Negative Oral Arginine Rebuttal

The following is a rebuttal by Dr. Steve Summey on a paper written saying that taking oral arginine is dangerous. The black writing is the author's wording and the pink is Dr. Summey's rebuttal.

ORAL ARG in high doses can actually DECREASE the eNOS (synthase.good) and increases the iNOS (inducible. bad) by elevating the Arginase levels and it**'s** feedback mechanism.

The primary problem is that there is an elevation in the NOS levels, there is a reactive feedback response to oral arginine. Research shows that Arginase secretion can mitigate a positive effect (the therapeutic threshold) if the oral dosage is too high (idiosyncratic interindividual variability factor) **(this is fancy wording for each individual may vary, no one knows by how much! No indication on just how much this variation is???)** produces a paradoxical suppression of the endothelial NOS. As the Arginase levels rise in response to the orally ingested Arginine, the body makes adaptive changes to mitigate the possible damage that can be caused by high Arginine ingestion.

One response elevated ORAL ARGININE ingestion and the subsequent elevation of the Arginase levels is protective inhibition of the formation of NO and eNOS. ???? Why? It does so to prevent the NO levels from "spilling over" to trigger the formation of peroxynitrates, the most damaging prooxidants aka free radicals known to the body. **This says nothing about Arginine WITH anti-oxidants included for a protective effect!** If these elevate the outcome could be catastrophic especially if there is a preexisting prooxidant/antioxidant imbalance. **Which there often is and that is exactly why there is damage to the endothelium and exactly why anti-oxidants are a KEY factor with Arginine!** (likely in patients with preexisting or predisposition to vascular disease). These prooxidants will severely damage the endothelium. **IF they don't have the protective anti-oxidants which is what Dr Ignarro (the Nobel Prize recipient for NO) has in his patent, the use of Arginine, Citruline, WITH anti-oxidants!** The effect would be similar to the oxidative stress reaction caused by a post MI or stroke ischemic/reperfusion injury. *Get the hell outta here!!!..NO I am not kidding.* **This is why anti-oxidants will offer protection from the potential inflammatory situations!**

Therefore before the Arginine can convert to these dangerous peroxynitrates, the body perceiving elevated ARG and reacting with compensatory elevation of the Arginase shifts the Arginine to be converted to an alternative pathway (to prevent the formation of the peroxynitrates). This pathway is the Arginine>urea>ornithine pathway. Ever wonder why Registered Dieticians **(who are terrible nutritionists)** are so critical of high protein diets...here is why..Arginine and the formation of urea. The average intake is approximately 5.4 grams (50mgs per gram). However high protein diets considerably

increases that amount and the accompanying Arginase levels. The result is the excretion of the elevated levels of ARG by the formation and subsequent excretion of urea through the nephrons is very damaging. Again, if the prooxidant/antioxidant ration is significantly imbalanced the kidney damage occurs rather rapidly... **Again, thus anti-oxidants must be included!**

Common response "*Hey I take high arginine, and my BUN levels are normal. They might be, but you can bet the body(exception is the genetically gifted individual who can tolerate high levels or tends to have/secretes lower Arginase levels) is working hard to mitigate the damage and is using up valuable antioxidants that might be used elsewhere..ie the brain.....note research regarding MelaTonin as antioxidant and the formation of imtNOS (inducible NO synthase) which is being linked to neurodegenerative diseases including Parkinson's Dx* **Melatonin does have several nice effects and is a powerful anti-oxidant!**

So, in my opinion, ingesting high levels of oral arginine and inducing vascular disease and developing kidney disease is distinctly possible, so I think I will pass. **I would do the same with only this limited information!**

However, there is a solution. FYI, there is almost always a solution since the body is such a phenomenal adaptive mechanism. But the problem usually is treatable if identified and addressed early enough since it tends to adapts to disease by attempting to mitigate damage or resolve it (called healing) especially if the healing alternative pathways can be activated but biochemical means (the foundational concept of pharmacology!!).

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The solution lies in utilizing the delivery route with arginine (& cofactor) suppositories. **It sounds like someone is trying to sell a delivery method!** And here is why, the lower rectal dosage elevates the amount of arginine available for eNOS (endothelial NO synthase..good stuff) NO formation but does by direct absorption into the bloodstream thus avoiding

1) First liver metabolism
2) Enzymatic degradation by the reactive secretion of Arginase (hepatocytes and enterocytes),
3) The formation of extremely toxic peroxynitrates prooxidants (by excessive oral arginine)
4) Negatively affecting a positive antioxidant/prooxidant ratio.
5) The shift to the Arginine>urea>ornithine pathway (and increase in urea levels).

All of these pitfalls of oral arginine are avoided while safely increasing the formation of eNOS by the rectally delivered ARG (especially with the addition of Ascorbic Acid). **Now we are finally talking about one weak anti-oxidant – not natural bioflavinoids but synthetic ascorbic acid! Not buffered? This is a nice theory but where are the comparative studies? Cross-over studies anyone?**

Therefore instead of 80-85% degradation from Arginase, we get 80-85% absorption and stimulation of the eNOS levels that enhance endothelial integrity and healing. **Again,**

nice thoughts where is the proof? Arginine can also inhibit platelet aggregation and both the formation of xanthomas (blockages) as well as atherosclerotic plaque formation. **I wonder where he got this research information – oh yea from oral ingestion research! Dr Cooke MD, PhD, Cardiologist, and many others have proven that Arginine via oral ingestion dissolves these plaques! Hummm?** *Too good to be true...well yes, it is.....deal with it* **I think we just did!**

Finally the use or inclusion or the use of additional suppository(s) consisting of leucine, glycine and lysine **(Lysine is an Arginine antagonist and should NOT be given with Arginine!)** suppository would further inhibit the secretion of Arginase, since research has shown these AAs appear to further suppress the Arginase secretion and therefore facilitating eNOS

The result is extremely healthy vascular system **(compared to what???)**

Finally, Arginine has a number of additional benefits is when it is delivered into the body without the concomitant elevation in Arginase**, And those additional benefits are??? Proven by what research???**

About Dr. Summey

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The American Chiropractic Association Sports Council awarded Dr. Summey the Distinguished Service Award for Outstanding Contributions to the ACA Sports Council, its members, and the sports community.

The Colorado Chiropractic Association awarded Dr. Summey the Colorado Chiropractic Sports Council "Sports Person of the Year" in 1992 for being one of the founding board members of the Colorado Chiropractic Sports Council.

The Consumers' Research Council of America selected Dr. Summey to be a member of "America's Top Chiropractors," this is an independent research company based in Washington, DC that evaluates professional services throughout America.