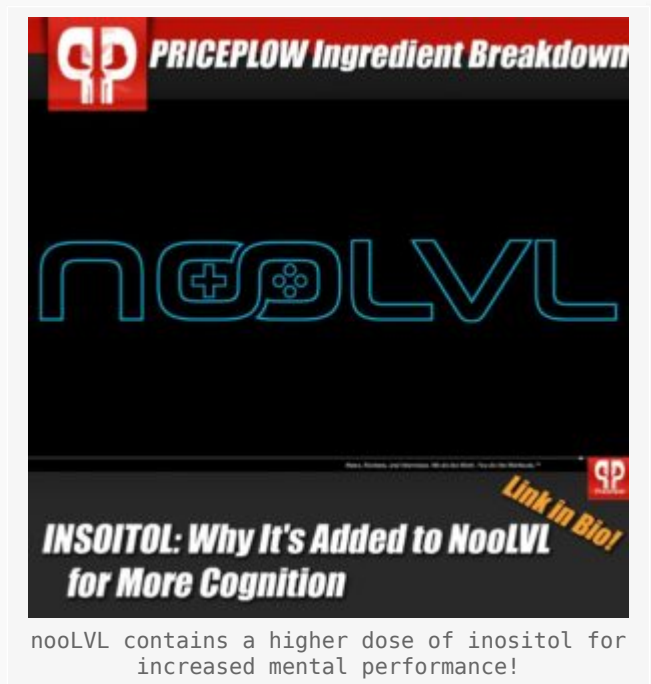


Inositol: Why It's Added to nooLVL For Increased Gaming Performance

written by Mike Roberto | April 16, 2020



Over the past few years, competitive gaming, more commonly known as *esports*, has quickly gained popularity all over the world. Even if you don't follow it, most people have enjoyed a video game here or there at some point in time and may still game once in a while for fun. But esports is a completely different animal, featuring competitions between the top gamers in the world. With money, sponsorships, status, and bragging rights on the line, professional gamers do anything they can to gain an edge on their competitors.

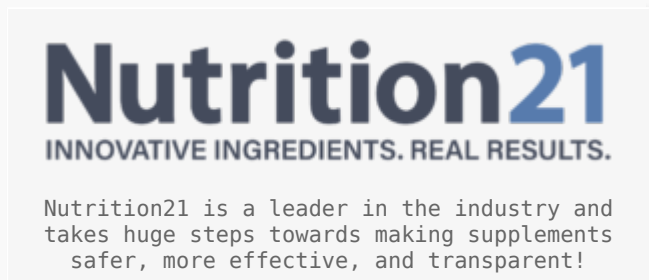
In order to be the best, you have to obtain high-speed reaction time, locked-in focus, and an incredible amount of mental energy, cognition, accuracy, and *endurance*. Put simply, being a professional esports athlete takes some serious brain power. Just like there are supplements available to boost your performance in the gym, industry leaders are developing ingredients and products specifically designed to increase *gamers'* performance as well.

The first company to develop an ingredient *clinically* studied on modern esports athletes is none other than **Nutrition21**. Always on the cutting-edge of bringing new, innovative, and effective ingredients to the supplement industry, Nutrition21 offers several phenomenal ingredients. Most are geared towards enhancing sports performance and health such as *Nitrosigine*, *Chromax*, *Lepidamax*, and *Velositol*, but this one is a *whole* new ballgame.

The Key Difference Between nooLVL and Nitrosigine

With their most recent addition, **nooLVL**, Nutrition21 has made serious waves in

the esports arena. nooLVL is the world's first dietary supplement ingredient with a *clinically-validated* study on esports – and they were playing modern games!



nooLVL is a non-stimulant, patented ingredient that consists of two main elements: *bonded arginine silicate* and a mega dose of **inositol**! But if you follow this industry, you'll know that *Nitrosigine* also contains arginine, silica, and inositol! However, there's one main thing that differentiates the two: **nooLVL has a greater amount of inositol**. Since it was specifically formulated to enhance *mental* performance and energy in esports athletes, the addition of more inositol was warranted.

