



NOMBRE :..... CURSO:

OBJETIVO(S) APRENDIZAJE:	DE	OA1: Comprender textos complejos acerca de determinados temas como por ejemplo, artículos, reportes. OA5: Desarrollo de vocabulario específico relacionado a determinados temas como por ejemplo, neurociencia: trastorno del sueño.
TEMA DEL TRABAJO:		- Sleep Deprivation - Neuroscience
ACTIVIDADES APLICACIÓN:	DE	- Comprensión lectora - Vocabulario
MECANISMO EVALUACIÓN:	DE	Evaluación formativa: Solucionario por enviar el día Jueves 9 de Abril Evaluación sumativa: Pauta de autoevaluación de desempeño en esta guía a realizarse entre los días 14 y 23 de Abril.

INSTRUCCIONES GENERALES: Antes de comenzar tu guía, mira el video adjunto para que te hagas una idea de que se trata el texto. Si no lo pudiste bajar, aquí va el link: https://www.youtube.com/watch?v=Og1432ol_rQ

If you read this, the first student who sends me an email with their complete name will get a reward.

Vocabulario previo:

Deprivation -> Privación

Clumsiness -> Torpeza

Measure -> Medir

Reliable -> Confiable

Nap -> Siesta

Caregiver -> Cuidador

1. Reflect upon the questions from the picture. Then read the text and answer the questions below. *Reflexiona sobre las preguntas de la imagen. Luego lee el texto y responde las preguntas de abajo.*



Sleep Deprivation: A report

Predict

1. What is sleep deprivation?
2. Why is sleep important?
3. What can people do in order to sleep better?

Introduction

Sleep deprivation occurs when people consistently fail to get enough sleep. The condition affects all ages, including adolescents. An individual's need for sleep varies, but adults usually require eight hours and younger people need nine hours of sleep each night (see Table 1 for actual amount of sleep adolescent school children get). There are various estimates of the number of Americans who suffer from sleep deprivation, but one reliable source says 20% of the population is affected every year. That would mean about 62.7 million Americans are currently afflicted with sleep deprivation.



Table 1

Amount of Sleep on School Nights as Reported by Adolescent School Children:
National Sleep Foundation Sleep in America Poll

Sleep variable	Grade						
	Sixth	Seventh	Eighth	Ninth	Tenth	Eleventh	Twelfth
Bedtime*	21:24	21:52	21:53	22:15	22:32	22:51	23:02
Wake up*	06:42	06:35	06:36	06:28	06:23	06:23	06:31
Average sleep (hours)	8.4	8.1	8.1	7.6	7.3	7.0	6.9

*Average times using 24-hour clock

Data Source: <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3130594/table/T1/>

Causes of Sleep Deprivation

Sleep deprivation can be acute (coming on rapidly, but ending quickly) or chronic (lasting a long time or recurring periodically). There are three main causes of sleep deprivation: choosing to sleep too little, lack of time to sleep, and medical conditions.

Behavioral Causes

People choose not to sleep for different reasons. Many teenagers stay up after they have “gone to bed.” They “steal” time to chat with friends on their phones or tablets, read, play games, or surf the Internet. Doing this over a period of three months or more can result in behaviorally induced insufficient sleep syndrome. That sounds easy enough to remedy, but the challenge is usually to convince the patient that more sleep is needed. They may think they can get used to doing without sleep. The need for sleep used to be more widely accepted, but in modern society, which places a high value on constant activity, sleeping is often discouraged. Some “experts” even promote methods of deliberately avoiding sleep, such as taking multiple naps rather than having one extended sleep period. Stimulants like coffee and soda can also cause sleep deprivation.



Too Little Time

Lack of time to sleep usually occurs in one of two ways. It can happen when people work too much, either at school or in a job, or when sleep time is consumed by tasks that must be done, for example, caring for a sick family member. Other than finding a different job or hiring a caregiver, alternatives that are not always available, this type of sleep deprivation is difficult to deal with.

Medical Causes

There are various medical conditions that cause sleep deprivation. The breathing problem called sleep apnea, for example, causes people to wake up many times each night in order to avoid asphyxiation. Mental illnesses that cause hyperactivity can keep patients awake for long periods of time. Sometimes medications can keep people awake, and in these cases doctors can usually give an alternative prescription. Insomnia, an inability to sleep enough, can include trouble falling or staying asleep, as well as experiencing sleep that does not refresh. Factors causing insomnia include stress or poor sleep habits, but sometimes insomnia cannot be explained at all.

