

# **Collisions of Fingers and Feet**

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Many of our physical interactions with the world involve collisions. Your fingertips collide with objects when grasping, or when walking and running, your feet collide with the ground. Collisions pose interesting challenges to our nervous system and to the body. Using our studies on the index finger, I will highlight the challenges faced by the nervous system in stably, yet rapidly transitioning between moving the finger versus producing force with a static finger posture (think of tapping your new iPad). Our study on impacts on the feet during running addresses the question of potentially injurious collisions with the ground. Using measurements on habitually barefoot runners, we begin to understand how our legs and feet can be controlled to minimize impacts. I conclude with some thoughts on the usefulness of studying collisional interactions with the world, and underscore inadequacies in our present understanding of both the physics and biology associated with such problems.