In this post, we dive into the research and explain why Nutrition21 put extra inositol into nooLVL in an effort to further improve your gaming performance.

Several well-respected brands are utilizing their ingredients, especially thanks to the fact that they're a *research* company first and foremost. Nutrition21 may not get the spotlight very often, but they are a great company to follow along with, so make sure to subscribe down below to find out what they have coming next!

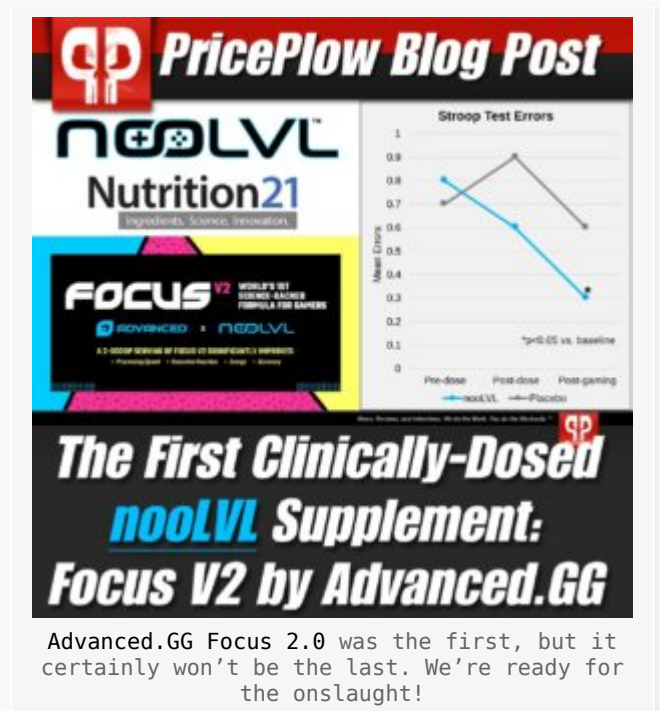
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nooLVL Ingredient Analysis



We've already covered nooLVL in depth in our blog post titled: *nooLVL for Next-Level Gaming: Focus Supplement Ingredient for Gamers!*, so if you want a full breakdown of everything it has to offer, read that article. For *this* article we're mainly going to focus on **inositol** to explain its benefits, mechanism of action, and why Nutrition21 used a higher dose for nooLVL than used in Nitrosigine.

Just to give you some context, let's briefly go over what each component of nooLVL does to increase mental performance, and then we will take a more in-depth look at inositol!

- **nooLVL's Components: Arginine Silicate and Inositol**

As mentioned above, **nooLVL is made up of *arginine bonded to silicate* and *inositol***. If you've been around the supplement industry, even for a brief period of time, you're probably familiar with ingredients intended to boost *nitric oxide (NO)* within the body to increase blood flow through a mechanism known as *vasodilation*.

- **The background: a version of *Nitrosigine* for the *brain*?!?**

TMT-B Time

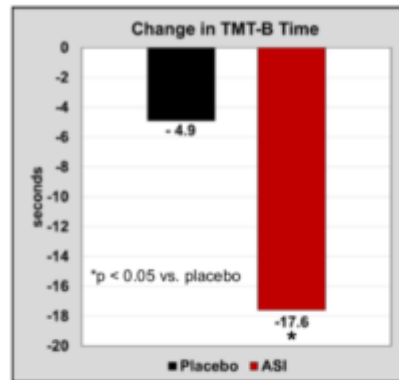


Figure 2. Change in TMT-B time from baseline to within 10 minutes after a single dose. TMT-B time improved by 33% more in the ASI group compared to placebo.

