

User Guide for the Enhanced E-book – 1

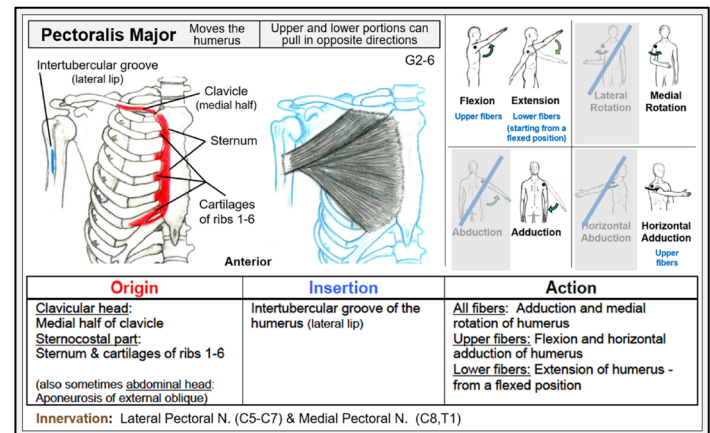
This E-book version of **Mastering Muscles & Movement** uses a fixed-page format that exactly matches the printed book. This retains the page layouts that make the printed book **brain-friendly** and easy to learn from.

In addition, the features below have been added to enhance the use of the book on a tablet or computer. **These features are not in the printed book.**

Appendix 1

Muscle Detail Cards

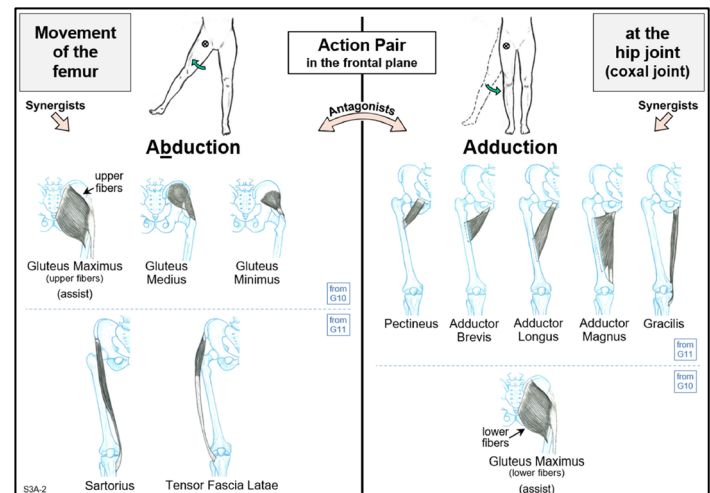
This 175-page Appendix contains one-muscle-per-page “cards” that gather all pertinent information for an individual muscle. These Muscle Detail Cards are connected to the “A” Tables in Chapters 4, 5 and 6. See page x for more information.



Appendix 2

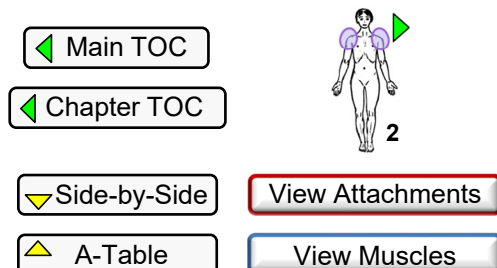
Action Pair Cards

This 75-page Appendix has been added to facilitate studying how muscles work with each other and oppose each other (synergists & antagonists). These Action Pair Cards are linked to the “B” Tables in Chapters 4, 5 and 6. See page xi for more information.



Navigation

Several buttons and links have been added to facilitate easy navigation to different parts of the book. These allow a reading experience that is more closely aligned with the way a learner would study using the physical book. See pages xii-xvi for more information.












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“A” Table pages are linked to Appendix 1 – Muscle Detail Cards

A-Tables (muscle origins, insertions, and actions) in the main text are linked to full-page **Muscle Detail Cards** in Appendix 1. Each “card” gathers and enlarges all the details for an individual muscle.

