SAVANTS · EPISODE 27

Smart Drugs and TMS: Forcing the Savant State with Technology?

April 7, 2026



Hello everyone and welcome back to 'Savants', the podcast where we unravel the mysteries of one of the most extraordinary conditions of the human mind! In previous episodes, we've explored how certain individuals are born with astonishing abilities or develop them after a brain injury. We've seen minds that calculate entire calendars in seconds, artists who recreate landscapes with photographic detail after a single glance, or musicians who play complex pieces without ever having received a single lesson.

We've always been fascinated by the idea that our brain harbors hidden talents, waiting to be discovered. But what if we didn't have to wait for a stroke of luck (or, unfortunately, a blow to the head) to unleash these capacities? What if we could activate a 'switch' that gave us a savant ability, even if only for a moment? This leads us to an intriguing question: Could we, with the help of technology or certain substances, 'force' the savant state in a normal brain?

Today we're going to dive into the fascinating and, at times, controversial world of 'smart drugs' or nootropics, and Transcranial Magnetic Stimulation (TMS). Imagine for a moment that, with a simple pill, you could boost your concentration to unprecedented levels, or recall every detail of a book you read years ago. This is what some of these 'smart drugs' promise, which are not like recreational drugs, but rather like a 'tune-up' for our brain, seeking to improve memory, focus, or processing capacity.

On the other hand, we have TMS. Think of it as a super powerful magnet gently placed on a specific part of your head. This magnet emits pulses that create small electrical fields within the brain. It doesn't hurt,

and the effect is like giving a small electrical 'flick' to certain neurons. The idea here is that, by stimulating or inhibiting certain areas of the brain, we could awaken latent abilities. For example, Dr. Allan Snyder, an Australian neuroscientist, has conducted very interesting experiments where he applied TMS to the left prefrontal cortex of healthy individuals. The result? Some of these people showed temporary improvements in tasks requiring attention to detail, such as drawing or proofreading texts, or even in the ability to see complex patterns in numbers.

The big question that arises is: Are these methods truly bringing us closer to inducing savant abilities, or are they just temporary enhancements of existing cognitive functions? Could we one day, really, take a pill or receive a treatment that turns us into a musical genius or a prodigious calculator, even if just for an afternoon? Or, is this still pure science fiction, or a distortion of what it truly means to be a savant?

The question we left hanging at the end of our previous segment is crucial: Are these technologies and substances really a gateway to the savant state, or merely enhancers of capabilities we already possess? To understand this, we need to delve deeper into how they work and what they can (and cannot) do.

Smart Drugs (Nootropics): The Brain's 'Turbocharger'?

When we talk about 'smart drugs' or nootropics, we're referring to a diverse group of substances that are purported to enhance cognitive function, especially executive functions like memory, creativity, or motivation, in healthy individuals. We're not talking about drugs that 'get you high' in the recreational sense, but rather compounds that promise to optimize mental performance.

What are they and how do they work?

- **Racetams (Piracetam, Aniracetam):** These were among the first nootropics. They are believed to work by increasing the activity of certain neurotransmitters (like acetylcholine, key for memory) or by improving cerebral blood flow. Think of them like a lubricant for your brain's gears, making them move more smoothly.

- **Modafinil/Armodafinil:** Originally developed to treat sleep disorders like narcolepsy. They are famous for their ability to promote wakefulness and improve concentration and alertness. It's like giving your brain a very strong, long-lasting coffee, but without the jitters.

- **Creatine:** Yes, the same one bodybuilders use. Surprisingly, it also plays a role in the brain, helping neurons have more available energy. It's like ensuring your brain's batteries are always fully charged.

- **Caffeine and L-Theanine:** A popular combination. Caffeine wakes us up, and L-Theanine (found in green tea) helps relax the mind without causing drowsiness, smoothing out the sometimes agitated effects of caffeine and improving focus.

Can they create a savant?

This is where we need to be realistic. Most research suggests that nootropics, at best, can marginally improve existing cognitive functions. It's like giving an athlete better equipment or an optimized diet: they'll perform better, but it won't suddenly turn them into an Olympic champion if they don't have the baseline talent. They won't make a person with no musical knowledge compose a symphony, or someone without mathematical training solve complex equations in seconds.

What they can do, for some people, is improve working memory (the ability to hold and manipulate information for a short time), sustained attention, or reduce mental fatigue. But this is very different from 'unlocking' a savant ability, which involves an extraordinary and often very specific capacity that seems to operate outside the norms of typical cognition.

Furthermore, they are not without risks. The long-term effects of many of these compounds on healthy brains are not fully understood, and they can have side effects such as insomnia, anxiety, or cardiovascular problems. It's a developing field, but current evidence does not point to the creation of savants on demand.

