

# CHAPTER ONE

## MOVEMENT AND POSTURE

The first organizing principle underlying human movement and posture is our existence in a gravitational field. Imagine its absence in a spacecraft, where astronauts float unless they are strapped in place, and where outside the vessel little backpack rockets propel them from one work site to another. To get exercise, which is crucial for preventing loss of bone calcium on long voyages, they must work out on machines bolted to the floor. They can't do the three things that most of us depend on: walking, running, and lifting. If they tried to partner up for workouts, all they could do is jerk one another back and forth. And even hatha yoga postures would be valueless; they would involve little more than relaxing and squirming around.

Back on earth, it is helpful to keep recalling how the force of gravity dominates our practice of hatha yoga. We tend to overlook it, forgetting that it keeps us grounded in the most literal possible sense. When we lift up into the cobra, the locust, or the bow postures, we lift parts of the body away from the ground against the force of gravity. In the shoulderstand the force of gravity holds the shoulders against the floor. In a standing posture we would collapse if we did not either keep antigravity muscles active or lock joints to remain erect. And even lying supine, without the need either to balance or to activate the antigravity muscles, we make use of gravity in other creative ways, as when we grasp our knees, pull them toward the chest, roll from side to side, and allow our body weight to massage the back muscles against the floor.

Keeping in mind that the earth's gravitational field influences every movement we make, we'll turn our attention in the rest of this chapter to the mechanisms that make movement and posture possible. First we'll look at how the skeletal muscles move the body, then we'll discuss the way the nervous system controls the operation of the skeletal muscles, and then we'll examine how connective tissues restrict movement. If we understand how these three function together within the field of gravity, we can begin to understand some of the principles underlying hatha yoga. Finally, we'll put it all together in a discussion of three postures. We'll begin with the role of skeletal muscles.

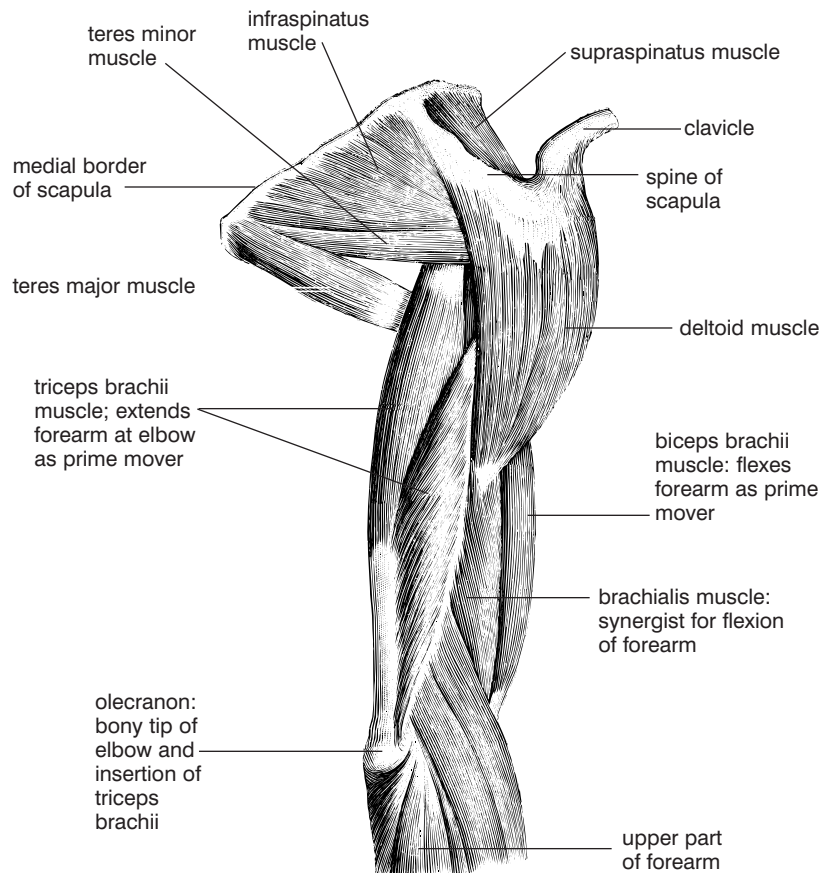


Figure 1.1. View of the right scapula, arm, and upper part of the forearm from behind and the side (from Sappey; see "Acknowledgements" for discussion of credits regarding drawings, illustrations, and other visual materials).