TMT B-A Score

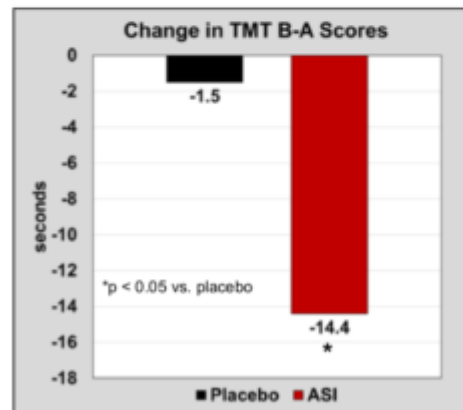


Figure 3. Change in TMT B-A scores from baseline to within 10 minutes after a single dose. The TMT B-A score decreased by 45% in the ASI group, versus 4% in the placebo group.

Nitrosigine as a *nootropic*? Research shows vastly improved TMT scores,[1] and the arginine nitric oxide pathway *does* work in the brain, so...

The above process positively affects exercise performance by delivering more nutrients to the working muscles – but many forget that the mechanism works for the *brain* as well! There are many ways to induce a boost in nitric oxide, and Nutrition21's method involves an ingredient known as *Nitrosigine*, which has a similar profile to nooLVL, but is geared more towards gym athletes. Studies show that Nitrosigine can increase energy, reduce markers of muscle damage, but more importantly for readers today, may even have a positive effect on cognitive flexibility.[1] After years of failed arginine-based ingredients, we call it "*the arginine we had always wanted*".

But the research showing **cognitive flexibility** gave Nutrition21 some bold ideas. What if this was a *nootropic* ingredient on top of a physical performance booster?! Turns out it *is*, especially with some tweaks.

- **More inositol, more *cognition***

In Nitrosigine, arginine silicate does most of the “heavy lifting” (literally), while the amount of inositol is just enough to assist as a stabilizer. But with *nooLVL*, the dose of inositol is increased to specifically boost *cognition* as much as possible. In this scenario, we would argue that inositol is just as important, if not more, than arginine silicate. Of course both components are crucial for maximal results, but inositol takes on a much larger role with *nooLVL* than it does with Nitrosigine.

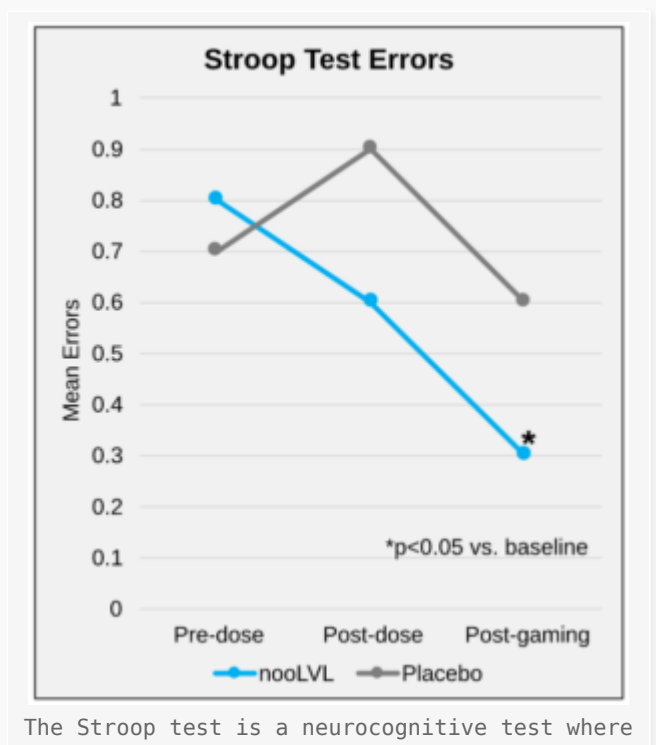
But why is that the case? Well, that’s what we are going to cover next!

What is Inositol?

