

The Neuroscience of Perseverance

Dopamine Reinforces the Habit of Perseverance

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Perseverance separates the winners from the losers in both [sports](#) and life. Are you someone who perseveres despite difficulties and setbacks, or do you tend to throw in the towel and call it quits when faced with a challenge or adversity? What makes some people able to keep pushing and complete a task while others habitually fizzle and don't follow through?

[Dopamine](#) is the fuel that keeps people motivated to persevere and achieve a goal. You have the power to increase your production of dopamine by changing your attitude and behavior. Scientists have identified higher levels of dopamine -- also known as the "reward molecule" -- as being linked to forming lifelong habits, such as perseverance.

Neuroscientists have known for years that dopamine is linked to positive behavior reinforcement and the 'ding, ding, ding' jackpot feeling you get when you accomplish a goal. Recently they have also discovered the specific receptors that link dopamine directly to the formation of good and bad habits.

A study released on December 22, 2011 found that key receptors for dopamine function like 'gateways' that are essential to enable [habit formation](#). "Dopamine neurons regulate circuits all over the [brain](#) but they need to be regulated too," said Dr. Joe Z. Tsien, Co-Director of the Brain and Behavior Discovery Institute at Georgia Health Sciences University. Dr. Tsien says that this discovery opens the door to speeding up the process of forming good habits and, possibly, selectively removing bad ones such as drug [addiction](#) or [smoking](#) since the same circuits are seemingly involved in both.

Part of my work with *The Athlete's Way* is to make neuroscientific knowledge a tool that can be used to create behavioral changes in your life. Currently I am fine tuning the message to help get teens and pre-teens self-motivated to be more physically active. In this article I will give people of all ages a simple prescriptive of ways to trigger the release of dopamine. I will show you seven simple ways to tap your brain's internal 'pharmacy' and trigger dopamine production on demand so that you can create a **habit of perseverance**. Perseverance is the key to success in sports, competition and life.

WHY IS PERSEVERANCE SO IMPORTANT TO YOUR SUCCESS?

On a recent trip to Boston, I had the opportunity to talk about [personality](#) traits that lead to changing behavioral habits with an Associate Professor of Exercise and Health Sciences at U Mass Boston named Jean Wiecha, who is also the Director of the GoKids program there. Dr. Wiecha has been conducting community-based research on child health for 20 years. Her work has focused on [childhood obesity](#) and environmental and policy influences on [nutrition](#), diet, and physical activity.

The million dollar question: Why are some people more inclined to persevere and others to quit?

Neuroscientific research shows that higher levels of dopamine might separate the internal drive some people have to persevere while lower dopamine levels cause others give up. Obviously, there are a wide range of factors that come into play when someone decides to persevere--but dopamine can be harnessed and used as a prime motivating force to help you keep pushing and achieve your [goals](#).

HOW DOES THE DOPAMINE REWARD SYSTEM WORK?

Your internal "Reward System" is a collection of brain structures that regulate your behavior by making you feel good when you achieve a goal. Everything necessary for the survival of our species - eating, mating, [sleeping](#), and physical perseverance - is rewarded by a flood of neurochemicals that make us feel good. This is a very generous biological design and at the same time necessary for our survival. All animals seek pleasure and avoid pain. Therefore, nature created an internal reward system that reinforced lifestyle habits necessary to survive. Dopamine floods your body and mind with a rush of satisfaction and reward anytime you succeed at achieving something biologically necessary for your survival.

