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Science in the News - Nicotinamide Exacerbates Motor Symptoms of Parkinson's Disease in Mice.

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Biochem I

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Science in the News 3

With Parkinson's disease, there is quite a bit of research going into it. And not all of it goes as planned or passes the test of time as much as we would hope it to be. As we remember with the scientific method that was drilled into us since we started learning science in the first place, even after the data analysis stage shows that something does a specific thing, we are to keep testing it to add more data to it. And this is one of those examples of where new data with new experiments shows that something in the past is now incomplete with its findings. The specific issue is that the mechanisms with the Vitamin B3 derivative "Nicotinamide" its "mechanism of action is complex and not specific for therapeutic effectiveness in Parkinson's disease." (Melão, A.)

The long version is a bit more interesting. To start with Nicotinamide is a Vitamin B3 derivative that comes in many protein filled foods like beef, pork, peanuts and mushrooms as some examples. In a normal cell, it is a precursor to NAD⁺, which is commonly used in energy mechanisms in the cell. With regards to what it was thought to do with Parkinson's disease is that it would help the formation of the mitochondria in the cell, helping with energy supplies, and treatment would help resist motor function loss in a "fly model" (Melão, A.) of the disease. Now however the story is that it causes the nerve cells to degenerate even faster and it made the disease exacerbate disease manifestations in mice. They experimented by basically giving a lot of mice the disease and then giving them the Nicotinamide. What they found though, is that it

epigenetically increased the amount of neuroprotective gene expression that should help to protect the nerves, but caused the opposite effect as the proteins were not produced from them for a so far unknown reason. The study also said at the end as a foot note that it may also be the animal model being different than before that caused this change and that further testing should be done.

Works cited

Melão, A. (2018, October 17). Nicotinamide Exacerbates Motor Symptoms of Parkinson's Disease in Mice. Retrieved November 7, 2017, from <https://parkinsonsnewstoday.com/2018/10/10/nicotinamide-exacerbates-motor-symptoms-of-parkinsons-disease-in-mice/>