Click a muscle picture to view its Muscle Detail Card

Group 2: Muscles Acting On

Shoulder Joint	Origin	Insertion	Action
 Deltoid moves the humerus	Lateral clavicle, Acromion of scapula, Spine of scapula	Deltoid tuberosity of humerus	All / middle fibers: Abduction of humerus at the GH joint Anterior fibers: Flexion, medial rotation, and horizontal adduction Posterior fibers: Extension, lateral rotation, and horizontal abduction
 Supraspinatus moves the humerus	Supraspinous fossa of scapula	Greater tubercle of humerus (superior aspect)	Abduction of humerus at the GH joint. Stabilizes the humerus in the glenoid fossa
 Infraspinatus moves the humerus	Infraspinous fossa of scapula	Greater tubercle of humerus (posterior aspect)	Lateral rotation of humerus at the GH joint. Stabilizes the humerus in the glenoid fossa
 Teres Minor moves the humerus	Lateral/axillary border of the scapula	Greater tubercle of humerus (posterior aspect, inferior to infraspinatus tendon)	Lateral rotation of humerus at the GH joint. Stabilizes the humerus in the glenoid fossa
 Subscapularis moves the humerus	Subscapular fossa of scapula	Lesser tubercle of humerus (on anterior humerus)	Medial rotation of humerus at the GH joint. Stabilizes the humerus in the glenoid fossa
 Pectoralis Major moves the humerus	Clavicular head: Medial half of clavicle Sternocostal part: Sternum & cartilages of ribs 1-6 (also sometimes <u>abdominal head</u> : Aponeurosis of external oblique)	Intertubercular groove of the humerus (lateral lip)	All fibers: Adduction and medial rotation of humerus Upper fibers: Flexion and horizontal adduction of humerus Lower fibers: Extension of humerus - from a flexed position
 Coracobrachialis moves the humerus	Coracoid process of scapula	Shaft of humerus -- on the medial side half way down	Flexion and adduction of the humerus at the GH joint (also assists horizontal adduction)
 Latissimus Dorsi moves the humerus and the trunk & spine	Spinous processes of lower 6 thoracic and all lumbar vertebrae, sacrum, posterior iliac crest, lumbar fascia, lower 3 or 4 ribs (and sometimes the tip of the inferior angle of the scapula).	Intertubercular groove of the humerus (medial lip)	Extension, adduction, and medial rotation of the humerus at the GH joint. Also affects lower trunk & spine: UL: lateral flexion, BL: extension of spine & anterior pelvic tilt
 Teres Major moves the humerus	Inferior angle and lower lateral border of scapula (dorsal side)	Intertubercular groove of the humerus (medial lip)	Extension, adduction, and medial rotation of the humerus at the GH joint.

(MMM page 86)

Click on a muscle

Book will jump to muscle's **Detail Card** in Appendix 1.

back to Table 2 (A)

Click the “back to” button to return to the A-Table

Shoulder Joint

Pectoralis Major

Moves the humerus

Upper and lower portions can pull in opposite directions

G2-6

Intertubercular groove (lateral lip)

Clavicle (medial half)

Sternum

Cartilages of ribs 1-6

Anterior

Flexion
Upper fibers

Extension
Lower fibers (starting from a flexed position)

Lateral Rotation
All fibers

Medial Rotation
All fibers

Abduction
All fibers

Adduction
All fibers

Horizontal Abduction
Upper fibers

Horizontal Adduction
Upper fibers

Appendix 1
TOC

Origin	Insertion	Action
Clavicular head: Medial half of clavicle Sternocostal part: Sternum & cartilages of ribs 1-6 (also sometimes <u>abdominal head</u> : Aponeurosis of external oblique)	Intertubercular groove of the humerus (lateral lip)	All fibers: Adduction and medial rotation of humerus Upper fibers: Flexion and horizontal adduction of humerus Lower fibers: Extension of humerus - from a flexed position

Innervation: Lateral Pectoral N. (C5-C7) & Medial Pectoral N. (C8,T1)

Details from Table 2 (A) - Shoulder Joint

Appendix 1 can be used as a Stand-alone Muscle Atlas

For stand-alone mode, use the Muscle Group **Table of Contents** on page 232.

Or use the **Alphabetical Index of Muscles** on pages 407-408.

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“B” Table pages are linked to Appendix 2 – Action Pair Cards

B-Tables show the synergists and antagonists for all of the actions available to a Muscle Group. The B-Tables in the main text are linked to full-page **Action Pair Cards** in Appendix 2 that graphically display the information.

