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Miracle Memory

Dr. Schlobotnik has invented a new drug that claims to help drastically improve one's memory. His website reads that “the drug consists of a unique blend of fish oils, electrolytes, and ‘memory enhancing proteins’ that, when taken, ‘vastly improves the memory of the user’”. It then goes on to provide testimonials from various users on the site, claiming that the new drug does wonders for them; these people’s skills increased, while their forgetfulness decreased. However, in the “Frequently Asked Questions” panel, the first question states that the miracle drug does not affect them, although they have taken it four times a day as instructed. Dr. Schlobotnik responds to this by claiming, “Since the drug works by creating electricity in the brain, some factors may influence the individual effectiveness of your results, including 1) where you are located on the globe, 2) whether there are electrical wires or cell phone towers close to your location, or 3) a diet rich in salt or iron.”

This made-up scenario of Dr. Schlobotnik is showcasing a drug that centers around pseudoscience, which is clear to see by its lack of sources and limited information; a consumer could still experience their desired results due to coincidence, or a certain mental effect, but if Dr. Schlobotnik wanted to prove his drug to be legitimate, he would have to conduct multiple experiments and provide detailed information.

Many clear indications reveal Dr. Schlpbotnik’s “miracle memory” drug as something based on pseudoscience, rather than anything legitimate. If one were to look closely at his website, knowing everything there is to know about pseudoscience, it becomes very clear that his

drug fails to prove its reliability. The first noteworthy thing is the fact that he doesn't specify what these "memory enhancing proteins" are; an example of a common tactic used in pseudoscience is to omit crucial facts. Instead of going into detail as to what exactly is used to enhance one's memory, the website simply states "proteins", without giving any specific names for the consumer to look up.

Another indication is that the website shows no indications of actual research and testing taking place; instead preferring to make bold claims with no research to back them up. The "evidence" it uses consists of testimonials from the website's users. The research also never changes or progresses over time, which is another huge indication that the product is illegitimate. When people within the FAQ explain that they have taken the pills, but haven't experienced any increase in memory, this doesn't prompt any further research. Instead, Dr. Schlobotnik proclaims possible reasons for the lack of effect; reasonings such as being located on the wrong part of the globe, or not being close enough to electrical wires and cellphone towers. Reasonings that are again, not backed up by evidence or experiments.

The website for this "Miracle Memory Drug" is riddled with statements that appeal to emotions. For instance, it claims to "jump-start your memory", and "unlock memory potential". When users report memories of a "dark and muffled place", Dr. Schlobotnik responds that these may be memories from the womb. Not only is this, once again, a simple hypothesis with no experimental backing, but it's also a clever way to add both intrigue and sentimental appeal to the product. Who wouldn't want to try out a pill in which they could recall a time in their mother's womb; before they were even born? And finally, we don't know what Dr. Schlobotnik's credentials are. Sure, he has "Dr." in his name, but does he have a doctorate, or is "Dr.

Schlobotnik" just the name he goes by for his brand? These questions and observations are essential things to wonder for any consumer buying a product to help their condition.

Let us say that Dr. Schlobotnik wanted to prove that his drug was in fact, based on actual science. To prove this, he would have to provide a lot more evidence than what's been given on his website. Firstly, he would have to inform the consumers as to what exactly is in these pills, and what function each ingredient carries out. Then he would have to provide a source for a tested study. One that doesn't just focus on simple testimonials from other people, but on an actual scientific experiment. The goal of experimental research is to show that one thing causes something else; in Dr. Schlobotnik's case, he wants to show that his pills cause a drastic regaining of memory. To go about this, he would have to conduct the six stages of the Scientific Method; this includes a theory, a hypothesis, data collection, analysis with statistics, the act of seeing that the data support the hypothesis, and a peer review.

There are two types of groups within every experiment; the experimental groups, and the control groups. The experimental group is meant to be tested, while the control group is meant to be left alone. The purpose of these two groups is to closely examine the differences in behavior between people who do take the drug, and the people who don't take the drug. There also exists a third group that can be added to the experiment; a group that is commonly referred to as the "placebo group". These people are given a fake drug, under the impression that they are being handed the actual thing, that in this case, improves their memory. In reality, the pill they are given does absolutely nothing. This is meant to determine whether the reactions are a result of the actual drug or the test subjects' mental illusions.

Lastly, Dr. Schlobotnik's experiment will need to be peer-reviewed, in the sense that it will need to be put through similar tests by other scientists, and still get the same results. Only then, will he be able to claim that his "Miracle Memory Drug" is backed up by real science.

Although Dr. Schlobotniks miracle memory drug is more than likely based on pseudoscience, some people still may obtain a vivid memory improvement. One might begin to wonder, that if this drug is supposedly a fraudulent product based on pseudoscience, then why would it work for some people? There are two main factors to take into consideration here. Firstly, it is very important to note, that correlation does not equal causation. Let's say, for example, that a guy walks to school every day, and on his way inside the building, he always sees this same group of peers standing outside eating ice cream every morning. This group of kids is known to be troublemakers; they come to class late, they're always making noise, and they frequently get bad grades. And every day, he sees this group of kids outside in the morning, eating ice cream. Now, using the limited information he has, this guy could jump to the conclusion that ice cream in the morning makes a student more likely to misbehave and get bad grades. This is a classic example of the difference between correlation and causation; while the ice cream seems to be a popular treat amongst the bad kids at his school, it does not necessarily indicate that the ice cream is what's causing these kids to act out. There are too many outside factors to consider; maybe these kids have a bad life at home and happen to find comfort in skipping class and eating ice cream with their friends. Maybe they're just simply bad kids who happen to like ice cream. Likewise, it isn't responsible for concluding that because there is a correlation between a few people taking this drug, and them regaining memory, the drug is definitely what caused the memory resurgence; if the people in question have changed anything

else about their lifestyle since taking the drug, such as exercising more or eating leaner foods, then there's no way to determine what exactly their memory enhancement was caused by.

There is also this phenomenon known as the Placebo Effect, which is something that occurs very often among human beings. When a person is given a supposed cure or remedy for something, it doesn't matter if the drug in question works. As long as they believe it works, they start to feel better. This is the reason why, as mentioned earlier, there is sometimes a whole group within an experiment, meant to take a fake drug without their knowledge. A person's expectations can certainly have an impact on whether a product "works" or not.

Overall, as a consumer, there are multiple ways to determine whether a product is a result of actual science or pseudoscience. And although Dr. Schlobotnik and his miracle drug are both parts of a made-up scenario, there are still many real-life supplements like his on the market. They can usually be found online, and they claim things that appeal to the consumers' emotions rather than stating facts backed up by a reliable source. Oftentimes, due to the placebo effect, people will buy into whatever falsehood they've been sold and believe that they can feel the drug's effects. Knowing the difference between science and pseudoscience can help with saving the consumer some money, and prevent greedy businesses from profiting off of a fake product.