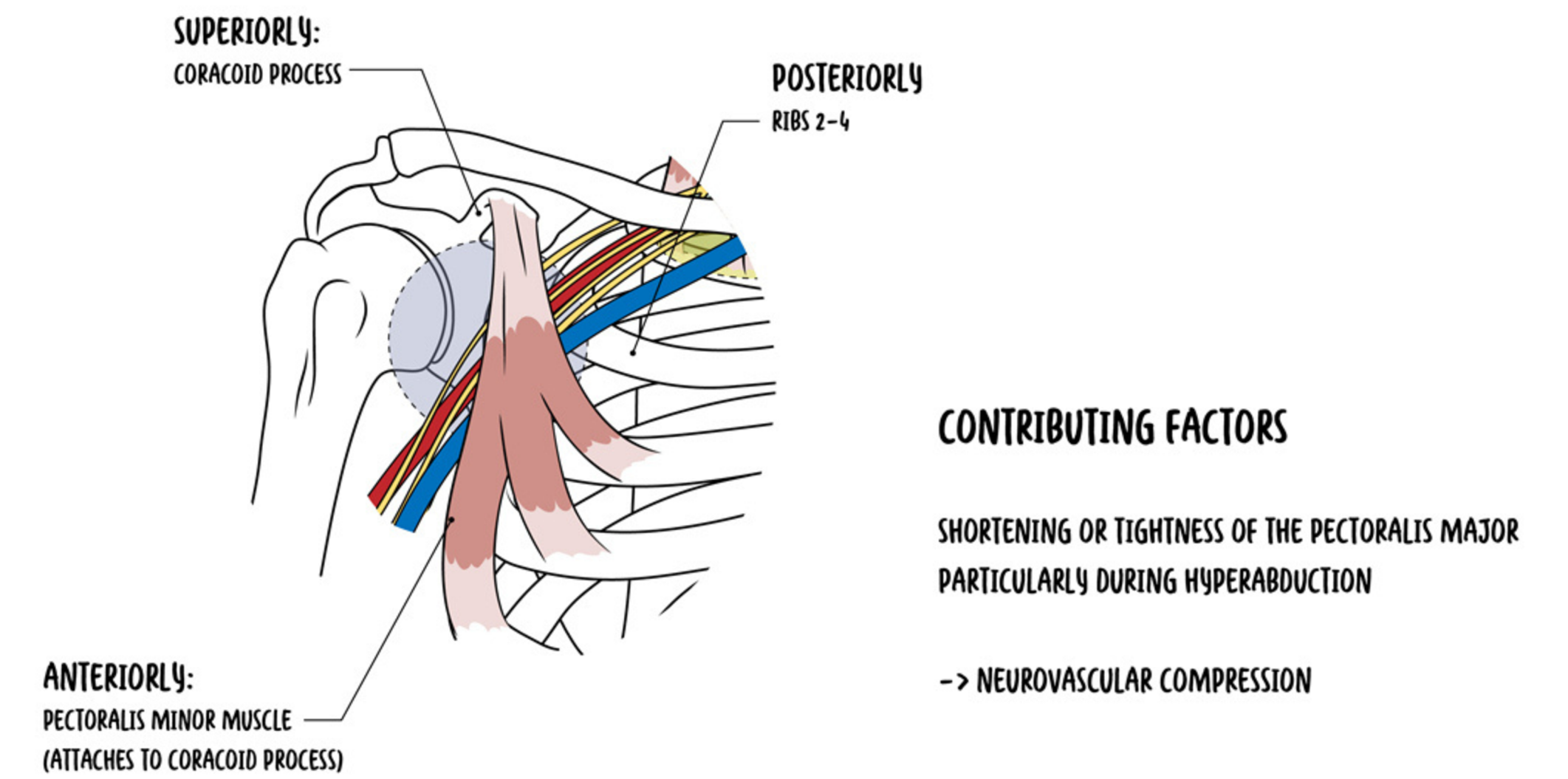


CONTRIBUTING FACTORS

CONGENITAL ABNORMALITIES
TRAUMA TO THE FIRST RIB
CLAVICLE FRACTURES

STRUCTURAL CHANGES IN THE SUBCLAVIAN MUSCLE
OR THE COSTOCORACOID LIGAMENT

