



An Individual Case Study on the Effects of Griffonia Simplicifolia Seed Extract (5-HTP) on Incremental Sleep Schedule Improvement

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ABSTRACT

The regulation and maintenance of the sleep-wake cycle are vital to maintaining optimal health. When this sleep-wake cycle becomes disrupted, there are several courses of action an individual can take to reset their sleep schedule, including taking sleep-medication prescribed by their provider. From an integrative health care perspective, the 5-hydroxytryptophan (5-HTP) extract from the Griffonia simplicifolia may prove to be beneficial in this case study evaluating its effectiveness in helping an individual maintain a healthier sleep schedule, thus opening more discussion for larger case studies verifying the effectiveness of 5-HTP in treating insomnia.

KEYWORDS: *Griffonia simplicifolia (Greh-phone-e-uh sim-ply-suh-foal-e-uh), 5-hydroxytryptophan (high-drox-e-trip-toe-fan), insomnia, sleep schedule, serotonin, statistical average, case study*

INTRODUCTION

The National Sleep Foundation states, "Sleep is an important part of a healthy lifestyle." (1) Muscle repair, reduction of chronic health risks, improvement of mood, and the clearing of toxins from the brain are a small sampling of the benefits of a good night's rest. Though the National Sleep Foundation recommends seven to nine hours of slumber for adults, there are over 3 million cases of insomnia a year. Insomnia is a condition where an individual finds it difficult to either fall or stay asleep, or both. This condition can be catalyzed by stress, trauma, hormonal imbalance, etc. Since this condition can be chronic, lasting for months or years, it can deeply impact a person's performance at work, affect their schooling, and can even be lethal, as an individual with slowed reaction time, due to lack of sleep, in a vehicle is at a higher risk of getting into an accident. (2,3)

The aforementioned consequences stress the imperative nature of treating insomnia. Medication, lifestyle-focused therapies, CBT, and other treatments are available to individuals with insomnia. (4) 5-HTP may be one such treatment. According to WebMD, "5-hydroxytryptophan (5-HTP) can be converted to serotonin in the body. It is often used for depression. It has less evidence for insomnia and anxiety." 5-HTP is a metabolic intermediate, or precursor, to

serotonin and was extracted from the African herb Griffonia simplicifolia, which is "a plant found in western parts of Africa." (6) Figure 1 is a portion of the 5-HTP sample removed from its capsule and Figure 2 is the Griffonia simplicifolia.

As someone who struggles with symptoms of insomnia, particularly having trouble falling asleep, I found it appropriate to perform an individual case study to find whether or not taking 5-HTP would have any effect on my sleep schedule. As the overview section in the WebMD article stated that there is a need for testing 5-HTP's status as an insomnia treatment, this case study is testing whether taking 200mg of 5-HTP consecutively will result in an increase in the statistical average of my time spent asleep.

MATERIALS AND METHODS

Sample Preparation

The 5-HTP extract was stored in capsules in a plastic vial container. Each dose was taken in 200 mg samples at 9:30 PM EST for 25 consecutive days. The 200 mg dosage was taken about 1-2 hours after having eaten supper, and prior to going to bed, at 10:30 PM EST. The time at which my alarm went off in the morning was set to 7:00 AM EST, however, as shown in the figures mentioned in the following section, there were occasions in which this was not the case.



Data Collection

The data was collected on an automated sleep-tracker app. For a period of 50 days, the sleep-tracker app collected data on my sleep schedule. I went to bed at 10:30 PM EST and attempted to sleep. The first period of 25 days, without taking 5-HTP, is seen in Figures 3 and 4. Figure 3 records the time the sleep-tracker estimated I went to sleep, and the time in which I woke up. As aforementioned, my alarm was set for 7:00 AM EST, however, there were times when I would press the snooze button once or twice, and even times when I ignored the alarm and continued to sleep for a few more hours. Even granting that, this is in the aftermath of an illness, this difficulty waking up more likely stemmed from my difficulty falling asleep. Despite my efforts to fall asleep within the approximate window of time between 10:30 PM EST and 11:00 PM EST, as evidenced by the mode of the initial time when I fell asleep in the data set of Figure 3, I frequently fell asleep after 1:00 AM EST.

