It’s easy to see that adolescence is a time of big changes, starting with the onset of puberty in late elementary school. But behind the obvious increase in height, weight, and body hair is a massive restructuring of the adolescent brain.

Structurally, adolescent brains are becoming faster and more streamlined by eliminating connections that are not used much while keeping and strengthening the connections used more frequently. But the adolescent brain is not only becoming more efficient at what it already does. It is also seeking fresh information and experiences to form new connections.

The adolescent brain is literally reaching out for new information. Laser scanning microscopes of mouse brains dramatically reveal this search for new information: tiny tendrils (dendritic spines) stretch out from brain cells (neurons) like tree leaves growing toward sunlight. When these thin tendrils receive new information and absorb new learning, they form connections with other neurons, wiring the brain for new skills and new ways of thinking.

Around the beginning of puberty, neurons can gain and lose up to 25 percent of their connections each week. By the time we reach adulthood, that number drops to 10 percent. This tells us that early adolescence is an important opportunity for learning—when our brains are still forming abundant new connections and deciding which to strengthen and keep for a lifetime.

So how do we feed these hungry, grasping neurons in ways that provide the skills and knowledge necessary for success?

Evidence suggests that adolescent brains are especially hungry for information gleaned from active doing. Real-time, real-life consequences from trial and error may be the most effective way to build these connections. Certain types of learning appear to be especially significant during early- and mid-adolescence (from about late elementary school through early high school).

For example, pubertal hormones trigger an increased sensitivity to social learning. This intense focus on belonging and earning respect encourages young adolescents to become more attuned to social and cultural norms, ensuring that they learn the skills they’ll need to adapt to the more complex social demands of adulthood. Whether the outcome of this focus is positive or negative depends on the input: a social context that rewards kindness can stimulate compassion and leadership, while one that rewards aggression or cruelty will encourage more destructive traits.

Meanwhile, neural connections using dopamine become more active during adolescence, increasing the rewards from new and exciting experiences. This innate drive toward “risk taking,” which strikes fear in many parents, is what pushes young people to take chances at the new roles, relationships, and responsibilities that will prepare them for the challenges of adulthood. Adolescents need opportunities for positive risk taking, such as trying out for a school play or running for class president, in order to feed this craving for novel experiences.

Adolescents’ brains are hungry for new information and experiences. We need to feed them the opportunities for healthy risk-taking and real-world learning experiences they crave.