In a modern world we still get the same rush of dopamine when it comes to primal things like [dating](#) or salivating over a meal - but it becomes less automatic when trying to achieve goals that are not part of our primal instincts. We have evolved to have hard work, sweat and perseverance trigger the release of dopamine. Unfortunately, in a modern world these achievements are not viewed biologically as a matter of life or death and do not automatically release dopamine. Luckily, you can use your large prefrontal cortex and the 'executive function' to trigger the release of dopamine using the seven methods below:

1. PICTURE YOURSELF AS A HUMAN "LAB RAT" IN A SKINNER BOX

In 1954, researchers James Olds and Peter Milner discovered that the low-voltage electrical stimulation of certain regions of the brain of the rat reinforced positive behavior and learning when they were trying to teach the animals to run mazes and solve problems. Olds and Milner realized that they had found the 'pleasure center' of the brain. When the rat achieved a goal they rewarded the rat with a jolt that triggered the release of dopamine. The rats began to associate success at a task with a biological reward of feeling good. You can do this too.

You have the power to tap your own dopamine reserves simply by visualizing yourself as having your finger on a 'joy-stick' of pleasure, just like a rat in a skinner box with a lever. Learn to associate perseverance and accomplishing a mission with feeling good. The motivation at a biological level is just to get the hit of dopamine--but in the real world this drive translates into you following through and achieving goals. Everytime you complete a task in your daily life visualize that you have just self-administered a hit of 'feel good' dopamine and that habit will be reinforced.

2. THE 'PLEASURE PRINCIPLE' TRUMPS 'WILL-POWER' EVERYTIME

Perseverance is synonymous with pain and suffering to many people. Because all animals instinctively seek pleasure and avoid pain, you have to flip your perspective on perseverance 180-degrees and view struggle and perseverance as a doorway to pleasure. Stop viewing perseverance as drudgery but as an opportunity to neurochemically boost your confidence and make you feel good. When framed correctly, the process of perseverance becomes a hedonic experience. This is an explanatory style that makes certain people keep pushing and others to quit. As Henry Ford said, "There is joy in work. There is no [happiness](#) except in the realization that we have accomplished something."

Whenever I meet someone who loves to exercise I ask them how they stay motivated to stick with it and persevere through workouts. The response I get nine-out-of-ten times is: "I exercise regularly because it makes me feel good." The next time you feel unmotivated to exercise or work harder towards a goal remember the "Pleasure Principle" and the equation that SWEAT = BLISS. Laziness and lack of follow through is seductive because it's easy and requires no effort. But, over time the habit of complacency leaves your [dopamine](#) depleted and you become dissatisfied and depressed.

3. NOT ACHIEVING [GOALS](#) DRIES UP YOUR DOPAMINE RESERVES

Low levels of dopamine make you apathetic. If you do not accomplish something everyday your dopamine reserves will diminish. Humans are designed to work hard and to be rewarded for their efforts biologically. Being uninspired and lacking self-motivation is a downward spiral that can snowball out of control. It's so easy to become bitter, cynical and hopeless when your dopamine reserves are low. But you have the power to turn this around by consciously looking at everything you achieve--from flossing your teeth, to taking out the trash--as a way to tap your dopamine reserves. Look at every thing you do in the day as a chance to create a sense of reward and deliver a rush of dopamine.

Puzzles and brain-teaser games are a great way to tap your dopamine reserves. Anytime you win at a computer game or solve a riddle you get the 'ding, ding, ding' dopamine feeling. In your down time you can use games and puzzles to make your dopamine levels swell. Playing word games and solving puzzles not only flexes your mental muscle, it keeps the dopamine pumping.

4. EXPECTATION AND BELIEF CAN PRODUCE DOPAMINE

In a recent *New Yorker* article, Ted Kaptuchuk, who is the director of the "[Placebo](#) Studies and Therapeutic Encounter" at Beth Israel Deaconess Medical Center in Boston, talks about the medical power of belief. He says that if a patient *believes* that a placebo drug is the real thing that it can trigger the body to endogenously produce that chemical and the subsequent healing response.

According to Kaptuchuk, neuroimaging has revealed examples of patients with Parkinson's disease who are given a placebo--but told that that it is a drug that will help their symptoms--can create a spike of their dopamine levels. Findings such as these reconfirm that creating a system of belief and an expectation of efficacy can cause changes in your [brain](#) chemistry. Through conditioning techniques your brain can "learn" to trigger biological changes that reduce pain and suffering. If you *believe* that persevering to achieve a goal will produce more dopamine, odds are it will.

