

All living beings in this world have to sleep, there is a primal need to do so. Most can do this without thinking about it too much, but humans have a tougher time adapting to this primal need. We know that we need to sleep, but we don't. We actively make the choice against sleep - we would rather be busy doing something else.

All other living species in the known universe also go to sleep. Although in different lengths and processes, every living organism has been shown to have states of sleep or a similar sedation. The outcomes of the human choice to stay awake have been amazing and detrimental.

What does this mean?

The refusal to sleep aligns with societal expectations put on the working class - those who are able need to produce, work, and work harder - especially in a system that relies on labor. We are now finding ourselves in a situation where we are sleeping less to work more, to make more money, so we can sleep when we are older. It seems that we are too deep within this cycle to free ourselves.

What happens now?



Chernobyl Nuclear power plant, Ukraine.

To go to sleep is to worry about it later.

To go to sleep, one must have a desire - a desire to relax, a desire that can be self-motivated or a created desire from outside sources like having a long day, or a good workout at the gym. Continue with a safe place to lie down - one must have a designated place where they're comfortable enough to relinquish themselves.

The physical body is typically ready to relinquish itself at the end of the day. Our circadian rhythm, "the body's internal clock", acts in response to the earth's rotation, paying attention to the regular shift of day and night. We are inclined to sleep at night, this is a primal phenomenon. This inclination acts in conjunction with the buildup of adenosine, a chemical that physically weighs on our brains until sedation. Adenosine accumulates throughout the day - when a buildup of adenosine aligns with our circadian rhythm, sleep can easiest occur.

You can literally have "a lot on your mind", and it will weigh on you.

To go to sleep, you have to have the ability to turn your mind off. Many sleep-inducing functions and chemicals happen automatically as a response to time and our bodies, so long as these functions and chemicals are not disturbed somehow.

The suprachiasmatic nucleus is a system attached to the backs of our eyes. When it gets dark, the suprachiasmatic nucleus will alert our pineal gland to produce melatonin - that coveted chemical that we can now purchase - in bottled form, pill form, in little animal shaped gummies.

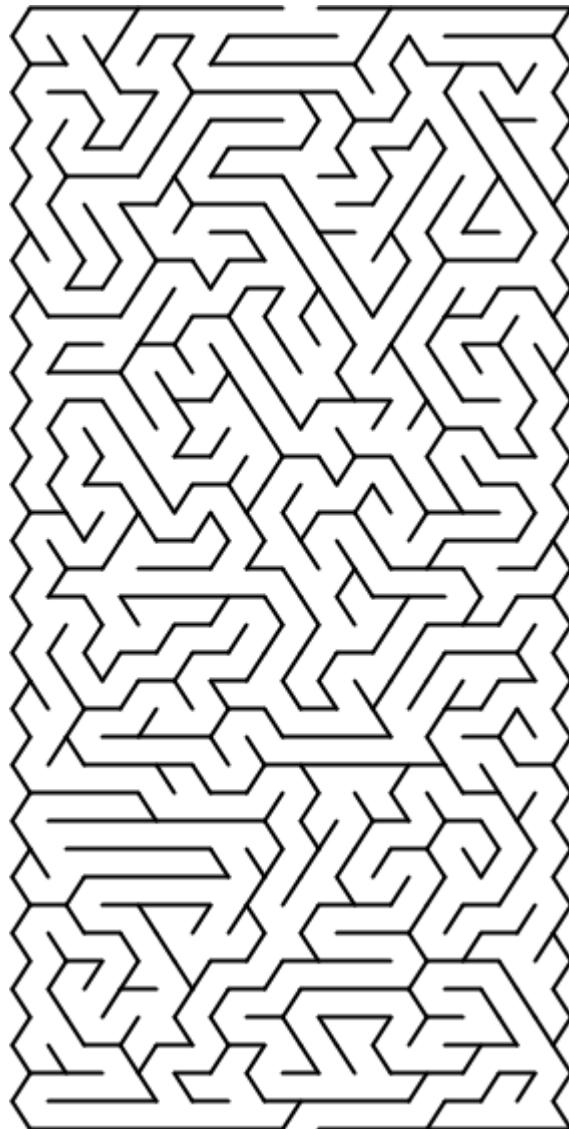
Melatonin acts as a signal, not a catalyst. Melatonin alerts the body that it's time for bed, but doesn't do much to actually create or generate sleep. There are other functions within our internal system to dictate and execute this, and they rely on us buying into them.

You can fall asleep much faster if you are able to let go of thoughts, or to allow thoughts to pass freely throughout your journey to sleep. This, in the Western world, may be one of the most difficult obstacles to overcome when going to sleep. There are many reasons for this - it is important to note that the initial act of falling asleep requires not only an ability to clear the mind, but it requires a good deal of discipline in your waking life, and even a bit of good luck. There are many ways to get good sleep, but there are twice as many ways to disturb sleep.

It is important to know that these prerequisites can be easy for those who live regular lives - those who travel often, those with pre-existing conditions, and those who are without homes or beds to sleep on, find themselves often unable to sleep or seven rest. This inability to sleep may set a recourse for the rest of their lives.

To go to sleep is to lie in a protected place as your body relinquishes its physical forces to routine mental processes. It is almost spiritual, the way that we relinquish our bodies to sleep. The quality of sleep obtained determines the quality of the relationship one has with sleep's restorative effects. The more quality sleep one gets, the more restorative it becomes.

a maze! help the sandman go to bed.



What does one have to lose from going to sleep? We sleep because we have to, but what would be different if we did not have to do this? Going to sleep is one of my favorite things. Going to sleep is a lot of people's favorite thing.

The act of going to sleep is beautiful because of its indulgence. This is something that we all have to do if we want lives filled to the brim with longevity and experiences. The paradox is that we have to negotiate action with inaction.

There is a divine comfort to laying in bed - Developing a deep, personal relationship with your bed. I sleep on a medium-firm pillow top hybrid mattress with white sheets, a green duvet, and four pillows. I am familiar with the feeling of my body as it meets the contours of the bed, I am familiar with the caress of my head and neck as it is supported by my pillows - one soft, 2 medium, and one firm.

For most of us, we look forward to sleeping because it is familiar to us. The time that we do so, the feeling of falling into a state, the routine that we have developed for ourselves around these impulses. Although most of us don't want to go to sleep - excited children, an overworked salaryman - many of us do look forward to these hours in bed.

Going to sleep for roughly eight hours a night will double back on its investment - you will feel centered, you will feel refreshed, you will feel ready to take on the day.

Those who work physical jobs can benefit from the healing properties of going to sleep. During sleep, the body will restock on cellular energy - sleeping can reduce inflammation and accelerate physical recovery. Athletes and labor workers not only heal physically while asleep, but the motor functions that they instill while performing these actions are ingrained in the brain - each day, performance will increase and muscle memory will

help them perform better. The same applies to those who do not work or act in a physical sector - instrumentalists, video game players, typists and the like can benefit from sleep's ability to solidify motor functions. Sleep makes perfect.