Effects of Sleep Deprivation

A range of physical and psychological negative effects are associated with sleep deprivation, from minor (excessive daytime sleepiness, brief involuntary micro sleeping) to severe (increased risk of high blood pressure, obesity, heart attack, diabetes, cancer, and early death). Studies have shown that rats that don't get any sleep will die in seventeen to twenty days. The uncontrollable urge to sleep can cause accidents, especially for people in very responsible jobs, like air traffic controllers and truck drivers. People who habitually operate on a sleep deficit typically encounter the following performance problems when completing tasks: difficulty in concentrating or even paying attention at all, physical desire to move around (to combat fatigue), increased reaction time, and clumsiness. They are also easily distracted, their decision-making ability is impaired, their memory works slowly, and they have to double-check everything they do to avoid errors. (See Table 2 for types of sleep disturbance affecting adolescents and their effects.) There is also evidence that sleep deprivation leads to a loss of self-respect and self-esteem.

Table 2
Adolescent Sleep Disturbance

	Once a week or more	Always/every night
Hard to fall asleep	60%	21%
Difficulty breathing when sleeping	4%	0%
Leg kicks or twitches at night	34.5%	10%
Repeatedly waking up	34%	10%
Difficulty waking in morning	73%	37%
Sleepy during day	46%	15%
Difficulty concentrating during day	55%	13%

Data

Source: <http://www.aasmnet.org/jcsm/articles/030104.pdf>

The High Cost of Losing Sleep

In 2010, the University of Maryland estimated the annual cost in the US of what one researcher calls the “24-hour, seven-day culture” evolving in the workplace:

- Direct costs: \$16 billion

- Indirect costs: \$50–\$100 billion, which includes expenses sustained in sleep-related accidents, lawsuits, property damage, hospital bills, and death.

That is a staggering price to pay and, as an annual expense, it is a significant drain on the American economy.

Studies of Sleep Deprivation

Two Famous Case Studies in

Total Deprivation

Experiments in total sleep deprivation have produced startling, regrettable results. One famous case was Peter Tripp, a New York disc jockey who stayed awake for 201 hours broadcasting, as a publicity stunt. Tripp performed this feat first in a glass booth in Times Square, then in a hotel room with laboratory equipment monitored by medical personnel. The longer Tripp went without sleep, the more medical assistance he required, because his brain gradually gave way under the strain. In three days, he developed strange emotional reactions (laughing, anger) that didn't match the stimuli producing them. The next day, Tripp began to hallucinate, which soon progressed to full-blown paranoid psychosis. Unfortunately, Tripp never made a full mental recovery. From then on, he would experience attitude problems, which cost him his job and his marriage.

Another famous subject of a sleep deprivation study, Randy Gardner (260 hours without sleep), suffered the same symptoms but did not experience lasting unpleasant effects. Tripp was an older man at the time, and took medication to stay awake, which Gardner did not do. For obvious reasons, studies of total deprivation of sleep are no longer performed on either animals or humans.

Sleep Restriction Studies

Sleep researchers nowadays are interested in studying sleep restriction, measuring what happens to the brain and body when people get some, but not enough, sleep. These studies focus on either mental disruption or measurable physical changes, like altered hormone or neurotransmitter levels.



Two Studies, One Conclusion

Two well-known studies of restricted sleep, conducted simultaneously, gave a comprehensive picture of what happens if subjects sleep anywhere from three to nine hours per night. In considering those numbers, it is important to keep in mind that Americans average 6.9 hours of sleep per night during the week.

Both studies used the same performance test, called the psychomotor vigilance task (PVT), which measures reaction time while pressing the space bar in response to a changing display on a computer monitor. The PVT is easy to do successfully for the well-rested, and is considered a predictor of workplace functioning. Subjects sleeping eight or nine hours did consistently well in the PVT, showing no changes as the studies went on. But the other groups, even the seven-hour sleepers, not only performed less effectively to begin with, but deteriorated in competence as the studies progressed. The effects were very clear, and the cognitive deficits induced by lack of sleep were serious enough that they would be noticeable on a day-to-day basis.

Results indicate that there are a few people who can sleep five hours or less each night, and there are others who need nine to ten hours of sleep. Most human beings need eight hours in order to perform well. Unfortunately, it seems that too few of us currently achieve that standard.

Adapted from:

<http://fallingasleep.net/deprivation>

Activity

1. Match the words and phrases from the report to the definitions. *Une los conceptos del reporte con las definiciones.*

- a. Refresh
- b. Impair
- c. Strain
- d. Avoid
- e. Clumsiness
- f. Urge
- g. Caregiver
- h. Keep in mind
- i. Startling

2. Match the sections of the report to the information they contain. *Une las secciones del reporte con la información que aparece abajo.*

- a. Causes of sleep deprivation
- b. The high cost of losing sleep
- c. Sleep deprivation studies
- d. Effects of sleep deprivation
- e. Studies of sleep restriction
- f. Introduction