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CHOATE PUBLIC HEALTH

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CONTENTS

SOUND SNOOZERS:
5 TIPS FOR A BETTER NIGHT'S SLEEP

By Claire Fu '22

Though unhealthy, waking up feeling energized and focused is more of a luxury than the norm here at Choate. Many people often overlook the quality of their sleep, believing that quantity is all that matters. Dr. Matthew Walker, a neurologist at the University of California, Berkeley, and founder of the Center for Human Sleep Science, seeks to change this attitude. He advocates for the importance of sleeping well. Here are five tips from his book *Why We Sleep: Unlocking the Power of Sleep and Dreams* that can make getting sleep a lot easier. Maintaining a healthy and well-rested body is not as difficult as you may think!

1. Stick to a sleep schedule

Determine regular times to sleep and wake up. Set an alarm! Stick to that every day, regardless of whether it is a weekend or a weekday.

2. Prioritize sleep over work

Sleep is much more important than completing one last assignment at the end of the night. It is better to complete unfinished homework in the morning than to stay up late, since it can be completed more accurately and efficiently after a good night's sleep.

3. Avoid caffeine

Drink coffee and caffeinated teas sparingly. Definitely avoid them late in the afternoon or at night.

4. Set a proper bedroom environment

Turn off all lights, lower the heat to 60-65°F (18-21°C), shut off all devices, and turn away the faces of digital clocks. Determine whether white noise or silence is better for your sleep, and try to maintain that in your room. Use earmuffs to block out noise and an eye mask to block out light.

5. Take power naps

Walker recommends taking 15-minute "power naps." Naps provide an energy spike similar to the effects of caffeine. Another option is "coffee naps," which involve napping immediately after drinking a cup of coffee.[1]

With these tips, students will no longer have to drag themselves to class five minutes late every morning, dreary eyed and yawning. Instead, they can fully immerse themselves in classes and extracurricular activities throughout the day.

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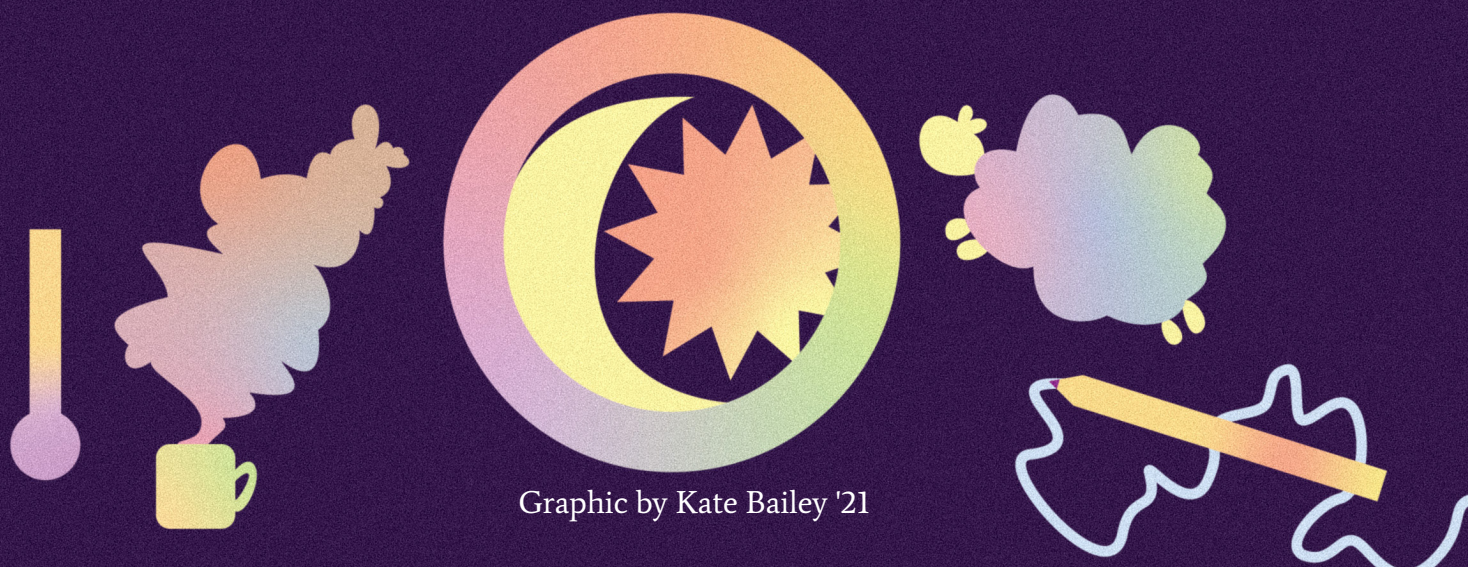

Graphic by Kate Bailey '21

ARE MELATONIN SUPPLEMENTS EFFECTIVE?