After a rough day, there is nothing better than having a moment to yourself to reflect. Time asleep is inherently spiritual in this regard. Going to sleep has the capacity to recalibrate our emotional functions, thus having the ability to strengthen emotional and spiritual ties. Without sleep, yesterday's problems will roll over. The emotional intensity of human experience is processed and digested when we are asleep.

Many of us look forward to the nighttime for the possibilities offered to us. A large percentage of the Western population works a morning to evening schedule, but globalization has made it easier to exist to live in a 24-hour world. Some of us don't want to go to sleep at night because we have other things to do, and you can just can opt to sleep during the day. Some of us have to work second jobs. Some of us want to go dancing. Some of us are busy handling business.

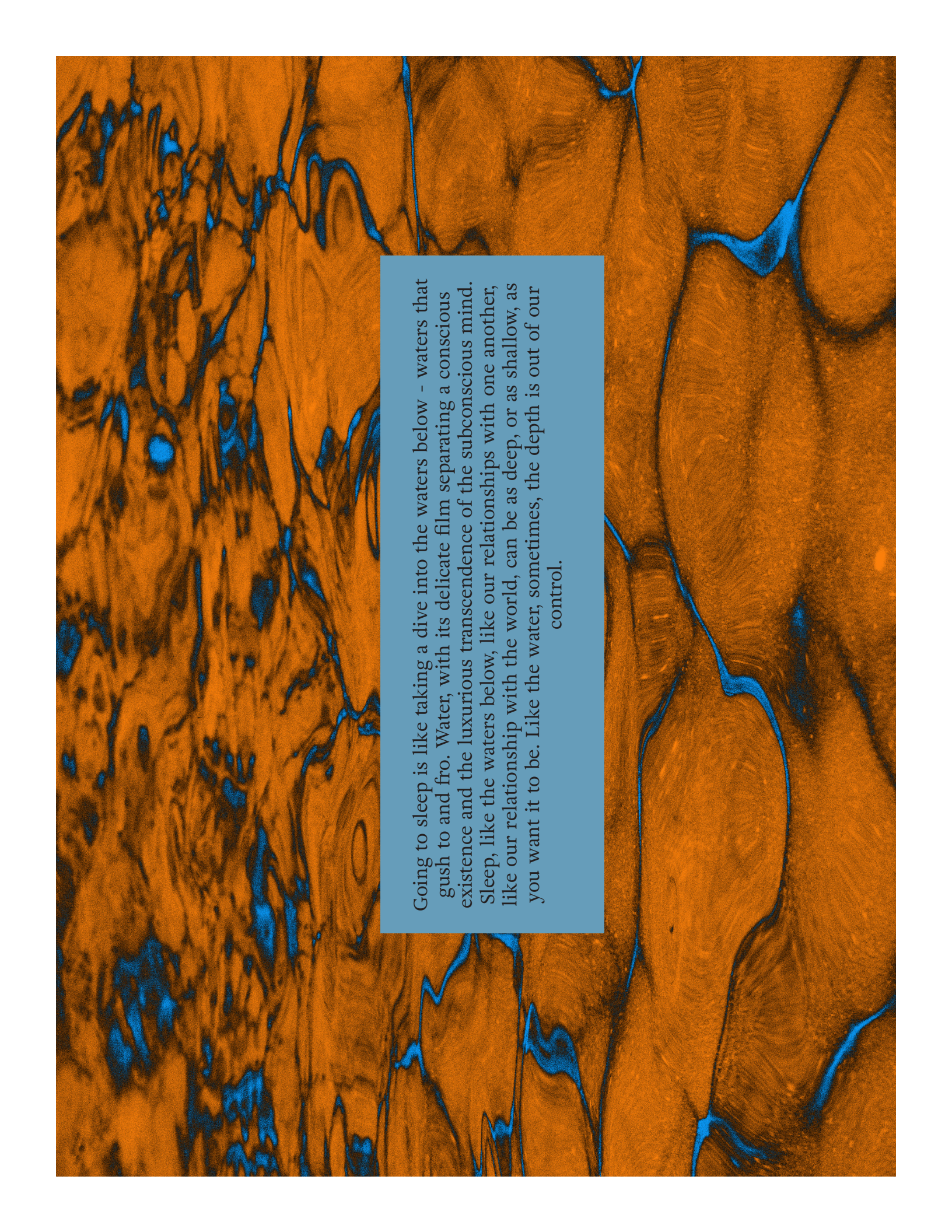
The nighttime is a time when people are supposed to be sleeping - everyone who chooses not to do so has an advantage in that they have more time to spend - in the Western framework, it is important to consider time in terms of its monetary value. The body awake can accomplish more than the body asleep can accomplish at that same moment, right? This means that it can make more money, and this contributes to 24-hour culture that needs money (and people making it) to exist.



Money entices people to stay awake and work, because this money can be exchanged for goods and services - some of which are necessary to exist. If you can exchange money for goods and services, you can capitalize on your time. Instead of making dinner, you can get a few things done as it is being prepared and delivered to you. With money, you can afford to go to sleep for eight hours a night. Those who work hard are supposed to be recognized for their hard work with money and accolades, but this isn't always the case.

We stay awake in order to pursue goals that we have set for ourselves. These goals can have a great range - they can range from monetary goals (running a business, robbing a bank, waking up before the stock market opens) to physical goals (having sexual intercourse, working out at the gymnasium, traveling overnight) to emotional goals (to cry, to create, or to engage in a heated argument with another).

We sleep because we have to, but many of us forgo these dreams to pursue our duties or aspirations. You won't be ready to go to sleep if something is "on your mind", that you may be preoccupied with forecasting a series of events related to a specific situation, that you may not be able to relinquish your physical power because there is one thing more that you must complete prior to doing so. The stimulation of large cities can make it tough to find mental stasis.



Going to sleep is like taking a dive into the waters below - waters that gush to and fro. Water, with its delicate film separating a conscious existence and the luxurious transcendence of the subconscious mind. Sleep, like the waters below, like our relationships with one another, like our relationship with the world, can be as deep, or as shallow, as you want it to be. Like the water, sometimes, the depth is out of our control.

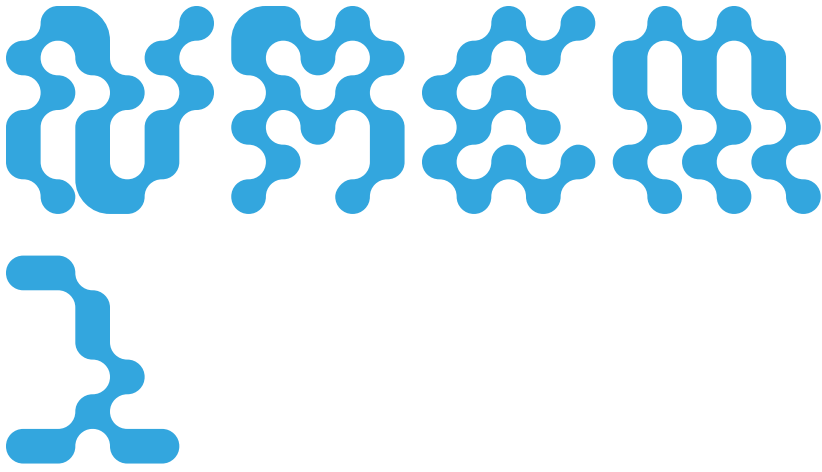
Sleep is cyclical. Sleep happens in four stages, increasing in depth. Each stage is ESSENTIAL - they each provide benefits for our mental and physical states. Not all living organisms experience sleep in this way.