Inositol, also known as *myo-inositol*, is a *carbocyclic sugar* found naturally in foods such as fresh fruits, beans, grains, meats, eggs, and nuts. It plays an essential role in *cell-to-cell signaling in response to hormones, growth factors, and neurotransmitters, maintaining structural stability of cellular membranes, and osmoregulation.*[2,3]

Inositol is also highly concentrated in the brain, so it makes sense that supplementing with an adequate dose could have some beneficial effects on cognitive function. Inositol carries out its effects by acting as a key metabolic precursor for a secondary messenger system called the *phosphatidylinositol (PI) cycle*,[3] meaning it helps relay signals more efficiently between neurons.

- **Inositol deficiency leads to disastrous outcomes**



The Stroop test is a neurocognitive test where

subjects must read aloud the color of the text that is printed *rather* than the actual text! It evaluates selective attention, response inhibition, and reaction time. Fewer errors are better!

Several studies have linked low levels of inositol with depression,[4] which further supports its importance for neurotransmitter synthesis and brain health. Research also shows that supplementing with inositol can help equalize chemical production within the brain, while enhancing levels of crucial neurotransmitters, including *serotonin* and *dopamine*. [3]

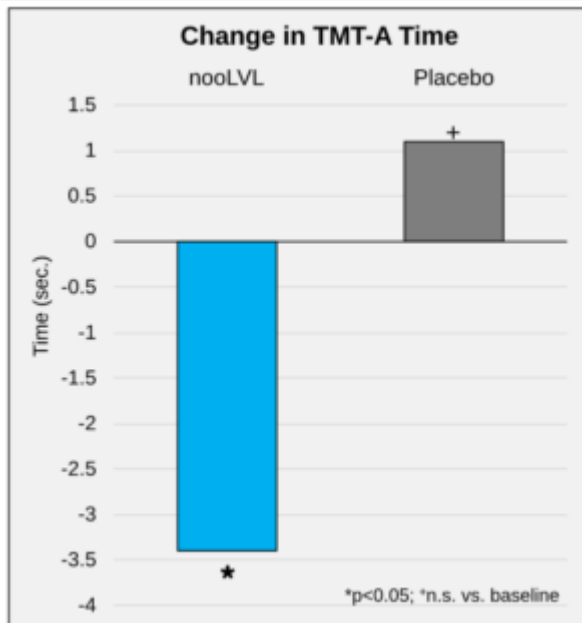
Both serotonin and dopamine can drastically affect cognition, so having sufficient levels is not only critical for overall mental health, but especially for optimal gaming performance.

Serotonin is primarily responsible for feelings of happiness and overall well-being. Therefore, if serotonin production is low, you're more likely to feel depressed, unhappy, and/or lethargic. Having a negative mood will not only affect various aspects of your life, it will alter gaming performance as well.

On the other hand, *dopamine* is primarily involved in learning, working memory, emotion, and cognition. Based on both serotonin and dopamine's roles in the body, you can clearly see why greater levels can be very beneficial for a variety of things – and avoiding deficiencies should be avoided.

• **Inositol and *Gaming* Performance**

After seeing how Nitrosigine positively affected cognitive flexibility, which can enhance performance by lowering anxiety and stress during competition, researchers started to question if adding some extra inositol could result in an even more pronounced effect on mental performance. And what better population to use in order to answer that question than in *gamers* – playing *modern* games.



TMT-A is a test where the subject is asked to connect an ascending sequence of 25 numbers as quickly as possible. An improvement indicates enhanced motor and visual search speed. Image courtesy Nutrition 21.