SUBCORACOID/ RETRO-PECTORALIS MINOR SPACE

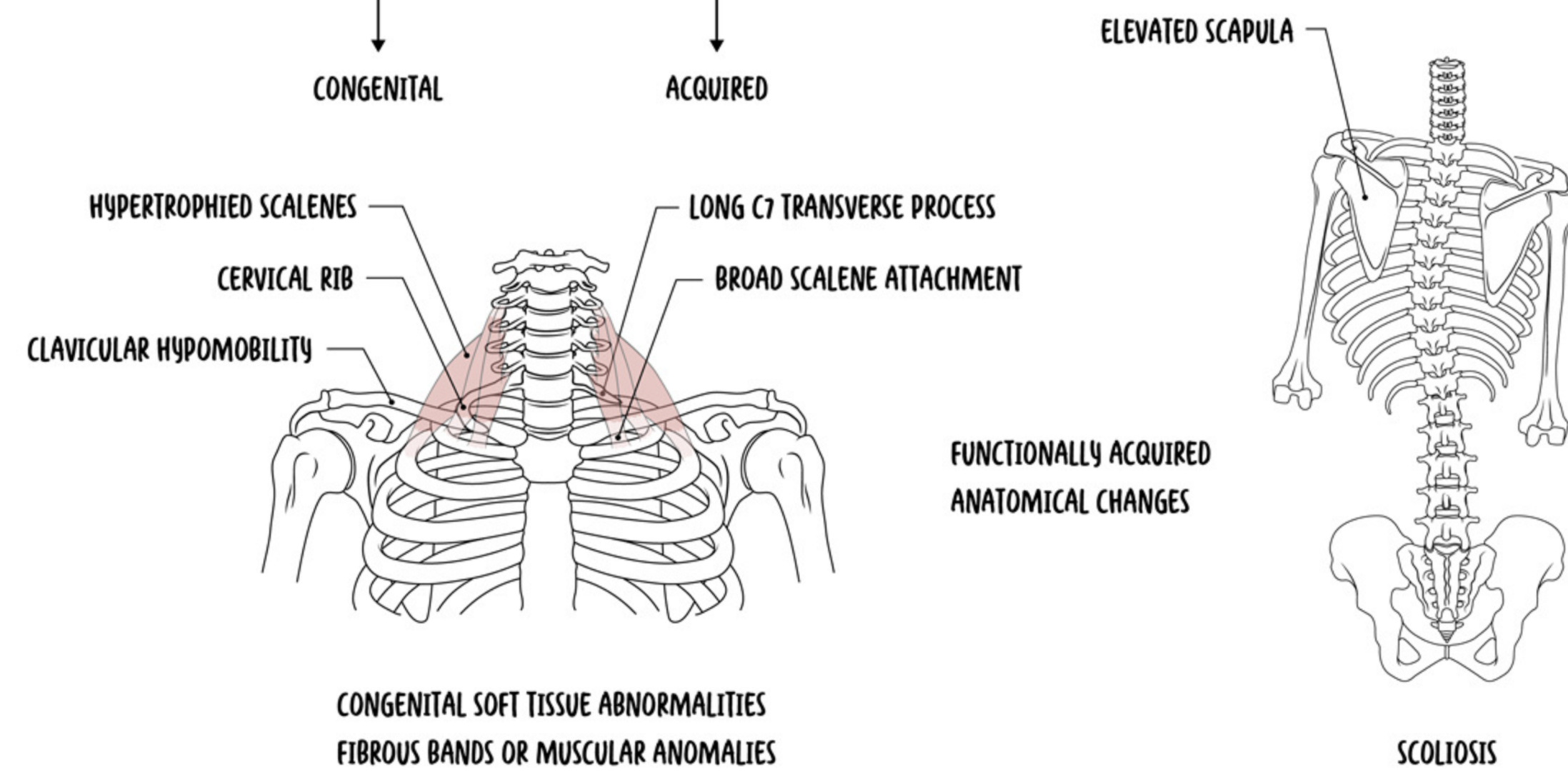


CONTRIBUTING FACTORS

SHORTENING OR TIGHTNESS OF THE PECTORALIS MAJOR
PARTICULARLY DURING HYPERABDUCTION

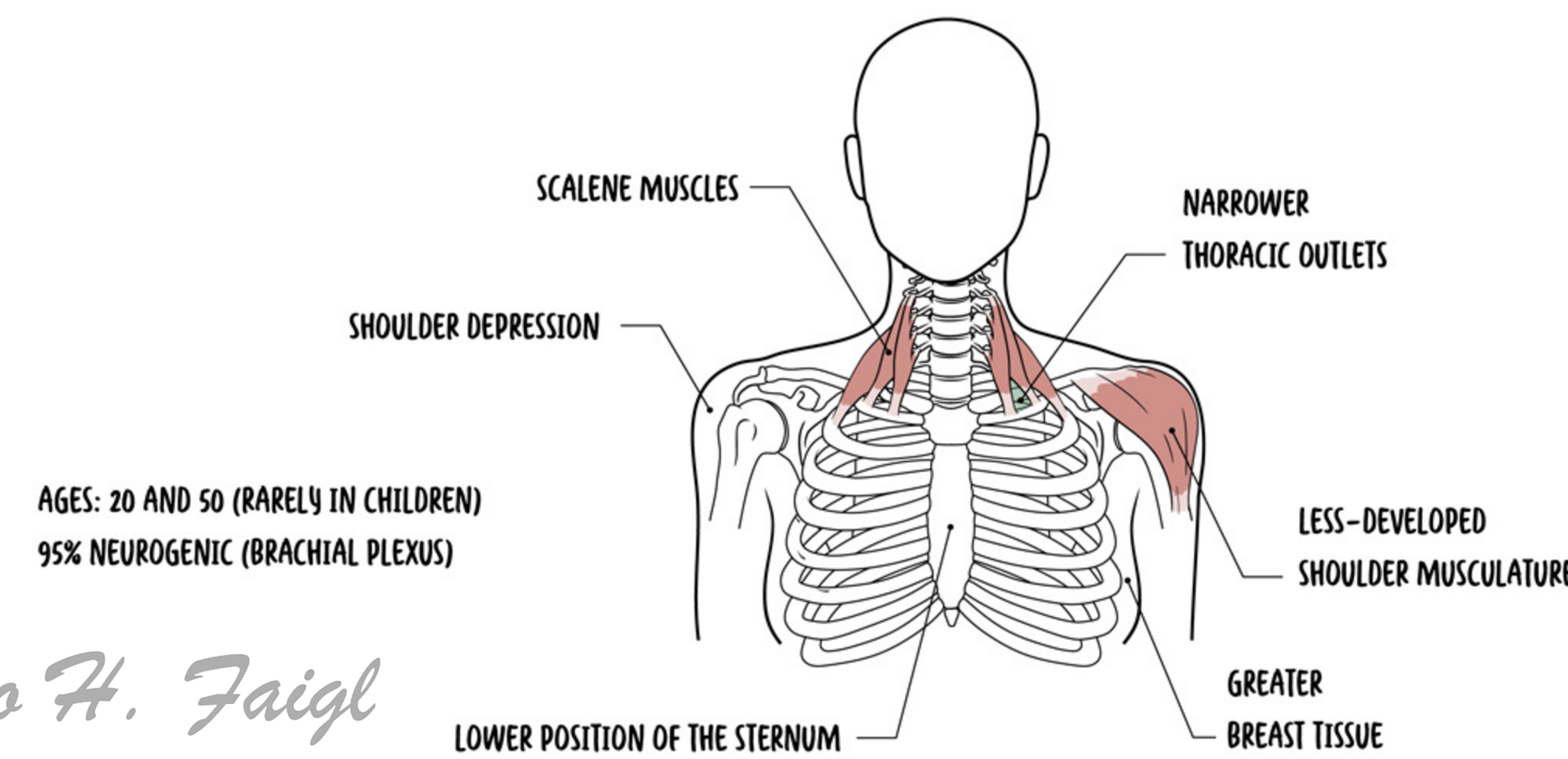
→ NEUROVASCULAR COMPRESSION