A typical sleep cycle is about 90 minutes long. It is important to note that sleep, for humans, is an eight-hour process. Sleep stages will happen in order from Stage 1 to REM, but as the night progresses, some of these stages will differ in length. You will receive the majority of your Stage 3 NREM sleep and REM sleep within the LAST TWO HOURS OF SLEEP. it is important to note that this is the sleep that we are most apt to cut out from our sleep schedule, because we often have things to do in the morning.

NREM and REM sleep is a relatively new discovery, conceptualized in the early 1950s by Eugene Aserinsky, a pioneer of sleep research. There is still research to be done on the deep nuances of each sleep stage and its effects on the brain and our development, but we have a good deal of it figured out due to the sleepless individuals who contribute to this research.



THE SANDMAN RIDING A BIKE BUT THE BIKE IS A CLOCK.



Our sleep gets deeper and deeper as we progress from stages 1 to 3. It starts as soon as you lay your head down, with NREM-1 (stage 1 sleep). Typically lasting from 5 to 10 minutes, this would look like your average cat nap. Your brain is preparing you to achieve deeper sleep. During this phase, your brain is releasing theta waves – the same brain waves associated with relaxing meditation, prayer and internal focus. These brain waves are slow and steady, unlike the brain waves created when you're fully awake or experiencing REM sleep. Your eyes move slowly, in a relaxed wakefulness. If someone were to wake you up during this time, you'll likely explain to them that you weren't asleep - you were resting your eyes. You may lie in bed, having trouble falling asleep - you are most likely stuck in this stage of sleep.

sleepy word search!



50% OF YOUR TOTAL SLEEP

This stage of sleep picks up after NREM-1 sleep, and can last from 20-30 minutes per sleep cycle. This stage of sleep equates to a power nap. We start seeing the restorative effects of the brain take place in this stage; **during stage 2 sleep, your brain is releasing k complexes and sleep spindles. These are crucial in that K complexes help to keep you asleep by blocking the perception of external stimuli that can potentially wake you up. This assures that we do wake up throughout the night. They're also an aid in our memory consolidation – the more sleep spindles and K complexes that you generate**

in a night of sleep, the more you can process and consolidate what information you temporarily stored during the day.

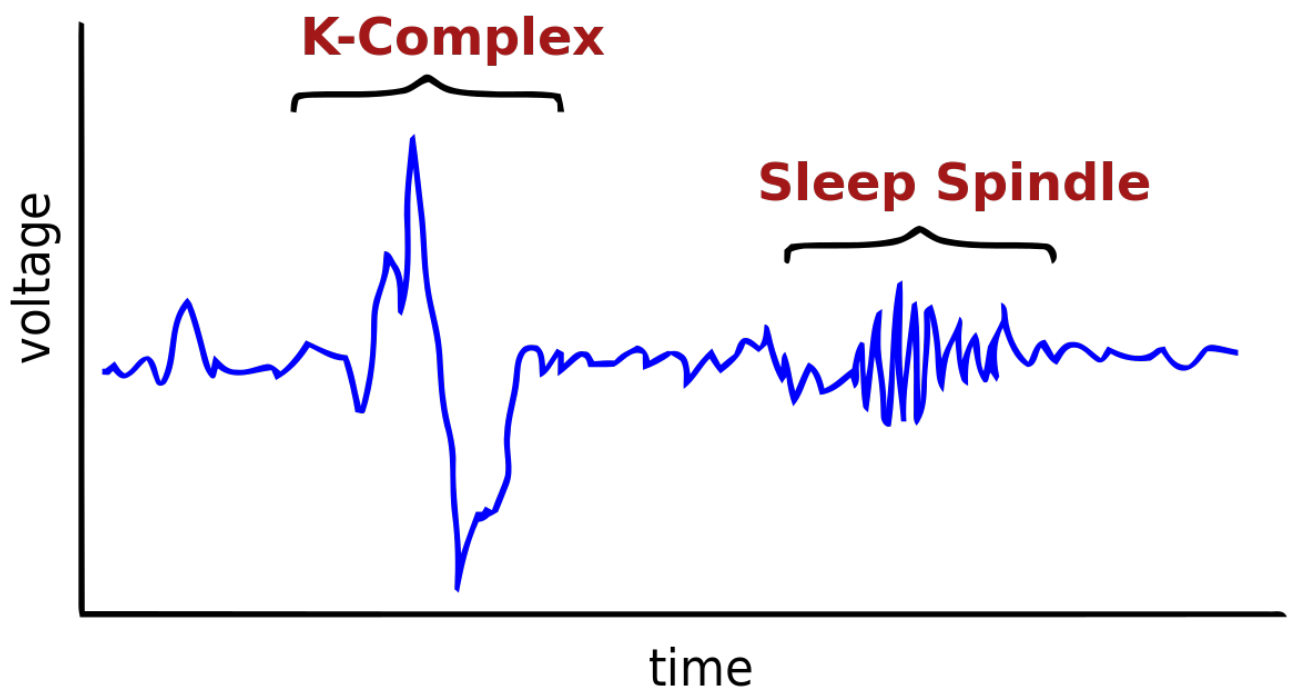
Sleep spindles restore our learning capabilities in this part of our sleep cycle. During the day, we learn things and these pieces of info are stored in the hippocampus. Throughout the day, the hippocampus will store information until it's full. During NREM-2 Sleep, Sleep spindles, these small boosts of brain activity, communicate between the hippocampus, our temporary learning storage, and the cortex, our long-lasting information archive. The result is that you awake with a more ingrained