By Ryan Feldman '21 & Vidhya Pathy '20

Released by pineal glands near the center of the brain, melatonin is a hormone that helps control sleep-wake cycles. As melatonin levels rise in the evening, people are put into a state of reduced alertness that aids in falling asleep.[1]

According to the National Center for Complementary and Integrative Care, an offshoot of the United States Department of Health and Human Services, melatonin supplements are effective. These supplements have been scientifically proven to alleviate jet lag, insomnia, and work shift disorder. Work shift disorder occurs when irregular work hours affect a person's sleep schedule. Melatonin supplements have also helped adolescents and adults dealing with delayed sleep phase disorder, where the sufferer is physically unable to fall asleep before 2 a.m. Certain slow-release melatonin supplements have even shown potential in mitigating mild cognitive impairment for people who have Alzheimer's Disease and Amyotrophic Lateral Sclerosis (ALS).

Melatonin supplements are a relatively new phenomenon; their long term effects have not been studied. For dementia patients, taking melatonin supplements have led to worsened moods.[2] As of 2019, the Food and Drug Administration (FDA) has not even approved melatonin as a safe food additive. Additionally, nursing mothers are discouraged from taking melatonin supplements in an attempt to protect their children from sleep disorders; taking melatonin supplements at irregular times can negatively impact the body's biological clock. Supplements in general are less strictly regulated than both over-the-counter and prescription medicines, yet there could be potentially harmful contaminants in many of them.[2] Though melatonin supplements can aid with certain sleep disorders, they are not a cure all for sleep related issues, nor should they be treated as such.

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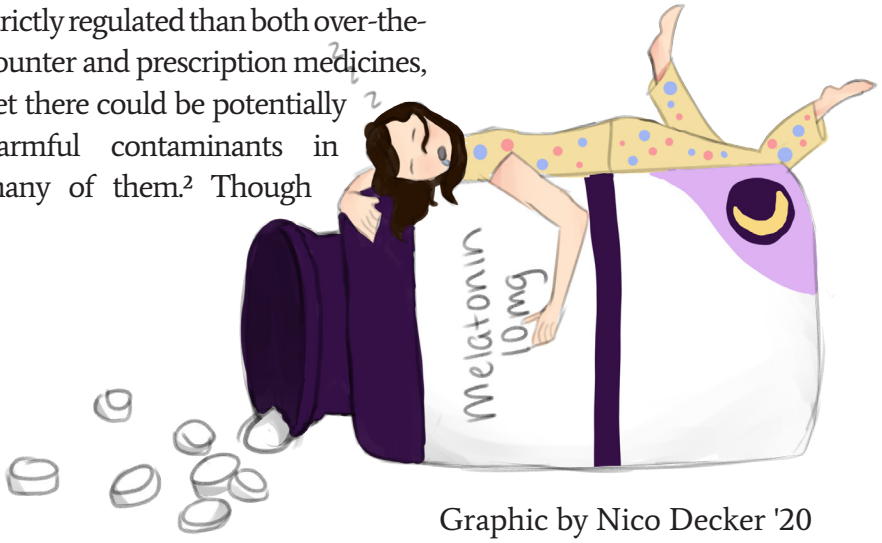

Graphic by Nico Decker '20

I'M DREAMING, BUT AM I?

By Sesame Gaetsaloe '21

Sleeping, a treasured activity among many students, can quickly become terrifying for those who suffer from sleep paralysis. This condition occurs while a person is falling asleep or waking up and prevents them from moving or speaking.[1] Some people who suffer from this condition experience difficulty breathing or chest pressure. Often, people hallucinate a person or figure intending to cause them harm. This can be a traumatic experience and causes sufferers to develop anxiety or reluctance to sleep. An episode of sleep paralysis can last anywhere between a few seconds to several minutes. It is common for people to experience sleep paralysis a couple times in a lifetime, often beginning at ages 14 to 17, but those who experience recurring sleep paralysis should seek medical help.[2] Regular episodes of sleep paralysis could be an indication of narcolepsy.