OTHER CONTRIBUTING FACTORS



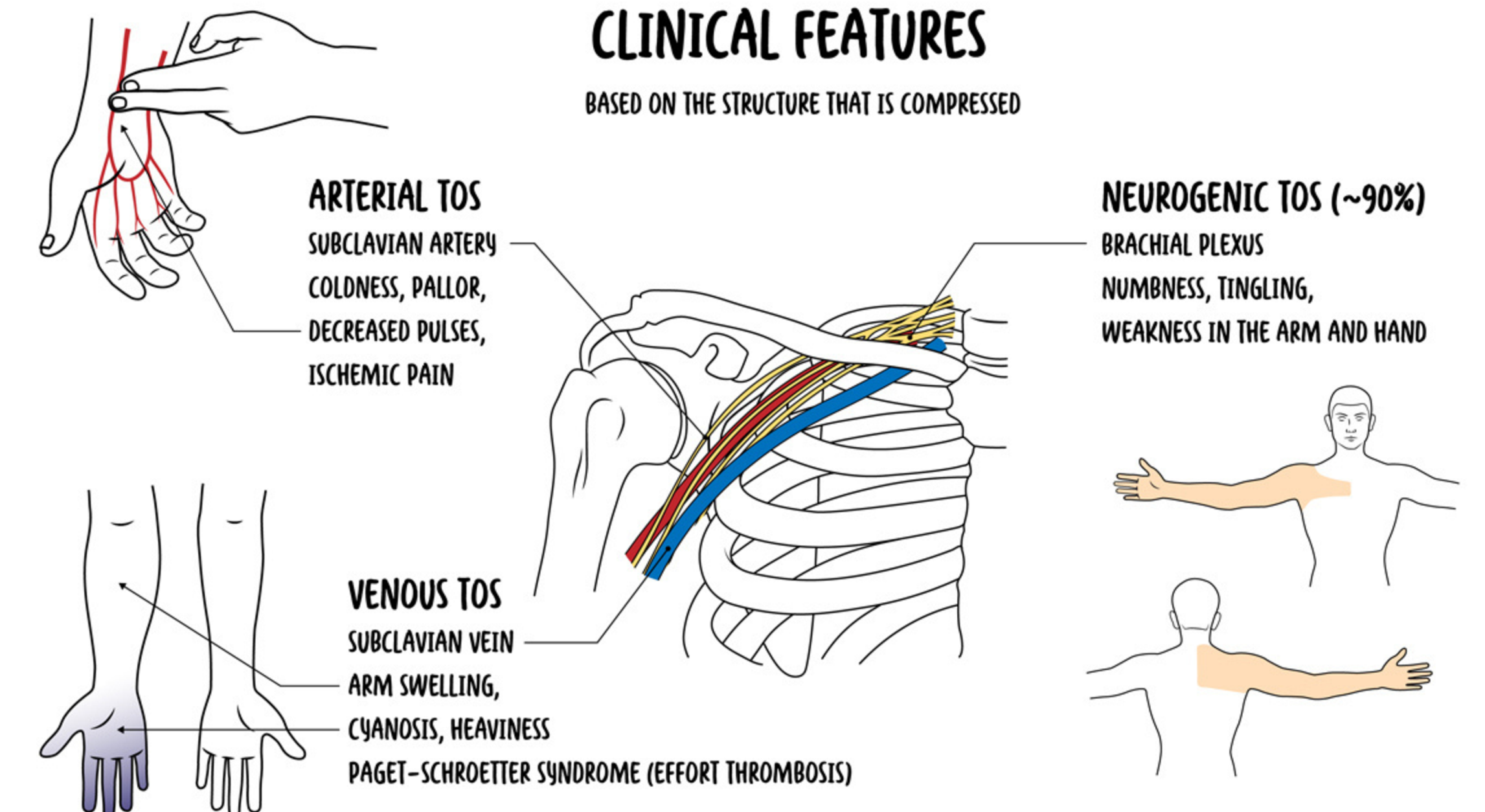
EPIDEMIOLOGY

MORE COMMON IN WOMEN



CLINICAL FEATURES

BASED ON THE STRUCTURE THAT IS COMPRESSED



Armando H. Faigl

EXAMINATION

