

Serena Williams, The Epitome of a Super Brain.



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A new year, a new tennis season, and yet again Serena Williams is poised to break records. I can't help but wonder: how has she become the greatest tennis player to ever play the game, simultaneously succeeding in endeavors off the court, while facing unparalleled adversity? Is there something different about her brain? Do tennis and sports in general give the brains of athletes everything they need to perform incredible neurological feats?

Serena grew up a little girl from Compton and became the woman who would transcend the boundaries of the sport of tennis. Is it possible that she is now helping us to understand a little bit more about our neurological potential? Serena didn't just do that with her powerful strokes or that perfect service motion. Her brilliance has been in her ability to shatter the glass ceiling, break through the limitations of any box to be an activist, to succeed in education, business, fashion, and entertainment, as well as become a polyglot, speaking multiple languages.

It is my opinion that Serena's ability to do all of that while becoming the greatest tennis player in the open era and one of the greatest athletes of our time, is likely the result of how her brain has evolved.

Deepak Chopra, M.D., and Rudolph E. Tanzi, Ph.D, in their book "Super Brain", describe the brain as "constantly evolving" with "the miraculous ability to give more, the more you ask of it." Is Serena making the kinds of demands on her brain that allow her to excel in ways that most people don't even dream of?

While a lot of adults worry about losing nerve cells and developing dementia as they age, Serena Williams' brain is likely undergoing a completely different transformation. We used to think that we lived with the brains that we were born with. We used to think that we could only lose neurons and their synapses. We now know that throughout our entire lives we are capable of birthing new neurons and sprouting new connections. Exercise, especially a sport like tennis, has all the ingredients to produce new cells, remodel our nervous system, maximize its potential, and create a super brain. This may be the key to Serena's success.

Exercise is a powerful promoter of neuroplasticity, the brain's ability to form new neurons and connections, especially in response to learning and injury. Our bodies have been engineered to move. Our brains and spinal cords are largely devoted to learning, planning, controlling, and executing our voluntary movements. Our hundred billion neurons and their trillion connections integrate the information we receive from all aspects of our physical world to manipulate our movements.

It's not just that our brains control our movements, but our movements also give back to our brains. Exercise causes the release of proteins and other chemicals that build and maintain our brains. These factors promote the creation of new neurons, causing nerve cells to sprout more axons and dendrites, therefore increasing the possibility of their connections. They allow neurons to communicate more efficiently with each other, thereby maximizing our neurological health, and allowing our brains to perform better. The impact that exercise has on us fuels learning and makes it possible for our brains to perform optimally.

What does that mean for Serena Williams and other professional athletes?

I believe that it means that the combination of aerobic activity and complex motor movements causes the release of chemicals in their brains which spur the creation and maintenance of neurons and their connections. In all likelihood, the brains of athletes learn more efficiently and function more optimally than those of us who live sedentary lives.

When we hear that Serena is a polyglot we shouldn't be surprised. In 2015, after winning the French Open in Paris, when she delivered her victory speech in French we shouldn't have been surprised. While in Rome, after the final of the 2016 Internazionali BNL d'Italia, when she did what the Romans do and delivered her speech in Italian we shouldn't have been surprised. We shouldn't be surprised at her ability to efficiently pick up a new language. Her off-court successes and her mastery on the tennis court should never surprise us. After all, she has trained her brain to do all of this.

Tennis and sports in general provide all the stimulation, level of engagement, movement, and neurochemicals for Serena and athletes like her to develop a brain that is constantly evolving and capable of giving more the more they ask of it. Sports and exercise in general creates the opportunity for the brain to change, adapt, and learn.

I believe that Serena's success, while partly due to her physical gifts, hard work, and commitment to excellence, is the result of her super brain. It is her brain that she has developed

and used to become one of the greatest examples of what can happen when we unleash the explosive power of our neurological potential.