Calculating

The automated sleep-tracker app approximates to the closest number ending in 0 or 5. For example, 12:49 AM is logged as 12:50 AM and so forth. In Figure 3 and Figure 5, the time

spent sleeping is recorded from the data from the tracker, and then that time was entered as a figure of hours and minutes. On Figure 4 and Figure 6 the times recorded under the section labeled "Time" were converted to minutes, e.g., the time period 12:20 AM to 7:00 AM is a period of 6 hours 40 minutes, or a total of 400 minutes. Taking the 25 data points from Figure 4, I entered them into the average calculator tool from calculator.net and found that the statistical average of the data was 407.6. In other words, without taking 5-HTP, I slept approximately 407 minutes a night, which is 6 hours and 47 minutes. Upon repeating the process for the 25 data points from Figure 6, I found that the statistical average was 430.4. That is to say, while taking 5-HTP, I slept approximately 430 minutes a night, which is 7 hours and 10 minutes.

RESULTS

Taking 200mg of 5-HTP for a period of 25 days resulted in an increase in the statistical average amount of sleep I had each night. While the difference between the two averages, i.e. 23 minutes, may seem like a negligible figure, other research has shown that getting an additional 20-30 minutes of sleep can increase an individual's response time, better a person's mood and focus, and improve memory function. (7,8,9)