Sleep paralysis occurs when a part of the Rapid Eye Movement (REM) sleep process happens while a person is conscious.[3] The existence of other medical conditions such as chronic stress and bipolar disorder are correlated to sleep paralysis. Other causes include lack of sleep, irregular sleeping patterns, a family history of sleep paralysis, substance abuse, and sleeping on one's back.

Possible treatments and prevention methods include sleeping the medically recommended amount (9 to 9.5 hours each night for teenagers), maintaining a regular sleep schedule, and exercising daily.[4] Smoking and consuming alcohol or caffeine could also contribute to sleep paralysis and should be avoided before going to bed. In cases where sleep paralysis occurs as a symptom of narcolepsy, antidepressants can be prescribed to prevent recurring episodes.

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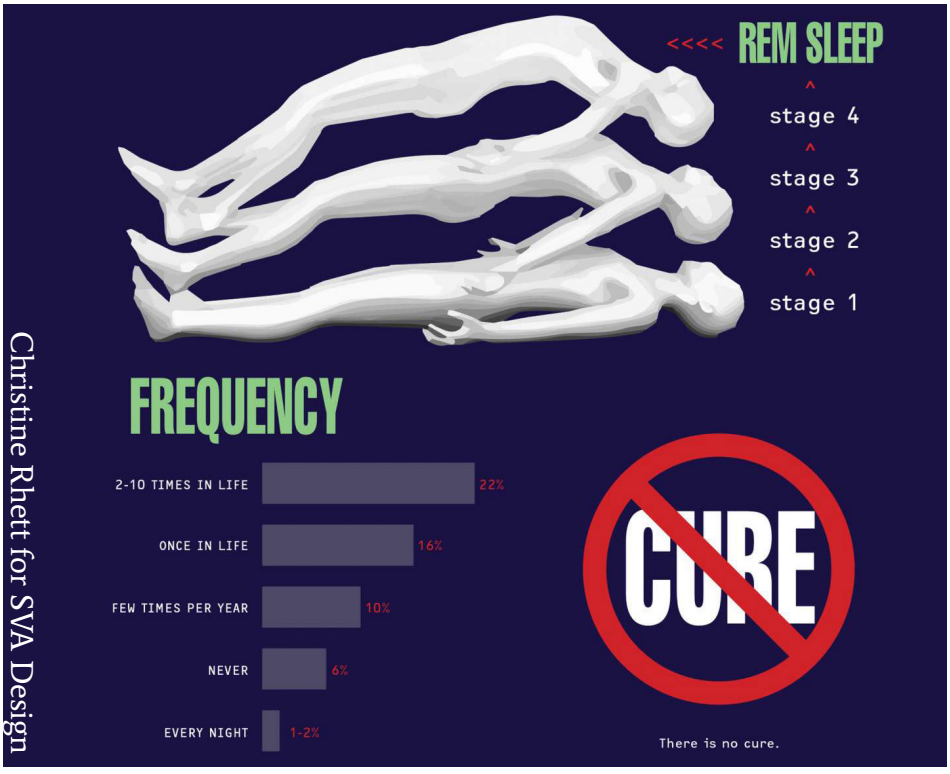

Christine Rhett for SVA Design

SYNESTHESIA: THE

By Mai Ly

What if every time you pictured a certain memory, a littany of colors appeared in your mind's eye? What if it felt like someone was touching you every time you heard a certain sound? If you live with synesthesia, a condition that amalgamates some of the five senses, you could be experiencing some of these sensations. Synesthesia is a phenomenon where the stimulation of one sense evokes another. In Greek, the word *synesthesia* means "to perceive together."[1] There are an estimated 80 types of synesthesia, with some being more common than others.[2] Grapheme-color synesthesia is particularly common among synesthetes, with the majority of the synesthete population associating letters and numbers with colors in a consistent manner. However, different types of synesthesia can occur concurrently. Only about 3.7% of the general public has some form of synesthesia, making it an extremely rare condition.[2]

Despite not being extensively researched until just a few centuries ago, synesthesia has been well-documented throughout history. In one specific case, the Pythagoreans of ancient Greece compared the relationships between musical notes and numbers. Through their obervations, they found that intervals between harmonious musical notes always have whole number ratios. For example, playing half the length of a guitar string gives the same note as the open string, but an octave higher; playing a third of the way down the string would create a harmony. Concurrently, other Greek scholars were innovating their own fields: Plato translated measurements of the planets into music, while Aristotle wrote about the relationship between flavors and colors.[2] Another interesting documentation is the case of Giuseppe Arcimboldo. Arcimboldo believed color corresponded to musical weight as much as it did to visual sensation. He created a series of colored fabrics that designated what notes musicians should play. The lower notes were represented by light colors, while the higher notes were progressively darker.[3] Though it is unclear whether or not these are cases of synesthesia, it is evident that they represent the human phenomenon of organizing senses together.

