

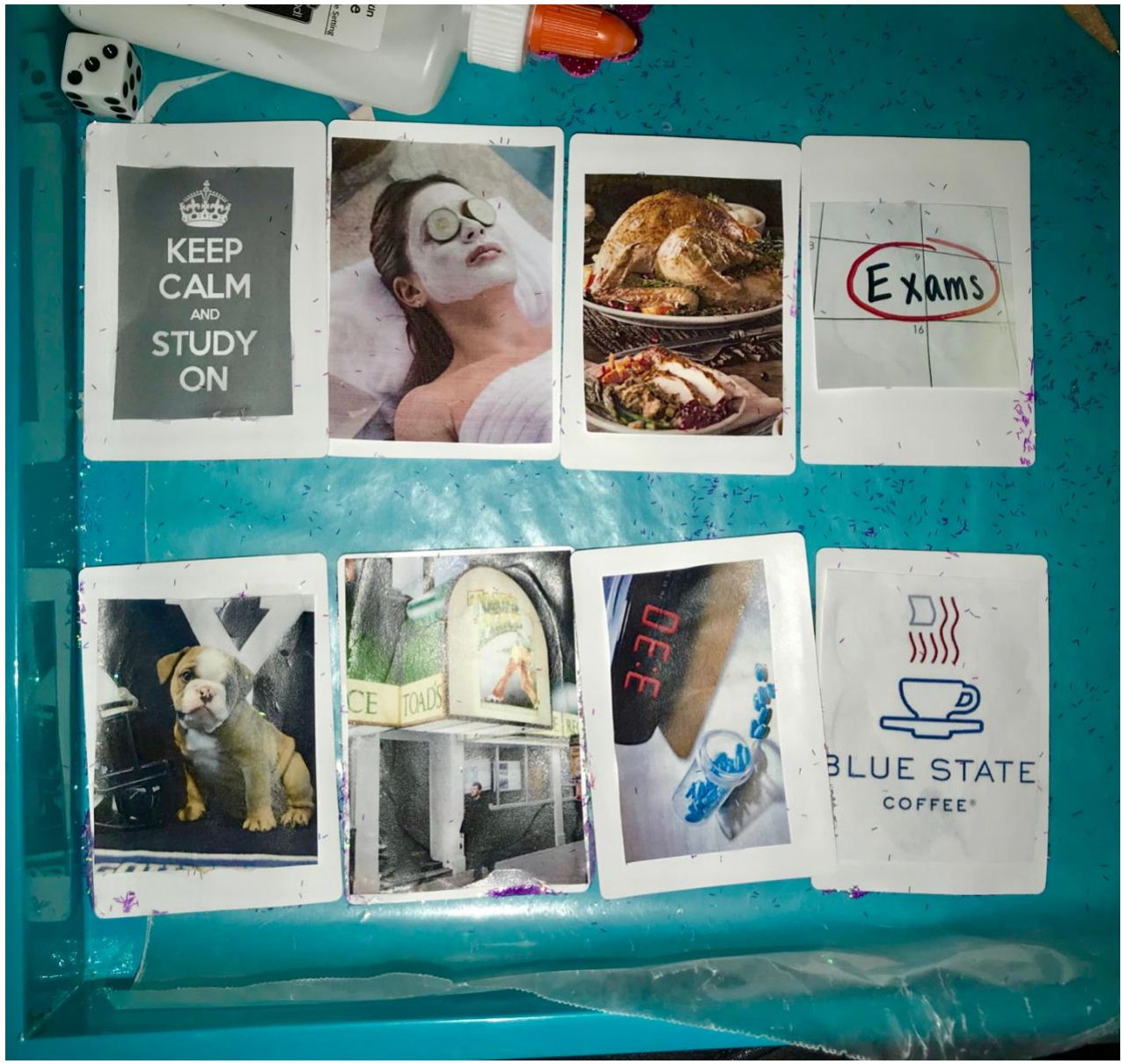
NAP: The Game of Sleep Deprivation

By Andrea Fleming

This board game, designed specifically for Yale students, aims to raise awareness about the consequences of sleep deprivation and the benefits of healthy sleep habits for college students. Given the frequency of essays and exams, and the crucial role sleep plays in memory consolidation and one's ability to pay attention, sleep health is critically important in academic settings. Yet unfortunately, college students only sleep for an average of 6.0-6.9 hours a night, as opposed to the 7-9 hours recommended by the medical community. Activities such as board games have the power to raise awareness of the scientifically-proven risks of sleep deprivation in a fun, stress-free way. At Yale, this game could be placed in residential college butteries, which are often popular late-night socializing spots for students. Since many students live in their residential colleges, it is easy for them to travel from the butteries to their dorm rooms. Playing *NAP: The Game of Sleep Deprivation* might encourage students to go straight to bed after being reminded of the physical and cognitive benefits of sleep.

The game begins with two very sleep deprived contestants. The goal is to make enough healthy sleep decisions to advance to the end of the game, which entitles the victor to peaceful slumber for the rest of their days. The playing cards, which contain sleep-related hypotheticals, can either set one back or advance one forward. The player who reaches the "Trivia" square first would have to answer 3 sleep-related trivia questions correctly to win the game. If they do not, the other player may roll again and try to steal the win! Happy sleeping!

Playing Cards



Guide to Purple (Negative) Cards

Handsome Dan

As you climb into bed, exhausted from a hard day of Yale, you suddenly remember that your best friend told you Handsome Dan had posted a new Instagram photo. You take out your phone, open the app, and proceed to admire his new fall sweater choices. Although you only meant to spend a few minutes on your phone, soon you've scrolled all the way back to his puppy days. After 15 minutes of searching for available bulldogs in the New Haven area, you put down your phone and try to go to sleep. However, the late-night light from the screen has confused your suprachiasmatic nucleus, which sends signals to sleep hormones after responding to light and dark indicators from the eye. You lie awake for another hour, unable to sleep. Move back 1 square!

Blue State