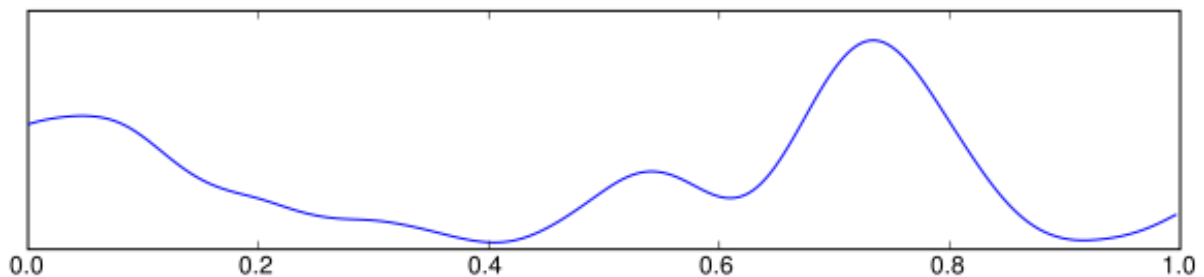
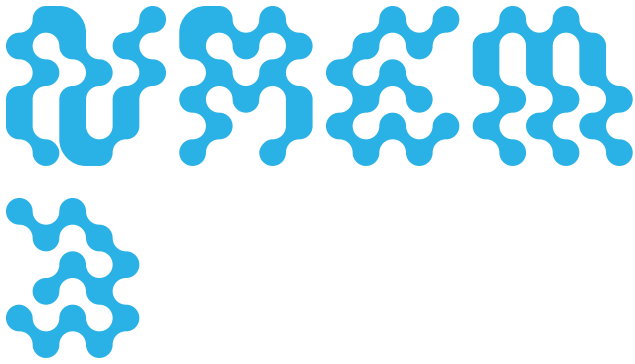
retention of what you learned the day before. Sleep spindles help to trash what doesn't need to be remembered, and move the rest to a permanent memory storage. You get more of these spindles in the last 2 hours of sleep. Senior citizens do not get them in the same capacity as younger people. A nap after class or after studying will greatly boost your capacity to retain the information because of this brain activity. This is how the skills we practice every day become solidified.

During this stage of sleep, your eyes will be more still. Your body temperature will begin to decrease and your heart rate will also decrease.

graph of k complexes and sleep spindles.

brain with a hippocampus and cortex or an annotated thing





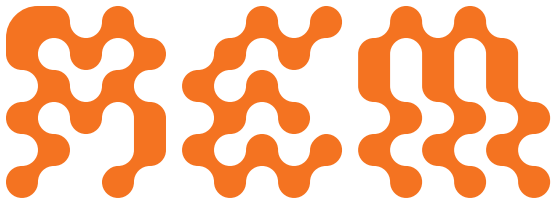
DEEP AND RESTORATIVE SLEEP

This is the “deepest” stage of sleep. With NREM-3, theta waves are replaced with delta brain waves. These are long and slow waves that can reach far across different areas of the brain. This stage of sleep can last up to an hour per cycle – Time your naps wisely, because waking up during this stage of sleep will leave you feeling groggy and disoriented. The length and depth of this sleep depends on a few factors – time spent awake, visual stimuli and age (see *Sleeping when you’re Old*), as well as drug use.

NREM3 sleep sees the repair of the physical body and memory consolidation.

During this stage of sleep, some are susceptible to sleepwalking and night terrors. Rest assured, these people are still asleep (see *sleep disorders*).

(Insert Delta brain waves).



Congratulations if you made it this far. REM sleep is interesting in that each rem cycle gets longer and longer the more we sleep (see graph) - remember that sleep lasts in cycles that are about an hour and a half each – Aim for 8 total hours of sleep always, because up to 80% of your REM sleep exists in the second half of the night. During REM sleep, the deep restorative rain waves of Stage 3 sleep are replaced with super-active alpha and beta waves that seemingly resemble the brain waves we create when we are awake. During this time, the brain is allowing us to see, which is how we experience our dreams, but our motor functions are cut off, so we don't act on our dreams (paralysis). This experience of feeling sight and motion in our dreams can be a preflight to being awake and could explain why we wake up from a dream. Contrary to belief, this stage of sleep is pretty light in comparison to stage 3. You can often find yourself being awakened from a dream.

Children 0-2 years old spend half of their sleep in REM stage, a testament to its importance- after 2 years, this drops to about 25% of the time for everyone else.

What happens to the body during this time?

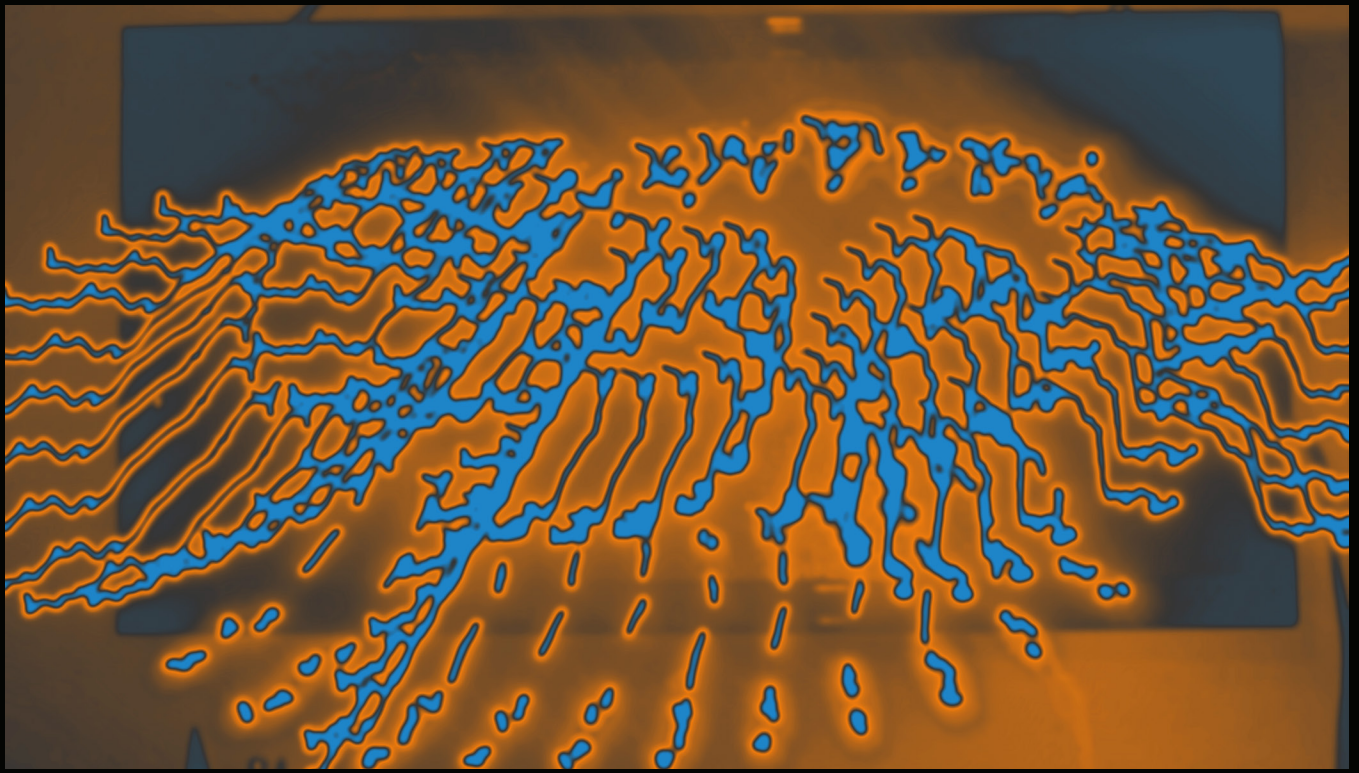
- Increased body temperature
- Increased heart rate and blood pressure
- Increased metabolism
- Increased sexual arousal
- These functions seem to prepare us for being awake.