Figure 1

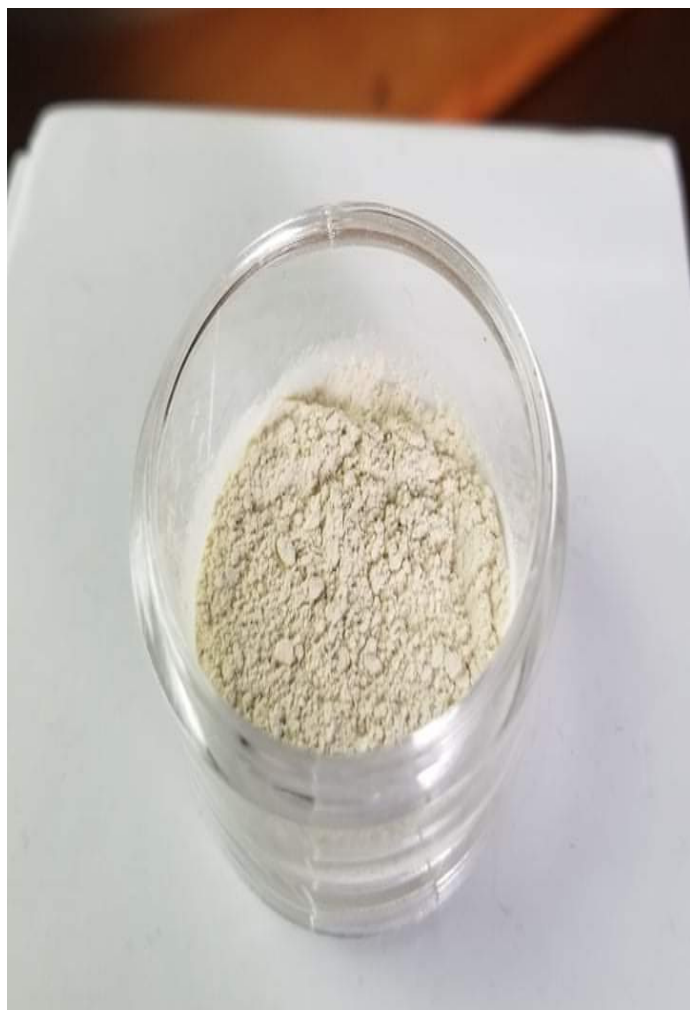


Figure 2



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Figure 3

A	B	C
Days	Sleep Span	Time
Day 01	12:20 AM to 7:00 AM	6 hours 40 minutes (400)
Day 02	1:20 AM to 8:50 AM	7 hours 30 minutes (450)
Day 03	1:20 AM to 7:10 AM	5 hours 50 minutes (350)
Day 04	1:40 AM to 7:10 AM	5 hours 30 minutes (320)
Day 05	1:20 AM to 7:00 AM	5 hours 40 minutes (340)
Day 06	1:00 AM to 7:10 AM	6 hours 10 minutes (370)
Day 07	12:00 AM to 7:10 AM	7 Hours 10 Minutes (430)
Day 08	1:00 AM to 7:05 AM	6 hours 5 minutes (365)
Day 09	10:40 PM to 7:10 AM	8 hours 30 minutes (510)
Day 10	12:50 AM to 7:10 AM	6 hours 20 minutes (380)
Day 11	12:00 AM to 7:40 AM	7 hours 40 minutes (460)
Day 12	12:40 AM to 6:50 AM	6 hours 10 minutes (370)
Day 13	11:30 PM to 7:10 AM	7 hours 40 minutes (460)
Day 14	11:50 PM to 7:10 AM	7 hours 20 minutes (440)
Day 15	11:30 PM to 7:00 AM	7 hours 30 minutes (450)
Day 16	12:40 AM to 7:00 AM	6 hours to 20 minutes (380)
Day 17	2:10 AM to 10:00 AM	7 hours 50 minutes (470)
Day 18	2:20 AM to 8:10 AM	5 hours 52 minutes (350)
Day 19	1:00 AM to 7:00 AM	6 hours (360)
Day 20	12:50 AM to 7:10 AM	6 hours and 20 minutes (380)
Day 21	11:50 PM to 7:05 AM	7 hours 15 minutes (435)
Day 22	11:40 PM to 7:00 AM	7 hours 20 minutes (440)
Day 23	1:10 AM to 7:00 AM	5 hours 50 minutes (350)
Day 24	1:20 AM to 9:10 AM	7 hours 50 minutes (470)
Day 25	1:40 AM to 9:20 AM	7 hours 40 minutes (460)