Click an Action picture to view **all** of its synergists & antagonists

Group 10: Hip joint (coxal joint) - femur seated in acetabulum of the hip bone (coxal bone). ✓ - Muscle creates the action, N - Nerve

Muscles Acting On Hip Joint (Part 1)	Flexion @ Hip jt.	Extension @ Hip jt.	Abduction @ Hip jt.	Adduction @ Hip jt.	Medial Rotation @ Hip jt.	Lateral Rotation @ Hip jt.	Stabilization of Hip jt.	Other	Innervation	L2	L3	L4	L5	S1	S2
1. Gluteus Maximus		✓ assist (upper fibers)		✓ assist (lower fibers)		✓			Inferior gluteal N. (L5, S1, S2)					N	N
2. Gluteus Medius	✓ assist (anterior fibers)	✓ assist (posterior fibers)	✓ (all fibers)		✓ assist (anterior fibers)	✓ assist (post. fibers) when hip is extended	✓ (main hip stabilizer)	This is the primary abductor	Superior gluteal N. (L4, L5, S1)					N	N
3. Gluteus Minimus	✓ may assist		✓		✓		✓		Superior gluteal N. (L4, L5, S1)					N	N
4. Piriformis						✓			Sacral Plexus (S1, S2)						N
5. The Other 5 Deep Lateral Rotators Gemellus Superior Obturator Internus Gemellus Inferior Obturator Externus Quadratus Femoris						✓			OS: SP-L5, S1, 2 OI: SP-L4, S1, 2 GE: SP-L4, S1, 2 OI: SP-L4, S1, 2 OI: SP-L4, S1, 2 OI: SP-L4, S1, 2 (SP=Sacral Plexus)					N	N
6. Iliopsoas						✓ may assist		Reverse OI (femur fixed) increases lumbar lordosis, ant. pelvic tilt	Iliacus: Femoral N. (L2, L3) Psoas Major: Lumbar plexus (L2-L4)					N	N
7. Psoas Major	✓														

(More muscles for the action) → see also Groups 11, 12

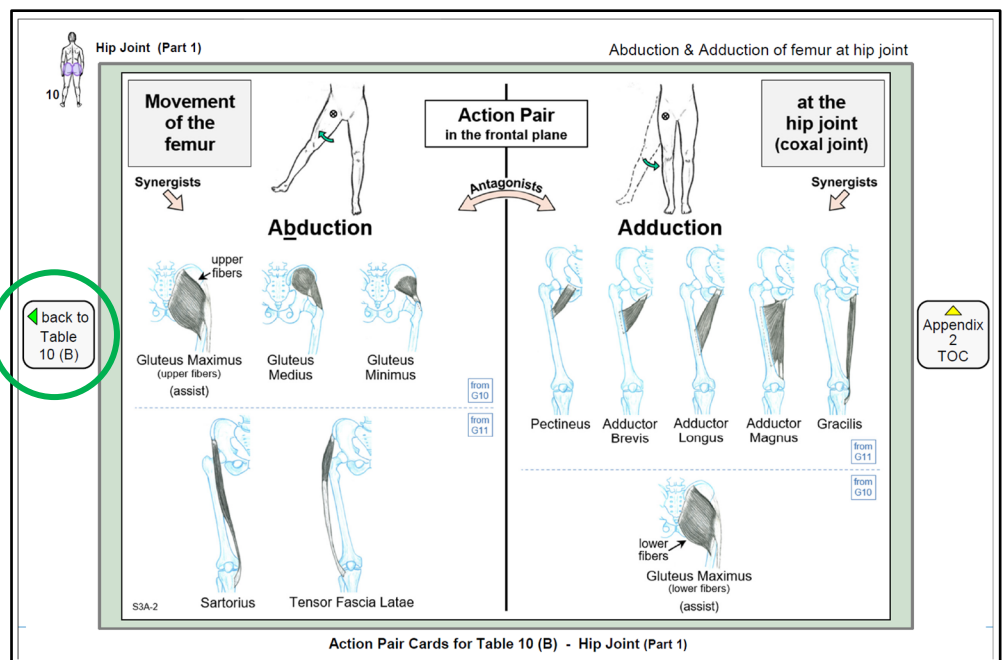
(MMM page 172)

Book will jump to the **Action Pair Card** in Appendix 2.