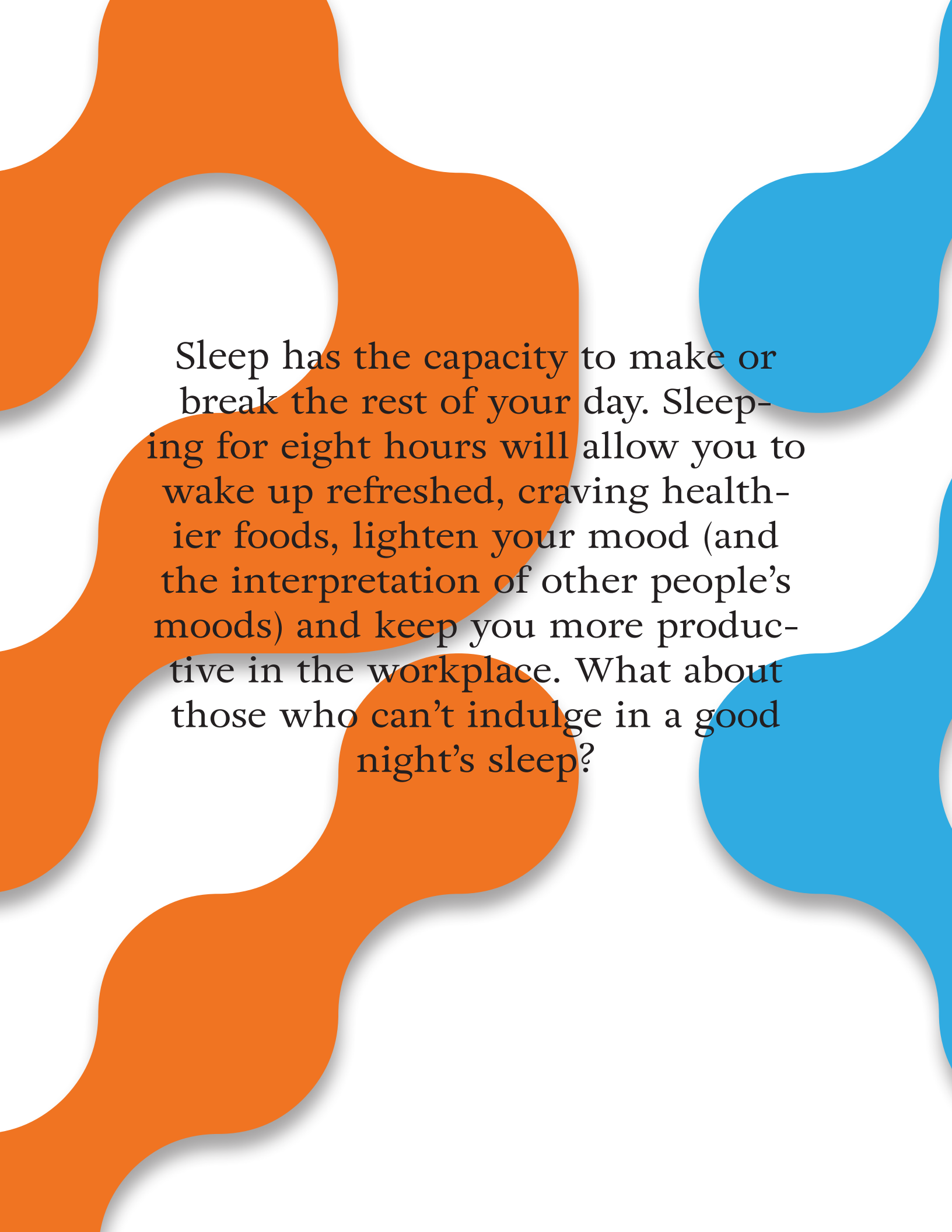
During REM sleep, your brain is making very complex connections between what you saw that day and what happened in the context of your life. Many creatives are indebted to their dreams. REM sleep is a concentrated powerhouse of mental functions, a seminal function being emotional intelligence. Humans as a species wouldnt be able to do the things we have done, good or bad, without the incredibly complex web of social relations we have created. The sleep we get at night is a hidden factor behind the relationships we build with others.

image centerfold

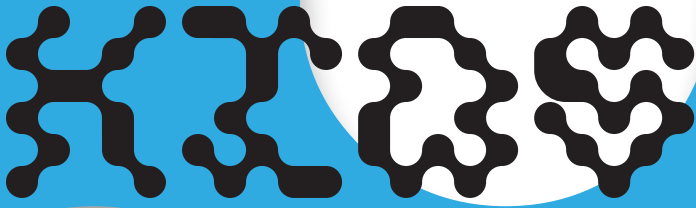
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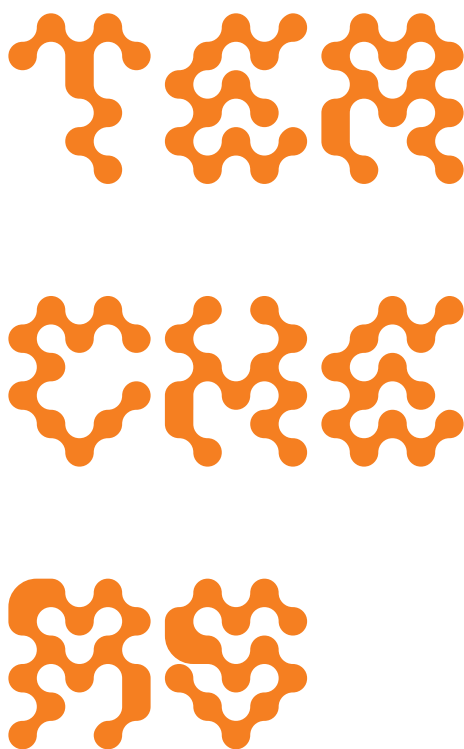
Sleep has the capacity to make or break the rest of your day. Sleeping for eight hours will allow you to wake up refreshed, craving healthier foods, lighten your mood (and the interpretation of other people's moods) and keep you more productive in the workplace. What about those who can't indulge in a good night's sleep?



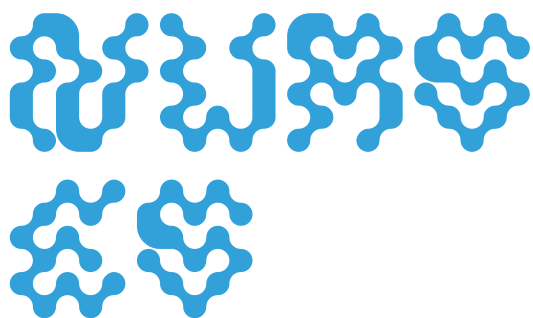
School children have a different circadian rhythm than their parents, it is silly and nonproductive to think that their growing bodies are aligned with our own, fully developed selves.

