



ANATOMY FOR

HIP OPENERS AND FORWARD BENDS

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HOW TO USE THIS BOOK

Practicing yoga is like passing through a series of doors, with each door revealing new possibilities in the poses. The key to unlocking the first door is understanding the joint positions. This understanding can be used to identify the muscles that create the form of the pose and those that stretch. The key to positioning the joints is engaging the correct muscles. This begins with the prime movers. Engage the prime movers and the bones will align. The key to deepening the asanas is using your understanding of physiology to lengthen the muscles that stretch in the pose. Focus on these keys and the postures will automatically fall into place and manifest the beneficial effects of yoga. These include improved flexibility, heightened awareness, a sense of well-being, and deep relaxation.

The Mat Companion series is a set of modular books. Each book focuses on a specific pose category and contains the following:

- **The Key Concepts:** a description of biomechanical and physiological principles with applications for specific poses.
- **The Bandha Yoga Codes:** a simple five-step process that can be used to improve your flexibility, strength, and precision in the asanas.
- **The Pose Section:** a detailed description of the individual postures.
- **Movement Index:** explanations of body movement and tables listing the muscles associated with each movement.
- **Anatomy Index:** a visual listing of bones, ligaments, and muscles (showing the origins, insertions, and actions of each).
- **Glossary of Terms**
- **Sanskrit Pronunciation and Pose Index**
- **English Pose Index**



FIGURE 1 The Key Concepts show you how to apply biomechanics and physiology to your poses. Read this section first and return here often to refresh your knowledge.

FIGURE 2 The opening page for each pose illustrates the basic joint actions and positions of the body for that particular asana. Sanskrit and English names are provided for each posture. Use this page to assist you in learning the basic form of the pose and other concise details.



FIGURE 3 Use the preparatory section as a guide for how to enter the pose. If you are new to yoga or feel a bit stiff, use one of these modifications for your practice. In general, the preparatory poses affect the same muscle groups as the final asana. You will benefit from the pose no matter which variation you practice.

FIGURE 4 Each pose comes with a series of steps for engaging the muscles that position the joints, concluding with a summary of the muscles that stretch. Muscles that contract are colored different shades of blue (with the prime movers deep blue), and those that stretch are red. Use the pose section to master the anatomy of any given asana.



KEY CONCEPT

AGONIST/ANTAGONIST RELATIONSHIPS: RECIPROCAL INHIBITION

Hatha Yoga is the most popular form of yoga in the Western world. And although there are many styles, all derive from an ancient hygienic system for maintaining spiritual and physical health. The Sanskrit word *hatha* translates to mean sun/moon or yin/yang. This fits perfectly with how the body balances opposites through biomechanics and physiology.

Agonist/antagonist relationships and reciprocal inhibition illustrate such a balance. Agonist muscles contract to move a joint or appendage one way and during this movement their antagonists stretch. When the

brain signals an agonist muscle to contract, it simultaneously signals the antagonist muscle to relax. We can take advantage of this physiological combination when practicing forward bends and hip openers. For example, *Kurmasana* flexes the trunk forward, stretching the back extensors—the erector spinae and quadratus lumborum. You can use the arms and gravity to flex the trunk, but actively engaging the abdominals provides a more effective stretch. This produces reciprocal inhibition of the antagonist back extensors, causing them to relax.

FIGURE 1



FIGURE 2 In *Paschimottasana* we flex the trunk and hips. A key agonist/antagonist relationship in this pose involves the psoas (which flexes the hips) and its antagonist, the gluteus maximus (which extends them). Activating the psoas produces reciprocal inhibition of the gluteus maximus, allowing it to relax into the stretch.

Krounchasana beautifully illustrates the agonist/antagonist relationship of the quadriceps and hamstrings. The raised-leg quadriceps activate to extend the knee while the

hamstrings stretch. You can extend the knee with the arms, but consciously engaging the quadriceps produces reciprocal inhibition of the hamstrings, relaxing them into the stretch. You cannot achieve this effect using only the arms to straighten the knee.

Now, bring your attention to the bent knee. The quadriceps stretch in this position. If you use only your body weight to bend the knee, you will not obtain the physiological effect of reciprocal inhibition relaxing this muscle. Therefore, occasionally engage the agonist hamstring muscles to squeeze the lower leg against the thigh.

FIGURE 3 *Uparivitha Konasana* illustrates the agonist/antagonist relationship between the hip abductors (the gluteus medius and tensor fascia lata) and the adductor muscles that are stretching on the insides of the thighs. Press the heels into the mat and attempt to drag them away from the midline to contract the tensor fascia lata and gluteus medius. This produces reciprocal inhibition and signals the adductor muscles to relax.