Click on an action picture

back to Table 10 (B)

Click the “back to” button to return to the B-Table



Appendix 2 can be used Stand-alone to study Synergists & Antagonists

For stand-alone mode, use the

Appendix 2 – Action Pair Cards - Table of Contents on page 410.

User Guide for the Enhanced E-book – 4

Navigation

Several buttons and links have been added to facilitate easy navigation to different parts of the book. These allow a reading experience that is more closely aligned with the way a learner would study using the physical book.

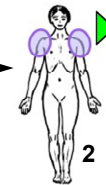
Main TOC (Table of Contents):

Click on a **blue chapter line** ► to jump to that chapter.

Chapter TOC (Table of Contents page at start of each chapter):

Chapters 1-3 and 7-8: Click on a **blue section line** ► to go to that section.

Chapters 4-6: Click on a Muscle Group icon to jump to the section for that group. →



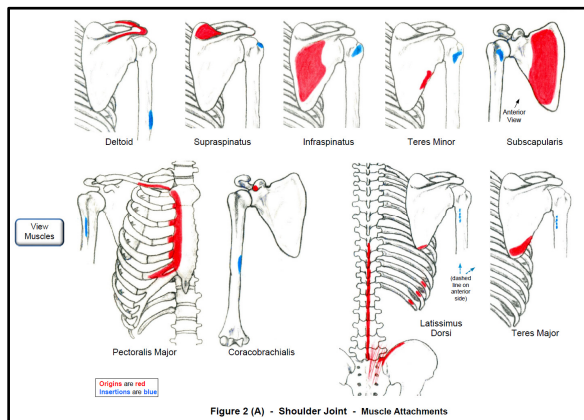
◀ Main TOC button returns to the Main TOC.

Sections within each chapter:

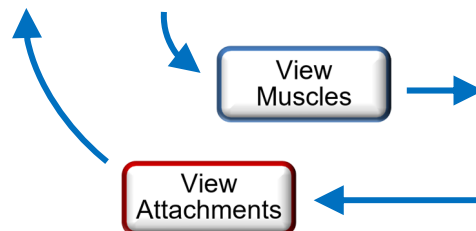
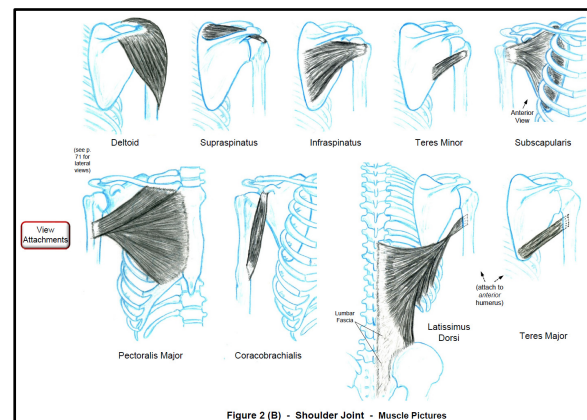
◀ Chapter TOC button returns to the start of the chapter.

Bookmark Outline: Built-in bookmarks to jump to any book section.

Side-by-Side Muscle Comparison Pages are Linked



Pages showing **side-by-side** pictures have buttons that allow jumping back and forth to compare the **muscle** and the **origin/insertion** pictures.

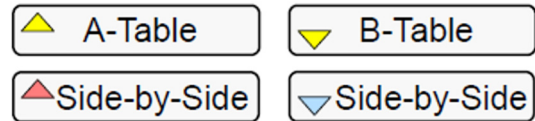


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Special Navigation in Chapters 4 - 6