Children are wired to sleep much more, and teens are wired to go to sleep later and wake up later than older people , but a parent will typically enforce an earlier bedtime for children so they can get up for school, which, in the United States, typically starts between 7-8 AM. You have to wake up earlier than that to get ready for class - you can sleep in if you choose not to eat breakfast, but this is not my recommendation. Kids who ride the bus may need to wake up even earlier in order to actually travel to class, which is an advantage to children who are driven to school by parents, drive themselves, or live close to their school. Some youth participate in extracurriculars, and after that kids have homework, family time, house chores, getting ready for the next school day, and everything else that happens in between before their bedtimes. The life of a teenager or young child is mystical, transformative, and sometimes rough - this requires more sleep, because the youth will need it to ensure that their adult bodies and minds are fully formed. Let us not forget that the blue light from cell phones, TVs and tablets keep children up even longer. It is no surprise to me that children are sleeping during class - I was often found asleep in my History classes and Math classes.

Teachers and students have similar schedules - the difference is that teachers have to be in the classroom before students do. After school, some teachers act as club sponsors or coaches, which requires being at school even longer (they're usually the last ones to leave these functions). If teachers have children of their own, they're going home to help them with homework, eating, bathing and getting them into bed. Instead of homework that students have, teachers have to grade the homework that they assign. I couldn't imagine being a teacher, educating multiple overcrowded classes a day, and then grading every student's homework. More advanced classes mean more advanced assignments, which require a thorough oversight in order to be graded properly. It's undeniable that a lot of this grading happens outside of school hours - teachers may take a weekend day or long hours overnight to grade, enter the grades into their systems and provide comments and assistance to students. If this lifestyle has an effect on a teacher's quality of sleep, do you think that it would correlate with the quality of education being given to students?

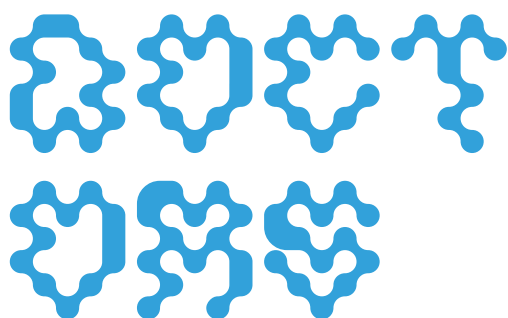


Tired teachers and tired students can often be seen together.



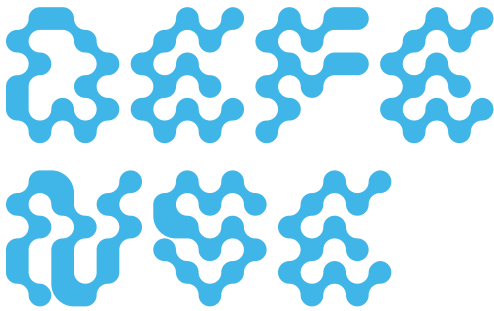
Nurses, doctors and surgeons all have to go through rigorous health programs and residencies in school to become recognized and accredited health professionals. We are all aware that sleep deprivation can take a toll on our motor functions (falling asleep behind the wheel is a good example). Would you trust a sleep-deprived surgeon to operate on you for six hours?

Sometimes, you have to.

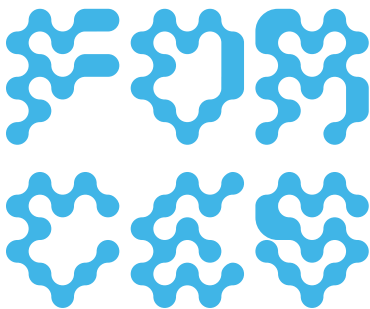


We confide in our doctors when we don't feel well. We trust that a doctor will listen and understand our concerns, and provide the proper remedy for us. Is it likely that a tired doctor is less likely to believe or listen to our concerns? Is it possible that our ailments can be misinterpreted, or that we can be misprescribed medications? Would you trust a tired, overworked, underpaid nurse to take care of your loved ones?

Sometimes, we have to.



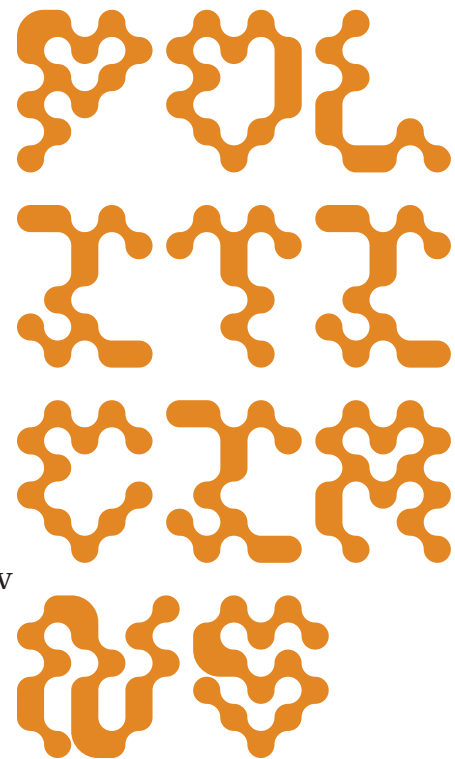
The amygdala is a part of the brain that is responsible for the processing of emotions in ourselves and the reception of emotions in others. Friendly faces seem friendly when your amygdala is not overactive - we are able to see the calm in others. There is a noticeable lack of judgement that takes place when you're tired - when sleep deprived, it is easier to overlook the complexity of human interaction- a complexity that developed from REM sleep over thousands of years. We often don't think about the subconscious effects of language, tone, nonverbal cues, and intent as it relates to our perceptions of others, or our reactions to those perceptions.

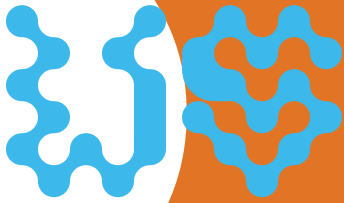


How much sleep do you think those in the police force (or US Military) are getting? Do you think that a lack of quality sleep has anything to do with how police officers do their jobs? The defense force is a high-stress environment as it is, because those within are expected to always be on the lookout, or to preempt bad things from happening. It's not unrealistic that a sleep deprived cop can snap on the wrong person. Similarly, it is not unrealistic that sleep deprived court judges and juries are less likely to understand the full story as it is presented in court, or be completely neutral and honest parties.

We are supposed to trust our politicians (local, state and national) to make incredibly complex ethical decisions on our behalf, and to govern a capitalist state that relies on everyone working. It is no doubt that these chairpeople aren't getting enough quality sleep at night.