Figure 4

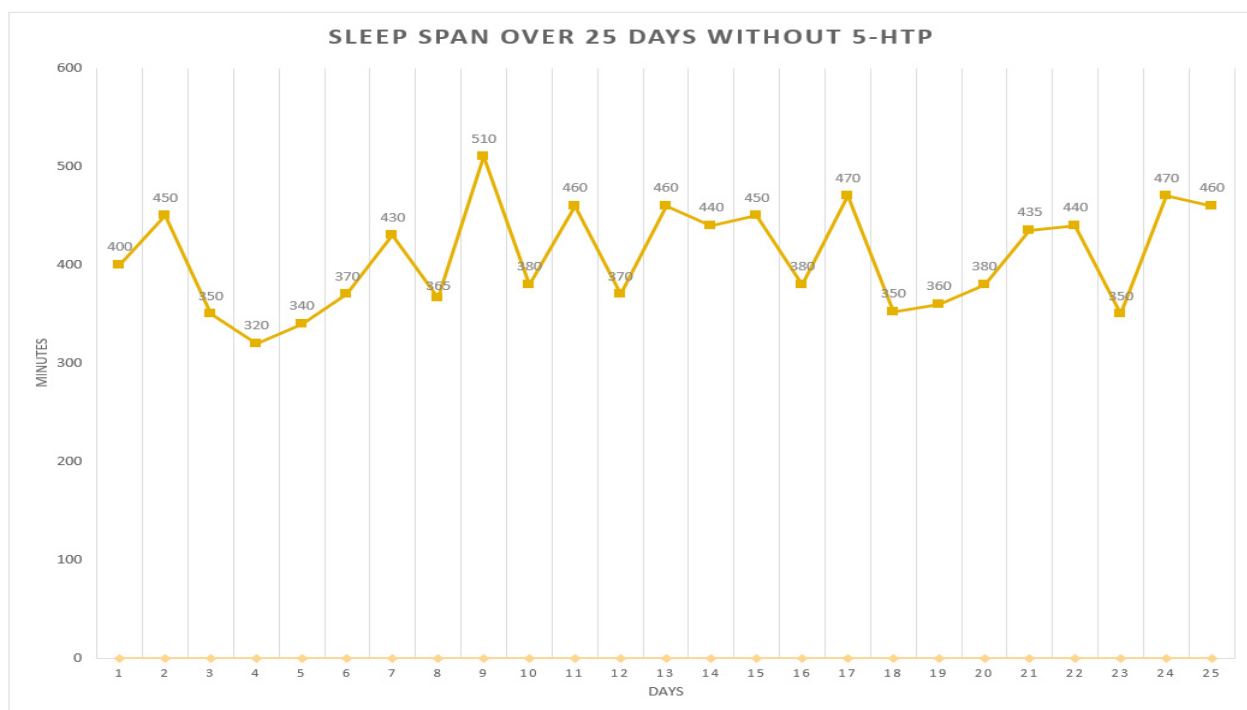
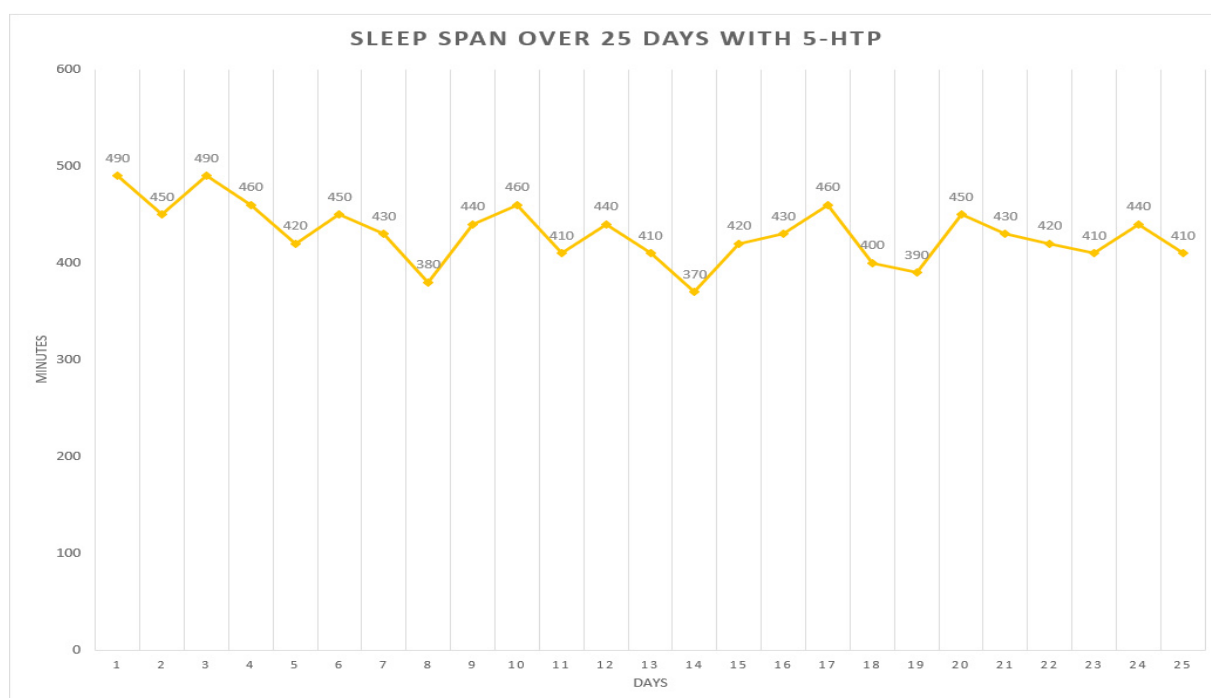