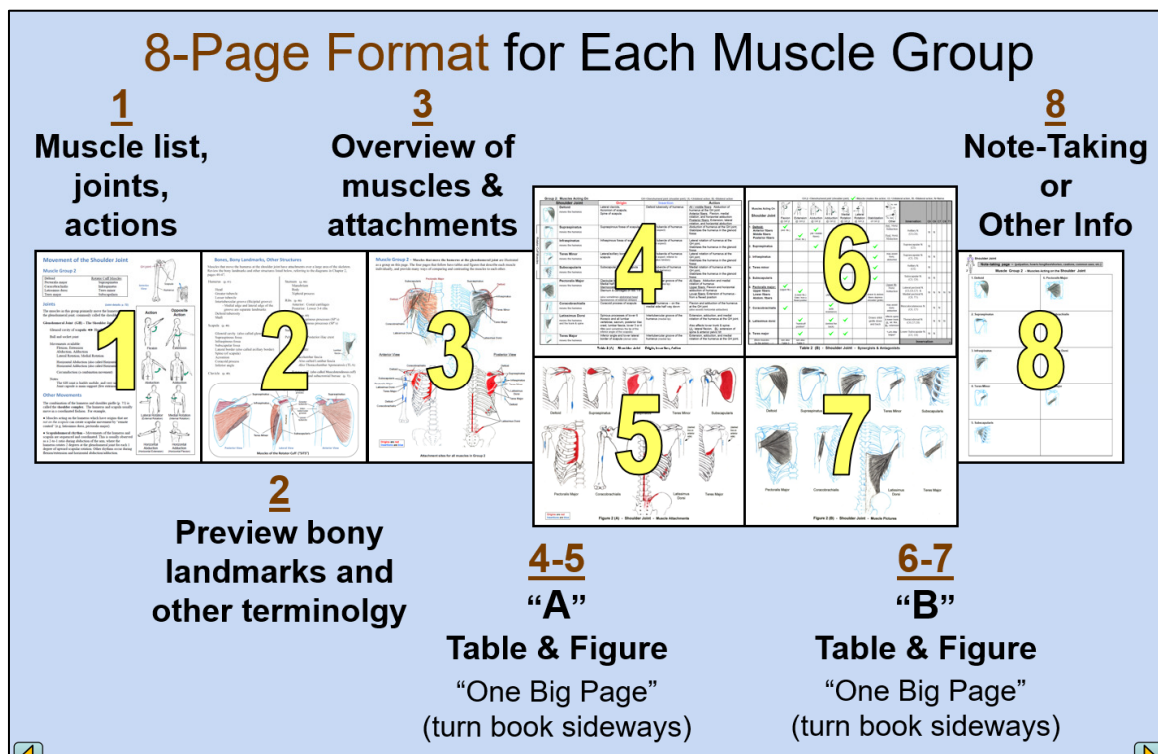
Chapters 4, 5, and 6 contain the bulk of the muscle information that students need to understand and memorize. In the physical book, the page layouts of facts, figures and tables create a rich learning environment.

In the enhanced e-book, color-coded buttons help the reader to navigate the layouts that the physical book provides.



E-book Simulates How a Learner Uses the Physical Book

Each Muscle Group in Chapters 4, 5, and 6 is presented in a consistently organized format (please read Chapter 3 “Using the Brain-Friendly System to Optimize Your Learning” for a complete description). The format, which spans 8 pages, is shown in the diagram below.



As you can see in the diagram above, pages 4-5 and 6-7 allow the reader to turn the book sideways and have “one big page” to study and compare visual and verbal information. In this e-book, interactive buttons have been added to facilitate how a learner would study and memorize muscles using the two-page layouts in the physical book. These buttons are described on the following page.

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Navigating Two-page Layouts

Each Muscle Group employs two-page spreads so that the reader has all information available to study and memorize a group of muscles. However, an e-book is only practical for viewing one page at a time. These buttons facilitate easily jumping back and forth in the book's two-page spreads.