INSPECTION, MUSCLE POWER AND NEUROLOGICAL EXAMINATION

SPECIAL TESTS

MAY SUPPORT CLINICAL SUSPICION WHEN POSITIVE

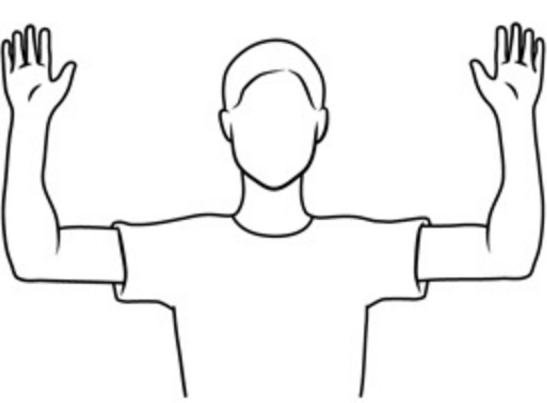
ADSON'S TEST

HEAD TURNED TO THE AFFECTED SIDE



ROOS TEST

ELEVATED ARM STRESS TEST



OPEN AND CLOSE HANDS REPEATEDLY 3 MIN
90° ABDUCTION
EXTERNAL ROTATION
SYMPTOMS RECUR IN TOS

MANAGEMENT

CONSERVATIVE (FIRST-LINE)

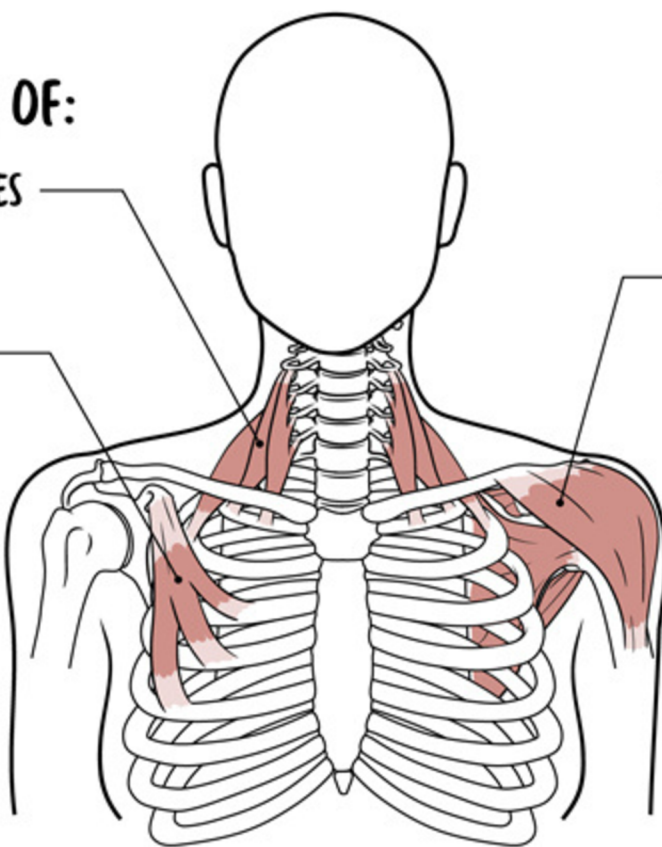
STRETCHING OF:

SCALENE MUSCLES

STRENGTHENING OF:

SHOULDER GIRDLE MUSCLES

PECTORALIS MINOR

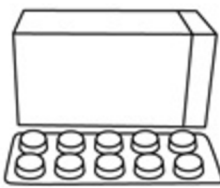


PHYSICAL THERAPY:

POSTURE CORRECTION

PAIN CONTROL:

NSAIDS
MUSCLE RELAXANTS



LIFESTYLE MODIFICATIONS:

AVOID OVERHEAD ACTIVITIES, HEAVY LIFTING
ERGONOMIC ADJUSTMENTS
WEIGHT LOSS

EXAMINATION

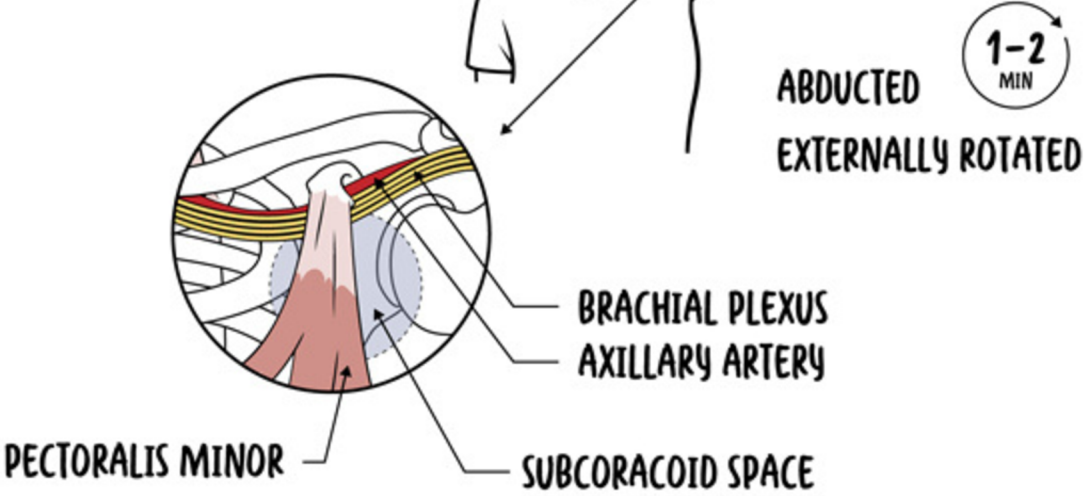
INSPECTION, MUSCLE POWER AND NEUROLOGICAL EXAMINATION

SPECIAL TESTS

MAY SUPPORT CLINICAL SUSPICION WHEN POSITIVE

WRIGHT'S TEST

(HYPERABDUCTION TEST)



EDEN'S TEST

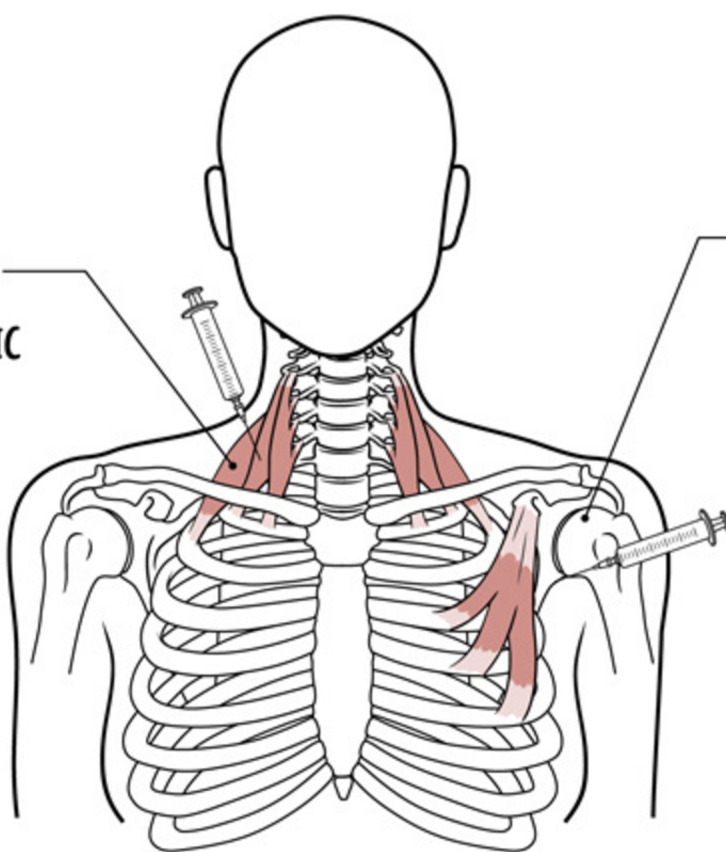
(MILITARY BRACE TEST)