Unfortunately, you had one too many meetings at Blue State today, and consumed four cups of coffee from the hours of 4-7pm. If each cup of coffee contains approximately 100mg of caffeine, you would have consumed about 400mg of caffeine over the course of the three-hour period. You assume you'll be fine by midnight, but what you don't realize is that the half-life of caffeine can last up to 5 hours. That means that at midnight, your system might still have half the amount of caffeine found in your last cup of coffee, as well as varying amounts of the previous cups. Since you're only an occasional coffee drinker, you're pretty sensitive to caffeine. You finally fall asleep around 2am, only to have to wake up for that 9am class you now regret taking. Move back 1 square and think before you drink!

Toad's

It's Wednesday—you know what that means. Although it's midterm season, and you've only been sleeping 6 hours a night on a regular basis for the past 12 days, you think some carefree fun could help you relax. After dancing up a storm at Toad's, you feel exhaustion coming on at around midnight, but you power through, and end up at Brick Oven Pizza until 3am. However, you have a 9am class the next day. At this point, you will have consistently slept only 6 hours per night for about 13 days, and your body is reacting the same way it would have had you pulled an all-nighter. You've become irritable, moody, unable to concentrate, yawning all the time in class, and falling asleep in the cubicles at Bass. Move back 1 square and then hit the hay!

Finals

The dreaded beast. You watched a few too many episodes of *Friends* this semester, so you have some serious make-up work to do. You debate going to your professors for extensions, but you figure you can handle it. You start staying at the library until 3am most nights, then awakening at 9am. After a few weeks of doing this, you begin falling asleep in review sessions and almost overslept one of your exams. After several of your professors chastise you for your impromptu sleeping bouts during their class, you decide to go to a sleep clinic to see if you can get diagnosed with narcolepsy, which you naturally assume would serve as a good excuse for falling

asleep constantly. However, after the doctors at the clinic evaluate you, they say you cannot possibly have narcolepsy, since you do not experience REM dreaming, your sleep onset time is close to 40 minutes. They tell you that you are simply suffering from insufficient sleep. Let's try some sleep management tactics next time! Move back one square.