Table 10 (A) - Hip Joint (Part 1) - Origin, Insertion, Action

Muscle Acting On Hip Joint (Part 1)	Origin	Insertion	Action
Gluteus Maximus moves the hip joint	Posterior iliac crest, ilium, and sacrum (also lateral occiput and sacrotuberous ligament)	Gluteal tuberosity of femur, and the isiotibial band (ITB)	Extension and lateral rotation of the hip joint (also lower fibers assist adduction, and upper fibers may assist abduction)
Gluteus Medius moves the hip joint	Upper lateral surface of the ilium (upper half of the wing of the ilium, starting just below the iliac crest)	Greater trochanter of femur (lateral aspect)	All fibers: Abduction of the hip joint Ant. fibers: Assist flexion and medial rotation Post. fibers: Assist extension and lateral rotation
Gluteus Minimus moves the hip joint	Lower lateral surface of the ilium (lower half of the wing of the ilium, anterior to the origin of gluteus medius)	Greater trochanter of femur (lateral aspect)	Abduction and medial rotation of the hip joint (also may assist flexion)
Piriformis (Deep Lateral Rotator #1) moves the hip joint	Anterior surface of sacrum	Greater trochanter of femur (lateral aspect)	Lateral rotation of the hip joint
The Other 5 Deep Lateral Rotators (#2 - #6) Gluteus superior Obturator internus Gemelli inferior Obturator externus Quadratus femoris	Gemelli & Quad Fem. Ischium Obturator foramen (ischium & ischial)	Greater trochanter of femur (posterior-medial aspect)	Lateral rotation of the hip joint
Iliopsoas Iliacus and Psoas Major moves the hip joint and the spine	Iliacus: Anterior iliac fossa Psoas Major: Bodies & TVPs of T12 and L1, L5	Both: Lesser trochanter of the femur	Flexion of the hip joint (may assist lateral rotation at the hip joint) If the femur is fixed (i.e. a standing posture): Pulls on lumbar spine, increasing lordosis, and extends spine; 10

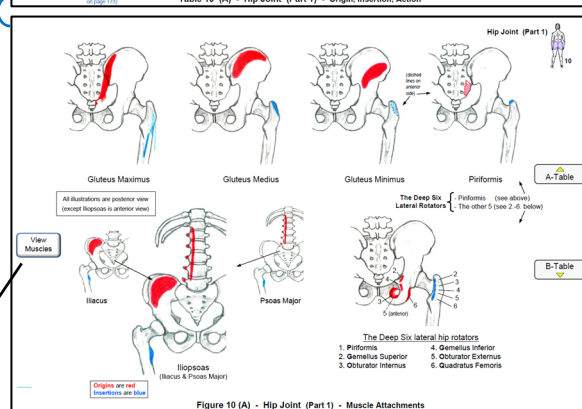
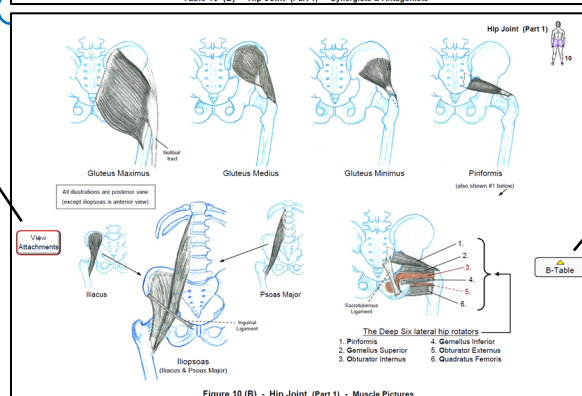


Table 10 (B) - Hip Joint (Part 1) - Synergists & Antagonists

Muscle Acting On Hip Joint (Part 1)	Flexion @ Hip J.	Extension @ Hip J.	Abduction @ Hip J.	Adduction @ Hip J.	Medial Rotation @ Hip J.	Lateral Rotation @ Hip J.	Stabilization of Hip J.	Other	Interruption	L2	L3	L4	L5	S1	S2
1. Gluteus Maximus		✓	✓	✓	✓	✓	✓	✓	Interruption: L2, L3, S1, S2	N	N	N	N	N	N
2. Gluteus Medius	✓	✓	✓	✓	✓	✓	✓	✓	Superior gluteal N. (L4, L5, S1)	N	N	N	N	N	N
3. Gluteus Minimus	✓	✓	✓	✓	✓	✓	✓	✓	Superior gluteal N. (L4, L5, S1)	N	N	N	N	N	N
4. Piriformis									Superior gluteal N. (L4, L5, S1)	N	N	N	N	N	N
5. The Other 5 Deep Lateral Rotators Gemelli superior Obturator internus Gemelli inferior Obturator externus Quadratus femoris									Superior gluteal N. (L4, L5, S1) SP: SP-L4, S1, 2 SP: SP-L4, S1, 2 SP: SP-L4, S1, 2 SP: SP-L4, S1, 2 SP: SP-L4, S1, 2	N	N	N	N	N	N
6. Iliacus									Interruption	N	N	N	N	N	N
7. Psoas Major									Interruption	N	N	N	N	N	N