5. BE METHODICAL: CREATE SELF-IMPOSED DEADLINES

To produce more dopamine, get in the habit of setting deadlines and completing goals in a timely manner. Create a daily schedule that includes self-imposed deadlines and stick to it! Use timers, calendars and peer pressure to keep you on track and condition yourself. Partner with a like-minded friend who has similar goals and make a pact that you will hold one another accountable to stay on deadline.

The release of dopamine is amped up when there are time constraints involved, but don't let the last minute rush of manic-panic become a habit. The use of time constraints in [sports](#) and game shows increases the production of dopamine and amplifies the thrill of having finished a goal on time--but this hastiness can backfire in real life. Structure your challenges to have mini self-imposed deadlines that will release a steady dose of dopamine. Be methodical and stop leaving things till the last minute. You want to keep the flow of dopamine constant and break the roller-coaster pattern of [procrastination](#) followed by [panic](#).

6. TURN A MOUNTAIN INTO "MOLE-HILLS" OF DOPAMINE RELEASE

The key to overcoming large obstacles or 'mountains' is to break them into doable doses and tackle them one 'mole-hill' at a time. An effective way to get the jackpot feeling of dopamine while you are in the process of tackling a major goal is to break the bigger challenge, which is a "Macro-Goal" into very tangible "Micro-Goals", each of which gives you a small hit of dopamine.

For example: Something as simple as putting fresh linens on your bed can be a dopamine goldmine. Each step in the process: from pulling all four corners of a fitted sheet around the mattress; to putting the pillows back in their cases; to then tucking in the sheets to create "hospital corners" are all chances to give yourself mini-hits of dopamine. When you have the bed completely made you get a big spike of dopamine and a sense of accomplishment. You can break every task you face in daily life into mini-achievements that each release a hit of dopamine.

Having a checklist of things that you want to accomplish every morning and literally checking them off your list will systematically release a hit of dopamine. One of the most important reasons to define an action as a 'goal' is that it needs to be viewed as something with a beginning, middle and end. When you accomplish the goal you will get the dopamine-based sense of contentment and satisfaction that always accompanies the act of persevering and getting the job done.

7. BE YOUR OWN CHEERING SQUAD: LEARN TO SAY "YES! I DID IT!"

Nobody else really cares if you accomplish 99% of the goals you are striving for in your life. Be your own cheering squad. Don't base your feelings of [self-worth](#) on the praise and kudos of others. Doing this puts the release of dopamine and sense of accomplishment outside of your locus of control. This can leave you feeling dejected. Run your own race in everything you do. Having the eye of the tiger requires that you decide *exactly* what you are going for and then GOING FOR IT. Identify a target and hunt it down. Get in the habit of pushing towards a goal to completion. And when you succeed get in the habit of saying, "Yes! I did it!" silently or under your breath.

Being self-congratulatory isn't about ego or hubris, it is about harnessing your reward circuitry and tapping your dopamine pipeline. It's so easy to become hopeless, cynical and bitter when you feel like what you do doesn't matter. This lack of self-belief creates a biological reality and downward spiral. If you neglect to consciously acknowledge that you have achieved a goal, dopamine will not be released and you will *not* reinforce the habit of perseverance.

CONCLUSION

Creating a steady flow of dopamine is fundamental to creating a habit of perseverance. This incredible neurochemical is accessible to everyone. YOU have the power to tap into your internal dopamine reserves on demand. Learning and conditioning yourself to self-administer this 'reward molecule' everyday can turn anyone into a go-getter. With a slight attitude adjustment and shift in perspective everybody has the power to become more perseverant by tapping the universal power of dopamine. The ability to create a habit of perseverance isn't something reserved for a few--it is available to you!