Transcranial Magnetic Stimulation (TMS): The 'Switch' for Hidden Abilities?

This is where the discussion gets really interesting, especially thanks to the pioneering work of Dr. Allan Snyder and his team. TMS doesn't introduce substances into the body, but rather uses magnetic fields to interact directly with the brain's electrical activity.

How does TMS work?

TMS involves placing an electromagnetic coil near the scalp. When activated, this coil generates a magnetic pulse that painlessly passes through the skull and creates a small electrical current in the brain region beneath it. This current can temporarily excite or inhibit the activity of neurons in that area. Think of it as a kind of 'remote control' for certain parts of your brain: you can temporarily 'turn on' or 'turn off' a brain radio station.

Snyder's Hypothesis: Unmasking the Inner Genius?

Dr. Snyder proposed a fascinating hypothesis. He suggests that we all have access to a more 'raw' or 'literal' level of information processing in our brain, similar to how savants do. Normally, our brain has a 'filter' or 'editor' mechanism (which he associates with the left prefrontal cortex) that organizes, categorizes, and simplifies this raw information so we can make sense of it and function efficiently in the world. This 'editor' helps us see the forest, not every individual tree.

But what if this filter was too strong, preventing us from seeing the details and patterns that savants notice? Snyder hypothesized that by temporarily inhibiting this area of the brain (the left anterior prefrontal cortex) with TMS, that filter could be 'turned off' or 'attenuated', allowing raw information from the right hemisphere (which he believes is more associated with detailed, non-conceptual processing) to emerge into consciousness.

Experimental Evidence and Fascinating Cases

In his experiments, Snyder and his team used TMS to temporarily inhibit the left anterior temporal cortex in healthy volunteers. The results were surprising, though subtle:

- **Improved proofreading:** Participants were better at detecting grammatical or spelling errors, suggesting increased attention to detail.
- **Artistic abilities:** Some participants showed a temporary improvement in the ability to draw or perceive details in drawings. A notable case involved a subject who, after TMS, was able to draw a horse from memory with a level of detail they couldn't before, focusing on contours and shadows in a different way.
- **Pattern perception:** Others showed greater ease in identifying numerical or visual patterns that would normally go unnoticed.

Imagine you're looking at a piece of art. Normally, your brain quickly categorizes it: "It's a landscape," "It's a portrait." But a savant, or someone under the effect of Snyder's TMS, might be seeing every brushstroke, every nuance of color, without the immediate categorization. It's as if TMS silenced the 'narrator' trying to make sense of everything, allowing the 'camera' to record reality in a purer way.

Limitations and Ethical Considerations

Despite these promising findings, it's crucial to be cautious. The effects of TMS in Snyder's experiments were temporary, lasting only as long as the stimulation or a little longer. They didn't transform anyone into a lifelong savant. Furthermore, the 'unlocked' abilities were often increments in existing functions, not the emergence of entirely new and extraordinary talents at a savant level.

'Real' savantism is often associated with atypical brain development from an early age or with a specific brain injury, and rarely comes without other difficulties. A savant might have incredible mathematical abilities but also suffer from severe autism or difficulties in social interaction. TMS does not replicate this complex constellation of abilities and deficits.

There are also profound ethical considerations. If we could 'enhance' our minds at will, who would have access to these technologies? Would it create new divides between those who can afford them and those who cannot? What does it mean to be 'human' if we can fundamentally alter our cognitive capabilities?

Other Forms of Brain Stimulation: tDCS

There is also Transcranial Direct Current Stimulation (tDCS), which works similarly to TMS but with a much weaker and constant electrical current, applied through electrodes on the scalp. It's less invasive and cheaper than TMS, and has shown results in modest improvements in memory or learning, but the evidence for its ability to induce savant states is even more limited and controversial.

Is there a 'Savant Switch'?

The idea that there's a 'savant switch' we can turn on or off with technology is incredibly appealing. Snyder's work gives us a fascinating clue as to how one part of this phenomenon might work: perhaps by reducing the 'noise' or 'filter' of our normal brain processing, we can access a more fundamental perception of reality, similar to what savants enjoy.

However, it's an oversimplification. Savantism is a multifaceted phenomenon, often arising from profound neural reorganization, whether by birth or injury. These reorganizations don't just 'unlock' abilities; they also alter the brain's overall functioning.

'Smart drugs' and brain stimulation like TMS are powerful tools for investigating the brain and, in some cases, for enhancing specific cognitive functions. But so far, they haven't demonstrated the ability to create a savant in the full sense of the word. They've given us glimpses, flashes of what might be possible, but the complexity of the human brain and the mystery of savantism remind us that we are far from unraveling all its secrets. Perhaps genius is not something we can force, but something that emerges from the intricate and unique dance of our neurons, a dance we are still learning to understand.