Side-by-Side

Click back and forth between the two pages

A-Table

B-Table

Move forward to the next two-page spread

Side-by-Side

Go back to the previous two-page spread

Side-by-Side

Click back and forth between the two pages

B-Table

View Muscles

Compare Attachment pictures & Muscle pictures

View Attachments

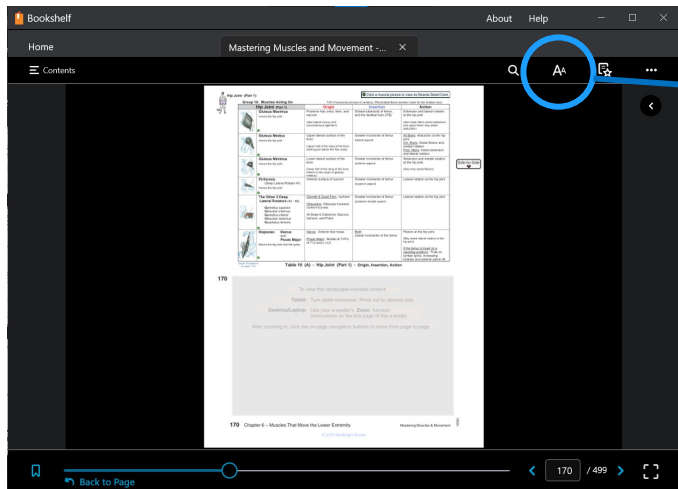
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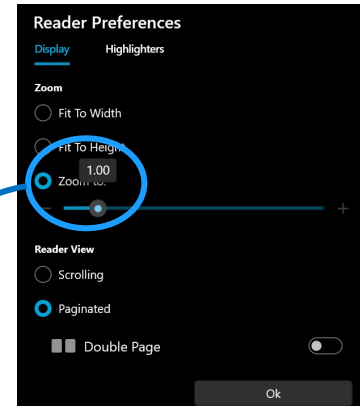
VitalSource Bookshelf – Reading Landscape-Oriented Pages

Landscape pages are displayed in the top half of portrait-shaped pages.

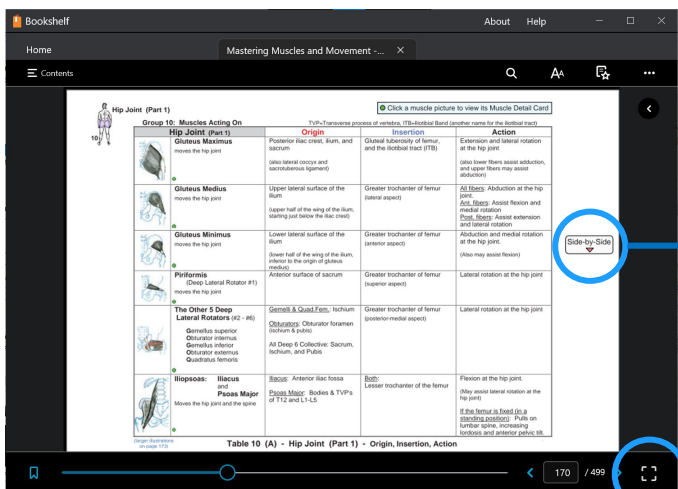
As an example, here is Table 10 (A) viewed using the Windows app on a laptop:




Click **AA** button for Reader Preferences.



Use “**Zoom to:**” slider to enlarge the table.



Once enlarged, use the built-in buttons to move between landscape pages.
(see pages x - xiv for details)

For the largest view, click the  button to enter full-screen mode.

Zoom levels on a standard laptop



For full screen mode, set zoom = 1.25



For normal mode, set zoom = 1.00

Suggestion: Try reading the entire book zoomed in as described above. On portrait pages, it's very easy to do a short scroll between the top and bottom of the page.

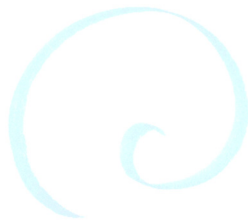
Keyboard shortcuts in full-screen mode

Scroll up and down on the current page:

Use up & down arrow keys, or use mouse wheel or trackpad.

Go to next page or previous page:

Ctrl-PageDown, Ctrl-PageUp



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