MANAGEMENT

INTERVENTIONAL OPTIONS

SCALENE MUSCLE BLOCKS
CAN BE DIAGNOSTIC AND THERAPEUTIC



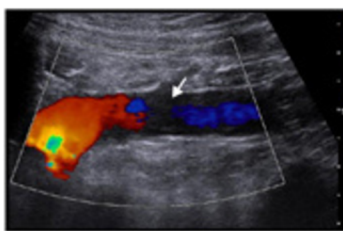
BOTULINUM TOXIN INJECTIONS:
INTO SCALENE OR PECTORALIS MINOR
PROVIDES TEMPORARY SYMPTOM RELIEF

Armando H. Faigl

INVESTIGATIONS

NERVE CONDUCTION STUDIES (NCS) & EMG:

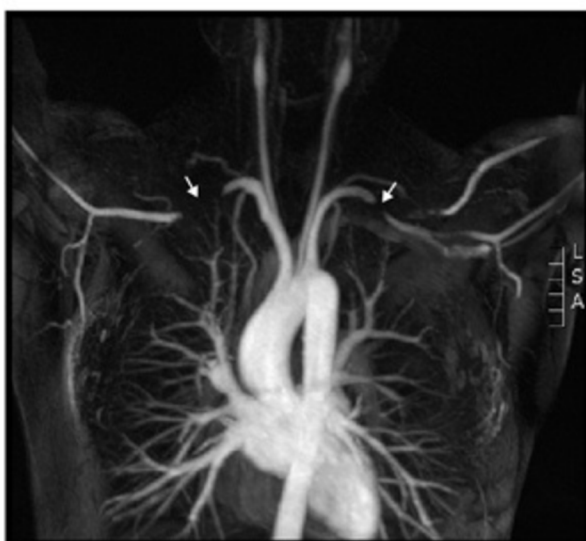
NEUROGENIC TOS, SHOW ULNAR SENSORY AND MOTOR RESPONSE



DOPPLER ULTRASOUND:

DETECTS DYNAMIC VASCULAR COMPRESSION

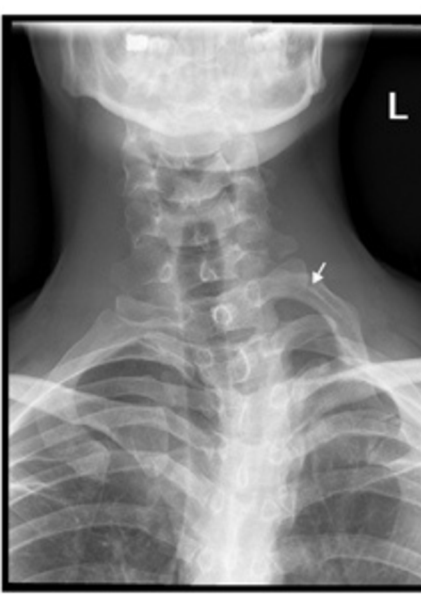
MARTINEZ L, PAGET-SCHROETTER SYNDROME. CASE STUDY, RADIOPAEDIA.ORG



MRI/MRA:

VISUALIZES SOFT TISSUE STRUCTURES
(SCALENE MUSCLES, BRACHIAL PLEXUS)
ASSESSES VASCULAR COMPRESSION

FASCIA D, THORACIC OUTLET SYNDROME - ARTERIAL
CASE STUDY, RADIOPAEDIA.ORG



CHEST X-RAY:

CERVICAL RIB OR
OTHER BONY ANOMALIES

GERSTENMAIER J, THORACIC OUTLET SYNDROME
CASE STUDY, RADIOPAEDIA.ORG



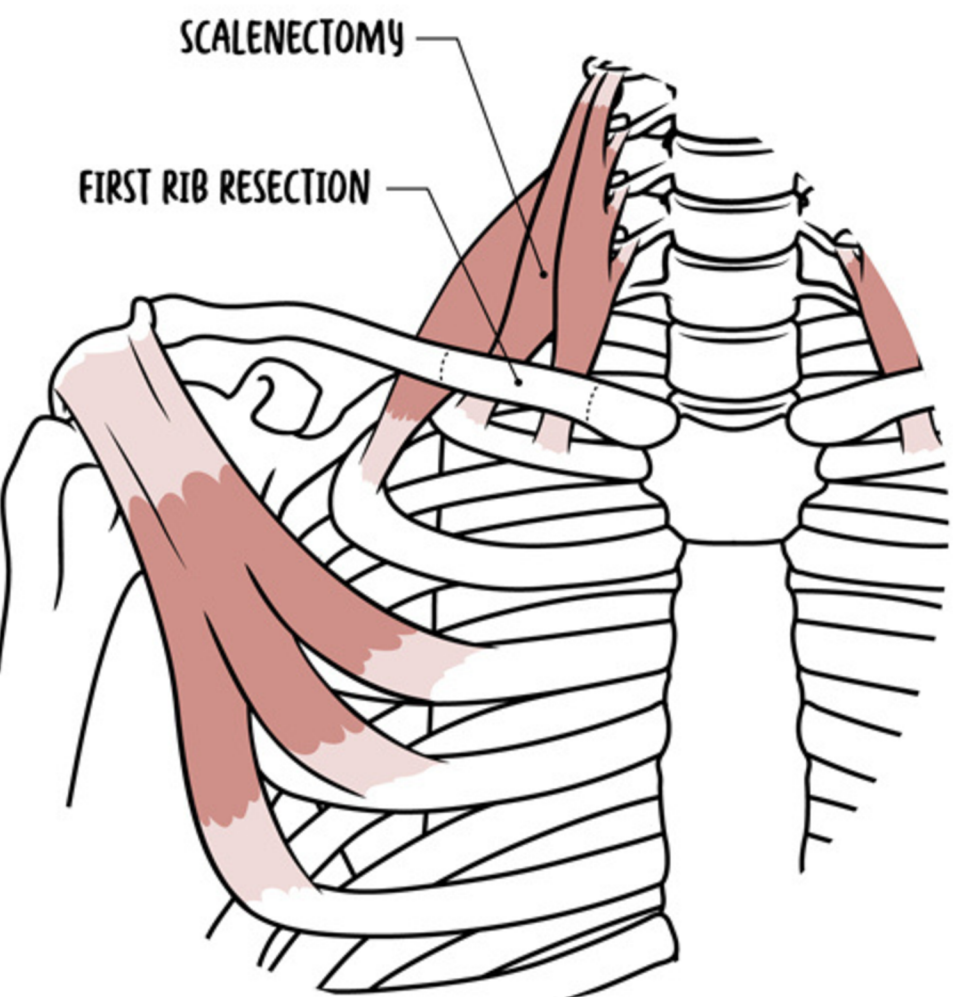
CT ANGIOGRAPHY:

ARTERIAL OR VENOUS OBSTRUCTION
ARTERIAL TOS

HACKING C, ARTERIAL THORACIC OUTLET SYNDROME
CASE STUDY, RADIOPAEDIA.ORG

MANAGEMENT

SURGERY



THORACIC OUTLET SYNDROME



PROGRESSIVE NEUROLOGIC WEAKNESS



SURGICAL DECOMPRESSION