

Science of Sleep

Pay attention closely to the films because (at times) there are questions that come in rapid succession ... SO DON'T SLEEP DURING THE FILM BECAUSE YOU'LL MISS KEY INFO!

A. What did the sleep studies with rats show about the importance of sleep?

The answers to questions B and C come right after each other so pay attention:

B. What did Professor Walker find about student performance on memory tests after not sleeping for the night?

C. On a more revolutionary note, what specifically did Walker find about memory performance after a good night's sleep?

D. In the "chronic partial sleep deprivation" study where subjects were kept awake until 4 am and then awakened at 8 am (for a 5 nights in a row), what effects did the experimenters note right away?

- How does each consecutive night of "partial sleep" affect the subjects' performance and emotions?

E. What do studies show about the effectiveness of strategies to combat "micro-sleep" (such as singing, rolling the window down, etc.) while driving?

F. Identify the major catastrophes that Professor Dinges believes were causes, at least in part, by a lack of sleep:

G. What does Professor Dinges say about "chronically sleepless" peoples' ability to adapt to their consistently abbreviated sleep (i.e. how well have people really "*learned to live without sleep?*")

H. What did Professor Walker find going on inside sleep-deprived college students' brains (particularly their amygdalas) while he showed them horrific images?

- What impact does this have on rational thinking?

I. How many hours per night do human need?

- How many hours asleep Americans now getting?

J. Explain the relationship found between lack of sleep and obesity (make sure to explain the role of the hormone *leptin*).

K. Besides obesity, what other health issues have been linked to short sleep times?

L. What is the prevailing attitude about sleep in America?

M. When the research subject (Jonathan) is sleeping in the room, what is the purpose of the doctor in the other room who is monitoring his sleep (that is, what specifically is she trying to prevent?)

N. As we get older, what happens to the amount of deep sleep we get? (How significantly does this amount change as we get older?)

O. What major effects do we see with Jonathan after only 4 nights of this treatment?

P. What is the difference in the mating behavior of fruit flies between when a male fruit fly has enough sleep or is sleep deprived?

Q. Why don't the scientists believe that research should focus on how we can function better while sleeping less?