It is disturbing to consider how the elite of this nation, our vetted leaders, can be conversing with one another and making critical decisions on our behalf without getting enough sleep. Decisions are being made about the nation's finances, the nation's safety, and the nation's public health every day. Much of the process behind these decisions lay behind a curtain, far from our eyes but not far from our scrutiny and critique. We created a system of checks and balances, but those who operate within this system may not be balanced themselves. How would our government operate if everyone got a regulated amount of sleep? Would we have experienced the amount of war, hardship, and stress that we did in the past? Would our current trajectory in terms of climate, international relations and public unrest be the same? Would we have made different decisions as a nation?





The implications of sleep deprivation on our health are not to be understated., it effects all of us. This sleepless culture that's been ingrained in us, combined with a lack of universal preventative health care, the variety of unhealthy foods that are within our reach (which are often more accessible and affordable than healthier foods, and are actually craved MORE by the sleep-deprived mind), and the sleep deterrents associated with our 9-5 work schedule and technology don't really equate to a healthy relationship with sleep, do they?

We are a sleepless nation of zombies, but we don't often think of sleep as the culprit. Sleep (or simply prioritizing it) becomes a radical practice. In a capitalist landscape, you're always expected to be available. When you're not at work, you are often expected to be on call. It is not abnormal for some of us to get called into work early, or on our days off.

What would change on a societal level if businesses closed for afternoon breaks and we as a society penciled in time for afternoon naps? What if we adhered to bedtimes? What if the human body was seen as something to be taken care of and not seen as a source of labor?

HOW TO SLEEP (AND WHAT NOT TO DO)

We must begin to think of sleep as an essential part of life – something effective with discipline and routine. Here is a list of dos and don'ts.

DON'T: Use your phone before bed, or fall asleep to the TV. The blue-light in these screens are proven to block your melatonin production, which alerts your brain that it is time to rest. Did you know that light can enter through your eyelids? A limit of blue light exposure can help to regulate your melatonin production, and you may find that you're more sensitive to your body's internal clock without as much artificial light, as the sun tells you when you should be awake and when you should be asleep.

DO: Opt for blue-light blocking glasses if you must use technology before bed, or if you are frequently in front of a screen. Falling asleep with the TV on? Set a sleep timer on the TV so it turns itself off, and invest in a sleeping mask to block external light that you cannot control.

DON'T: Get too drunk. Alcohol is a huge deterrent in REM sleep, so much so that recovering alcoholics often experience these dreamlike situations playing out in waking life, seeing these daytime hallucinations in an event called Delirium Tremens. Alcohol in general can ruin the restorative qualities of sleep, so try limit your drinks.

DO: Have a cup of chamomile or lavender tea, sans sweeteners. Too much liquid will make you have to pee, so be careful with too much to drink before bed in general.

DON'T: Overeat. Snacks are fine, but too much food right before bed will lead to indigestion or heartburn. Give your body time to

digest everything before going to sleep - food as well as other forms of stimulation

DO: Take control of the temperature in your space. The earth naturally cools itself at night, so leaving the AC on full blast during the day can skew your body's ability to adapt to nighttime temperatures. Let the daytime breeze cool off your home during the day, and use the AC at night to help drop your core body temperature. The body falls asleep much easier when it is cooler.

DON'T: Lie in bed, fully awake. If you're up with thoughts and anxieties, it will be harder for you to fall asleep. You want to train yourself and your brain in this regard, to release thoughts as they come and not to ruminate. If your brain is active, a relaxing bath can ease the mind and drop your body temperature at the same time! It is more beneficial to do this than to lie awake in bed.

DO: Establish a relationship with your bed . Being in bed often conditions you to sleep less - try staying away from your bed unless you intend on going to sleep. When this boundary is developed, you'll find that going to sleep will become linked with laying in bed, and you may fall asleep faster.

DO: Monitor your intake. Caffeine takes over 10 hours to fully flush from your system (it lasts longer in children), and can keep you up late. Nicotine has the capacity to lower your body temperature, but it's still a stimulant, and the addictive qualities can have you waking up earlier than necessary to smoke.



NOTABLE SLEEP-RELATED INCIDENTS

A lack of sleep can literally be deadly. A rare form of insomnia, in which the patient cannot fall asleep AT ALL, will kill you within six months to a year - but what about people without this insomnia? What about people who just sleep late and wake up early? These few hours of missed sleep will add up overtime, and you cannot just catch up on them either .

CAR CRASHES

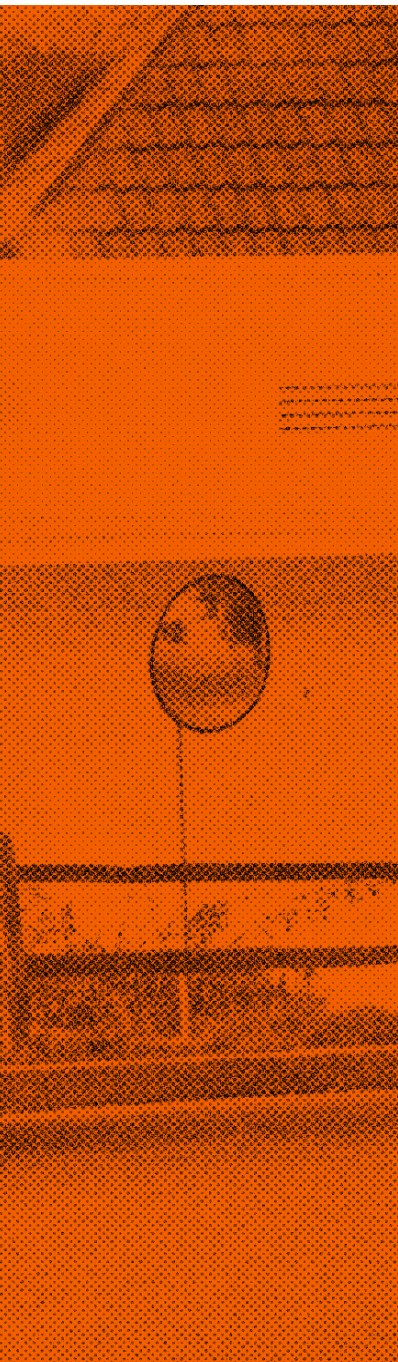
Sadly, car crashes due to sleep deprivation are not uncommon - about one death every hour in the US. A common and rather frightening cause of death behind the wheel is called a microsleep. Sometimes, the brain will have a short lapse in function, akin to NREM-1 sleep. Have you ever been riding passenger on a road trip and felt yourself drifting off before waking back up? Students face this in class as well. When behind the wheel, a single microsleep has the potential to kill you (and others) more than drunk driving. Drunk driving delivers a delayed response, and a microsleep delivers no response at all. It is worth noting that drunk and sleepless driving often happen together if you are one to leave the club at 3AM and drive home after a few drinks.

3 MILE ISLAND

Pennsylvania, 1979 - a nuclear generating station sees a malfunction of nuclear reactor #2 resulting in a subsequent radiation leak. This was the worst nuclear power related incident in United States history - Luckily, there were no deaths.