In 2019, researchers from *Nova Southeastern University* recruited sixty healthy men and women that played video games for five hours or more per week. Their objective was to assess the effects of nooLVL on accuracy, reaction time, and decision-making during gaming.[5] The study stated that the participants were randomly split up into two groups – one group was given a placebo, while the other was given 1500mg of inositol stabilized arginine silicate along with an extra 100mg of pure inositol (*collectively known as nooLVL*).[5]

After a week of supplementation, they found that the nooLVL group had significantly improved *cognitive flexibility, processing speed, and mental acuity* compared to the placebo.[5] They concluded that nooLVL was effective as boosting adult-aged esports gamers' performance.[5] Furthermore, they speculated that the addition of inositol was very beneficial in this context because of its high concentration within the brain and role in the synthesis of multiple neurotransmitters involved in memory and learning.[5]

- **Modern games were used!**

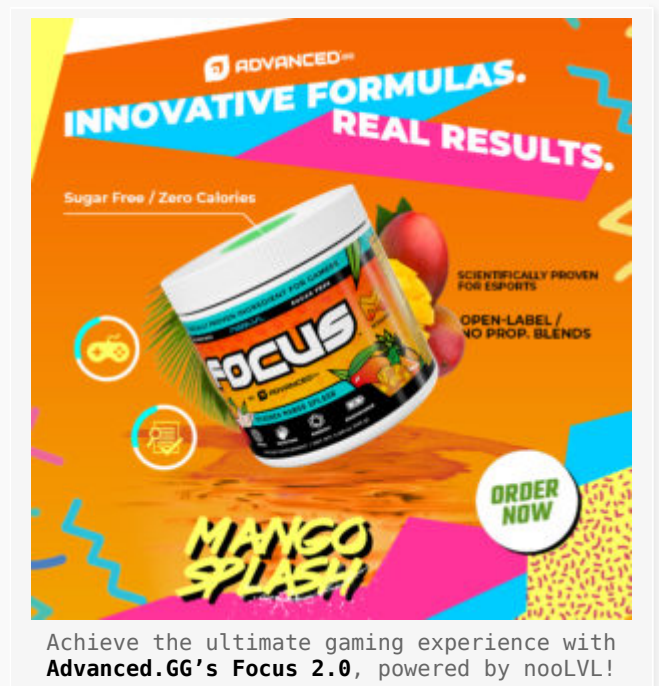
It's important to note that this study wasn't used on Pac-Man and Pong. The researchers tested performance on modern games such as *Call of Duty, Fortnite,* and *Madden*. No offense meant to the classic games, which are still fun in their own ways, but gamers need research geared towards *them* – and that's exactly what Nutrition21 delivered.

Theory on *endurance*: Mitigate the inositol decline during gaming marathons

Since video games can be very mentally taxing, we would not be surprised if after a long period of intense gaming, levels of inositol within the brain would begin to drop off. Anecdotally speaking, if supplementing with nooLVL could help mitigate the decline of inositol levels, then that would also prevent the reduction of both dopamine and serotonin production. In summary, this would allow you to game at a very high level for much longer, giving you an edge on your competition!

After all, these games are often *marathons*, not *sprints*, and that's why we can't just rely on crash-inducing energy drinks and caffeine pills to win in the long haul.

Closing Remarks: Inositol is a Brain-Boosting Powerhouse



After looking at the literature, it's very clear that an extra dose of inositol is beneficial for cognitive performance. We think it's safe to say that nooLVL would not be what it is without inositol. Who knew that this small glucose-like molecule would take on such massive roles within the brain. Well we're glad that Nutrition21 figured it out, because **nooLVL is the world's first game-changing ingredient for gamers** – and it's *legal* for the drug-tested competitors out there!

It all started with Nitrosigine, but with the growth of esports, nooLVL is quickly stealing the spotlight for those looking into effective nootropics. It would be really interesting to see how nooLVL performs in patients with various mental health conditions or even simple decision-making tests. We are beginning

to believe that this inositol-powered ingredient may be able to improve more than just gaming performance!

We're eager to see more research conducted on the potential uses of nooLVL, because as it stands currently, the future seems very bright for this novel brain booster. Nutrition21 continues to prove why they are a leader in the industry, and there is much more on the way! Make sure to subscribe down below to keep up with a company that primarily works behind the scenes to move the industry forward.

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