Guide to Blue (Positive) Cards

Thanksgiving Break

One of your mother's favorite pastimes when you are home visiting is to throw open your blinds at 8am singing "It's a bright and shiny morning." You do not enjoy this, especially since she knows you're a night owl. At the beginning of this Thanksgiving break, however, you started to tell her about some of the science between morningness and eveningness. She was shocked to learn that people can be genetically pre-disposed to prefer nighttime or morning time (she just thought you didn't want to run the family's daily 9am 5K!). Consequently, she let you sleep until you had gotten a full 8 hours each night of break. Excellent work – advance 4 spaces!

Meditation

You're what they'd call a casually healthy sleeper, occasionally getting the recommended amount, yet often staying up late into the night watching Netflix or browsing the internet. Yet after learning about the destructive public health potential of sleep deprivation in a sleep seminar, you decide you need a substantial life change. As an aspiring pediatrician, you know your sleep habits are crucial to your future patients' lives. You debate a number of different methods to help you forego your usual late-night online habits, and decide to try mindfulness exercises and meditation. So far, it's been going incredibly well: not only has your sleep quantity increased from an average of 6.5 hours to 7.5, but you also feel like your sleep quality and efficiency have measurably improved as well. This may also have something to do with the fact that you've started taking long, relaxing baths about an hour before bed while listening to calming music. You have earned your advance of 5 spaces – and also congrats on finding a bath in a Yale dorm.

Pills, Pills, Pills

Like the wonderful person you are, you've been helping your friend navigate some difficult family tensions, often staying up late into the night to talk it all over. When you finally try to sleep, your anxiety for her usually keeps you tossing and turning for at least an hour. One day, you overhear a classmate talking about his Ambien usage, and beg him to spare a few. That night, however, you get cold feet, and begin worrying that you don't really know what is in these pills, or what reaction you might have. The next day, you decide to go to Yale Health, to see what they recommend. After some deliberation, they refer you to one of their counselors to see if cognitive behavioral therapy could help with your sleep issues. You find that talking about the anxieties that have led to your inability to sleep is immensely helpful in relieving some of the pressure. You decide to make your room into a place just for sleep. You begin advising your friend more during the day, or in your common room. Your methods seem to be helping so far; well done on not popping those pills! Move ahead 6 spaces.

Finals

In years past, you have emerged from finals looking like a cross between Voldemort and the Joker after weeks of last-minute studying. Not this time. Over Thanksgiving break, you crack open the textbooks early, and even map out a study schedule that leaves you plenty of time to fit in a solid 7 or 8 hours per night. You make it a point to try to integrate the problems you encounter while studying into your dreams, thinking about the trickiest conundrums right before you go to sleep. Your memory consolidation is booming, your attention span is impeccable, and you ace your exams. Advance 5 spaces!

Trivia Questions

- I. What is the relationship between sleep and mortality? That is to say, is it a linear connection, where the more you sleep, the lower your risk of mortality?
- II. What gamma frequency has been associated with lucid dreaming?
- III. About what percentage of people in the U.S. are not getting enough sleep on a regular basis?
- IV. What nuclear disaster caused the evacuation of close to five million people?
- V. What is the hormone whose levels begin to rise 2-3 hours after sleep onset, and continues to rise into the early hours of the morning?
- VI. What is the most common self-prescribed mode of helping oneself to fall asleep?

Answers

- I. The relationship can be described by a U-shaped curve. Both sleep deprivation and over-sleeping are associated with higher rates of mortality. In long sleepers, this trend is usually attributed to underlying diseases that cause too much sleep.
- II. 40 Hz.
- III. 39%.
- IV. The Chernobyl disaster.
- V. Cortisol.
- VI. Alcohol.