Figure 5

A	B	C
Days	Sleep Span	Time
Day 01	10:50 PM to 7:00 AM	8 hours 10 minutes (490)
Day 02	11:30 PM to 7:00 AM	7 hours 30 minutes (450)
Day 03	10:50 PM to 7:00 AM	8 hours 10 minutes (490)
Day 04	11:30 AM to 7:10 AM	7 hours 40 minutes (460)
Day 05	12:10 AM to 7:10 AM	7 hours (420)
Day 06	11:40 AM to 7:10 AM	7 hours 30 minutes (450)
Day 07	12:50 AM to 8:00 AM	7 hours 10 minutes (430)
Day 08	12:50 AM to 7:10 AM	6 hours 20 minutes (380)
Day 09	11:40 PM to 7:00 AM	7 hours 20 minutes (440)
Day 10	11:20 PM to 7:00 AM	7 hours 40 minutes (460)
Day 11	12:20 PM to 7:10 AM	6 hours 50 minutes (410)
Day 12	12:40 AM to 8:00 AM	7 hours 20 minutes (440)
Day 13	12:10 AM to 7:00 AM	6 hours 50 minutes (410)
Day 14	1:10 PM to 7:10 AM	6 hours 10 minutes (370)
Day 15	12:20 AM to 7:20 AM	7 hours (420)
Day 16	11:50 PM to 7:00 AM	7 hours 10 minutes (430)
Day 17	12:30 AM to 8:10 AM	7 hours 40 minutes (460)
Day 18	12:20 AM to 7:00 AM	6 hours 40 minutes (400)
Day 19	12:30 AM o 7:00 AM	6 hours 30 minutes (390)
Day 20	11:30 PM to 7:00 AM	7 hours 30 minutes (450)
Day 21	11:50 AM to 7:00 AM	7 hours 10 minutes (430)
Day 22	12:10 AM to 7:10 AM	7 hours (420)
Day 23	12:20 AM to 7:10 AM	6 hours 50 minutes (410)
Day 24	11:40 AM to 7:00 AM	7 hours 20 minutes (440)
Day 25	12:10 AM to 7:00 AM	6 hours 50 minutes (410)

Figure 6



DISCUSSION

It should also be noted that, despite my efforts to fall asleep within the approximate window of time between 10:30 PM EST and 11:00 PM EST, as evidenced by the data set in the “Sleep Span” section in Figure 3, I frequently fell asleep after 1:00 AM EST. However, the “Sleep Span” data in Figure 5 shows an improvement, i.e. I often went to sleep closer to 12:00 AM EST or even 11:00 PM EST. In other words, I not only experienced an increase in the amount of time I slept, but had an easier time falling asleep while taking 5-HTP. The results of this individual case study would seem to indicate then that studying 5-HTP as a treatment for insomnia merits study on a broader scale, with increased sample size, volunteers, and a control group that receives a placebo.

CONCLUSION

The result of taking 5-HTP was an increase in the average amount of time I spent sleeping, i.e., the average number of minutes in the “Time” section in Figures 4 and 6 increased. It should also be noted that the mode of the time I initially fell asleep changed in both data sets. As evidenced by Figure 3, without taking 5-HTP, I frequently went to bed after 1:00 AM EST, however as evidenced by Figure 5 when I was taking 5-HTP, rather than tossing and turning until 1:00 AM or later, I was able to fall asleep at around 12:00 AM EST. From these points, it seems that 5-HTP was successful in this case study in helping me maintain a healthier sleep schedule, and thus there is merit in further case studies and experiments using 5-HTP as a treatment for insomnia.

ACKNOWLEDGMENTS

I thank the following: Casey Sernaqué for photographing the 5-HTP Sample, for helping me select a visual image of the Griffonia Simplicifolia plant seeds, for helping me represent my data in the graphs in the figures, and for being a source of encouragement, discernment, and friendship. I likewise am indebted to a well-seasoned scientist, Dr. Bergman for

peer-reviewing my paper. Finally, I thank Dr.Sutherland for her correspondence with me and for prompting me to move forward with this case study.

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Citation: Christopher J. Sernaqué, NCPT, “An Individual Case Study on the Effects of Griffonia Simplicifolia Seed Extract (5-HTP) on Incremental Sleep Schedule Improvement”, American Research Journal of Psychiatry, Vol 2, no. 1, 2022, pp. 1-5.

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