EXXON VALDEZ OIL SPILL

March 1989, Alaska - Known as one of the most environmentally disastrous oil spills of all time, 10.8 million gallons of oil are released into the Prince William sound. Over 2 billion dollars in damages and cleanup. In the hours leading up to the crash, one of the alleged third men had one cat nap in the 16 hours leading to the crash. The vessel moved out of its lane to avoid an iceberg, and did not move back into its lane.



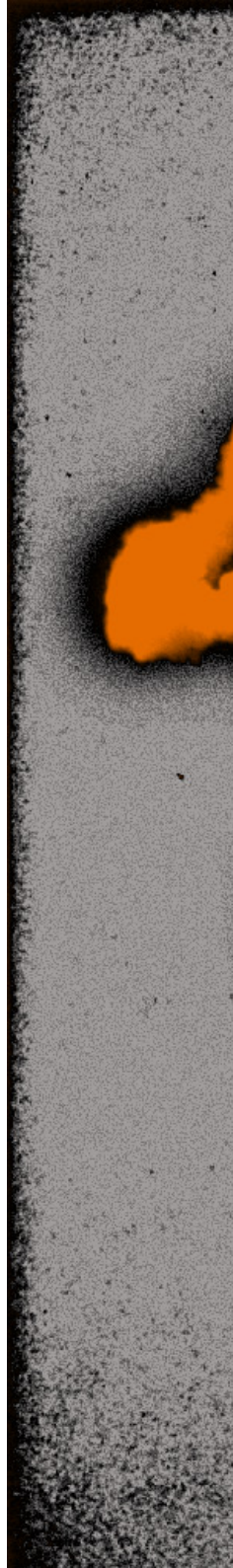
THE CHALLENGER EXPLOSION

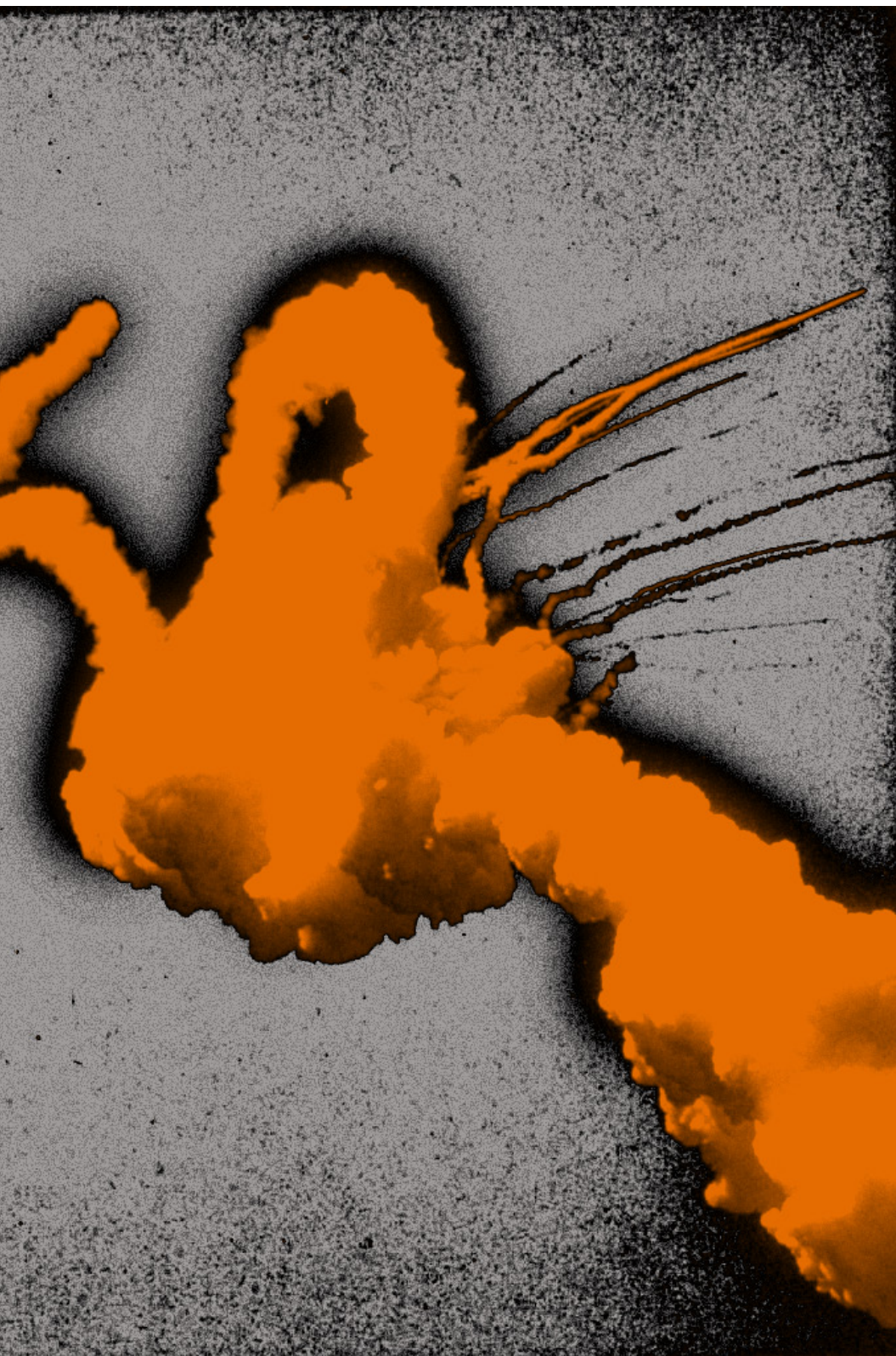
Florida, 1986 - space shuttle Challenger explodes 73 seconds after takeoff. All seven passengers died, either during the explosion or from the fall from air to ocean. It is widely reported that the tight schedule of the launch led to many accumulated oversights, and some managers only slept for a couple of hours the night before the launch.

CHERNOBYL NUCLEAR POWER PLANT

We all know about Chernobyl. The city itself leaves behind a legacy to this day, not to mention the books and movies written about it. An accident involving reactor #4 at the Chernobyl nuclear power plant in the northern Ukrainian USSR. April 1986. 9 days of radioactive contamination. Over 100,000 people were evacuated from an exclusion radius of about 20 miles. This accident had huge implications and is known as the worst nuclear accident in recorded history. Water was contaminated and so were fish. Animals and plants in the surrounding area died or were evacuated out. Much of the animal offspring were born with deformities. 237 people suffered radiation sickness after the fact; 31 died, two from the effects of the blast and 29 firemen from acute radiation. These numbers are debated because of the time radiation takes to affect a group of people.

The ruins of Chernobyl will be radioactive for thousands of years. It's been concluded that the fatigue of 13 hours shifts led to the oversights that caused this eruption (a flawed reactor design).





Forgotten dreams cut right
through me
dementia, a knife is
Aimed at the head
With nothing left said
In bed, I wait
For the sandman to pop
through
My two open windows.
I hope he brought me a
gift tonight...
For I would do anything

