

## INTERMEDIATE EXERCISES FOR THE SCAPULA PRACTITIONER NOTES

### Summary of Martin and Fish's review of neurogenic causes of winging:

Winging	Observation	Neurogenic causes
<p><b>Medial winging</b></p> <p>Medial border of scapula lifts off thoracic wall</p> <p>and/or</p> <p>Entire scapula is displaced more medially and superiorly due to unopposed muscle contraction of other scapula muscles</p>	<p>Can be observed at rest</p> <p>Arm flexion</p> <p>Push-up motion against wall</p> <p>Inability to abduct arms beyond 110 degrees (complete serratus anterior paralysis)</p>	<p>Injury to long thoracic nerve (supplies serratus anterior)</p> <p>Serratus anterior muscle palsy</p> <p>Injury to spinal accessory nerve (supplies trapezius)</p> <p>Trapezius muscle palsy – rare</p> <p>Trapezius muscle rupture – rare</p> <p>Injury to the dorsal scapula nerve (supplies the rhomboid muscles) – very rare</p> <p>Rhomboid muscle rupture – rare</p>
<p><b>Lateral winging (trapezius)</b></p> <p>Scapula is translated laterally along the posterior thoracic wall due to unopposed muscle contraction of other scapula muscles</p> <p>Superior angle of scapula is more laterally displaced. Drooping of the affected shoulder</p>	<p>Winging is minimal at rest</p> <p>Arm abduction and external rotation against resistance</p> <p>Limitations in overhead activities</p>	<p>Injury to spinal accessory nerve (supplies trapezius)</p> <p>Trapezius muscle palsy</p>
<p><b>Lateral winging (rhomboids)</b></p> <p>Scapula laterally translated and the inferior angle rotated laterally due to unopposed muscle contraction of other scapula muscles</p>	<p>Arm extension from full flexion</p> <p>Difficulties bringing scapulas together medially</p>	<p>Injury to the dorsal scapula nerve (supplies the rhomboid muscles)</p>