**Light Effect on Circadian Rhythm**

INTRODUCTION

Dwarf hamsters are a subspecies of the rodent hamster classified under the genus: Phodopus and species: Sungoris. Compared to the more common golden hamster, dwarf hamsters are small weighing an average of 40 grams and measuring about three inches long. Dwarf hamsters have a plumb body, expandable cheek pouches and large eyes. Though they are nearsighted they depend more on their sense of smell and hearing. Dwarf hamsters, unlike the golden hamster, are sociable and are capable of living with others of their kind. They have an average life span of two years and a gestation period of approximately sixteen days. And a litter ranging from 4 to 6 which means that they are fast breeders and easy to acquire for laboratory experiments as well as pets. Hamsters eat a large variety of foods and are known to be nocturnal animals, being most active at night. Experiments involving hamsters as subjects have played a great role in our medical advancements through the past decade. An example of an experiment being conducted on hamsters for medical advancements is the San Diego Hamster in which hamsters are given doses of medicines used in treating people with depressions. Studies on hamsters have also provided important information for our understandings of our own bodies. Hamsters are believed to have a strong sense of telling the time precisely even when there are no external clues such as room lights, or sunshine. They are studied to seek better treatments for sleep disorders, jet lag, and mental illnesses that may be caused by a faulty body clock. The sleep-wake cycle of hamsters is considered to be a circadian rhythm since it runs close to a 24-hour cycle. With such a cycle, hamsters are often seen about certain times each day. Knowing the biological rhythm (the sleep-wake cycle in this case), or in other words; the self-sustained cyclic change in a physiological process or behavioral function of an organism that repeats at regular intervals, permits scientists to conduct experiments on hamsters in which attempts to alter their circadian rhythms are tried out. Such experiments may involve a change in the environment of the subject or mutation of the hamster genome. Environmental time cues such as light that has the ability to reset a biological clock or namely, entraining agents are used in experiments dealing with environmental changes. In the following defined experiment on two hamsters, a change in the enivironment will be used to determine whether the sleep-wake cycle of hamsters is exogenous-rhythm due to rhythmic environmental cues external to the organism; or free running-natural self-sustained rhythm that exists in the absence of environmental cues. The change in the environment used is the reversing of the light the subjects see both during the day and night. By reversing the lights the subjects viewed, I hope to see the hamsters more active during the day and sleeping more during the night.

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