

# Adjusting the Body Clock in Visually- Impaired Persons

W202006

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# Research Summary

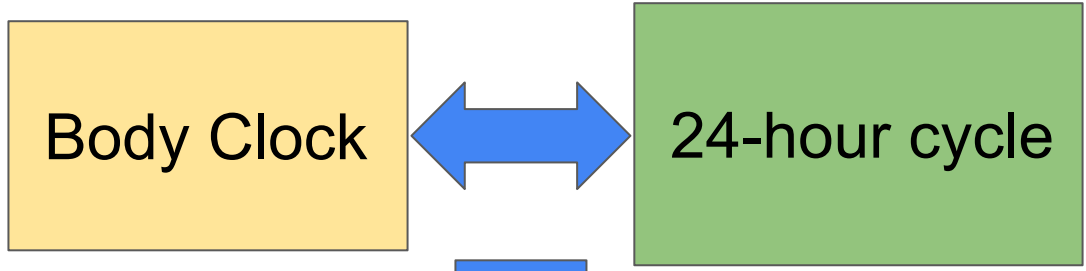
- 1.The disorder in the body clock of visually-impaired persons
- 2.The causal association between total blindness and the collapse of the body clock
- 3.The effect of food and exercise on our sleep

## Research Method

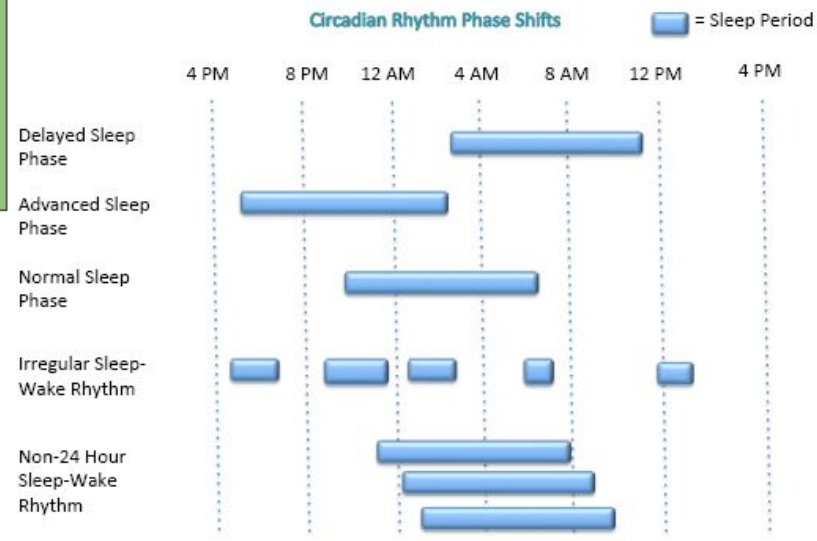
Reading research papers and doing a relevant literature search



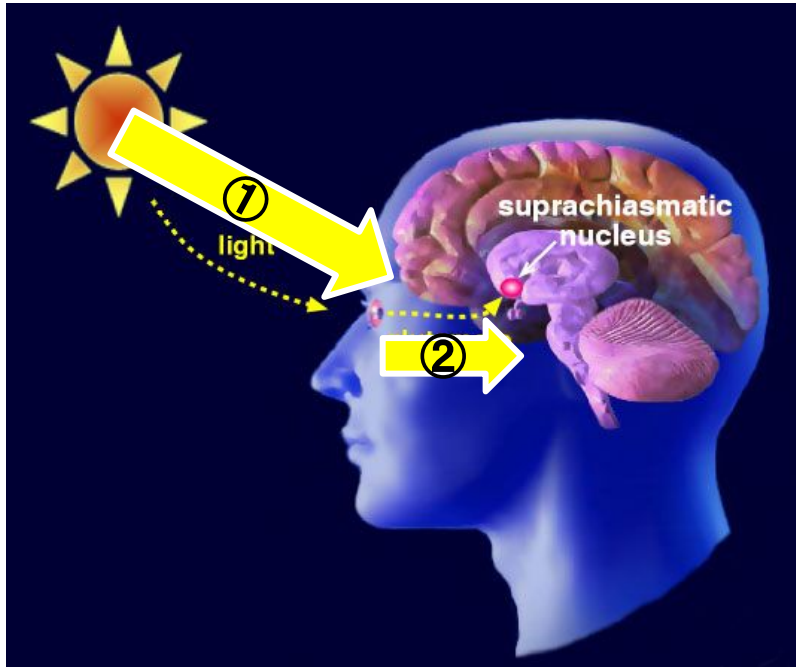
# Disorders in the Body Clock of Visually-Impaired Persons



## Circadian Rhythm Sleep Disorder



# Causal Relationship Between Body Clock and Total Blindness



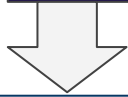
A lack of ability to receive brightness causes a disturbance to the body clock

- ① receive sunlight **X**
- ② tell brain “what time it is”
- ③ adjust to disturbance to the body clock **X**

## The effect of food and exercise given on our sleep

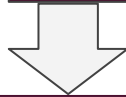
Food

**Melatonin**



it increases at night

**Serotonin**



raw material of melatonin

includes  
bananas, kale, and corn

Exercise

**Rhythmic Exercise**...Do the same movement over and over again. (15 to 30 minutes)

for example...

15 minutes of  
step-up and  
step-down exercise

↳ **Serotonin levels in the blood increased after this exercise.**



## Conclusions

- ① Among the visually impaired, those without light perception are more likely to have their body rhythms disrupted.
- ② Circadian rhythm sleep disorders occur due to the inability to properly synchronize the body's internal clock to the actual 24-hour cycle.
- ③ Since the body clock can be synchronized through diet and exercise in addition to exposure to light, it is possible to synchronize the body clock without having light perception.