Synesthesia is a phenomenon where the stimulation of one sense evokes another.

During the late 1800s to early 1900s, synesthesia was widely studied until interest was lost due to the rise of other topics in psychology (particularly the behaviorist movement, which contradicted studies of synesthesia). However, the topic of synesthesia began to reemerge in the early 1980s, when neurologist Richard E. Cytowic published a variety of reports documenting synesthesia. His cases suggested that synesthesia emerged from the limbic system — the part of the brain where higher-order thinking occurs.[1]

There are numerous modern-age theories that attempt to explain synesthesia. One theory cites a genetically driven overabundance of neural connections. The structure of a synesthete's brain is different. Their brains are better equipped to handle more connections between neurons, which allows them to develop synesthesia. Another theory speculated that humans may be born with the neural connections that allow for synesthesia, but that most

 Graphic by Elaine Zhang '21

SENSE SENSATION

Hagan '21

humans lose these connections during their childhood. A different theory claimed that synesthesia does have a genetic root, but that the connections that carry information from the brain to the single sense areas are not properly restrained. Thus, the carrying of information is disrupted, so that different senses can be experienced concurrently. The appearance of uninhibited brain connections would explain why hallucinogenic drugs can induce synesthesia.[1] Widespread speculations about synesthesia open the doors to new theories about how the brain functions.

It shows us that our senses may be more interconnected than we think.

Synesthesia has the potential to explain how we experience the world around us. It shows us that our senses may be more interconnected than we think. When we look at something, it is not just the individual senses informing our brain of what the item is. Instead, our senses work together to create ideas of objects. Further knowledge about synesthesia could change our ability to perceive things. For example, what if we were able to "activate" synesthesia in individuals? Synesthesia may change our interpretation of recreation, psychology, disease, and even philosophy by showing that our experiences are not limited by single senses.

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HIDES CANNOT HI

By Sunny

It is highly probable that most animal skin products like leather handbags and jackets currently on the market have been processed at an Indian tannery. India possesses more than two thousand tanneries, which altogether produce two billion square feet of leather annually and make the nation one of the world's largest exporters of processed leather. Most of the tanneries are located in the states of West Bengal (Kolkata) and Tamil Nadu. The latter accounts for over half the country's leather production and one third of its exported leather products.[1] These highly profitable industries often inflict concerning environmental destruction on local ecosystems from the chemicals and leather they process. According to T. Bhaskaran from the All-India Institute of Hygiene and Public Health based in Calcutta, a single tannery site can cause pollution in a radius of about seven to eight kilometers.[2] Additionally, overexploitation and pollution of groundwater have made local water sources unfit for drinking and irrigation. This single industry has led to both extremely elevated levels of environmental stress as well as harmful decreases in the well-being of workers and residents in surrounding areas.

Environmental damages, however, usually implicate more profound societal injustices; in this case, excessive exposures to toxic chemicals associated with tanning processes disproportionately affect the health of laborers. Since tanning companies often concentrate in rural areas and rely heavily on cheap labor, the workforce mainly consists of local families and poor migrants from surrounding states.[3] These migrant workers are housed by the tannery sites in accommodations that have recently raised serious health and safety concerns. One event in particular that sparked conversation about migrant issues at tanneries happened in 2015, when ten people drowned and several others were injured in a flood of toxic sludge. Toxic slurry rushed in through a broken concrete wall, completely submerging workers that were sleeping in a nearby shed.[4] This catastrophe revealed the dangers that workers in tanneries have to face every day.

Women, in addition to migrants, are another group of victims that are particularly jeopardized in tanning industries under the larger scheme of low incomes and tremendous health risks. Female workers usually engage in menial tasks such as plucking hair by hand from hides and stirring sheets of hides in pools of chemicals. They wear plastic covers or gloves to prevent direct contact with chemicals and stand or sit for hours to finish tedious tasks. According to "Tougher Than Leathers" by Cividep India, a non-profit organization for workers' rights, women maintain far less bargaining power and job security than men. Women that work in tanneries also face a slew of health issues such as muscle and joint pains, nausea, and reproductive disorders.[3]

 Graphic by Elaine Zhang '21

DE THE SUFFERING

Sun '20

Tanning, one of the most toxic jobs in the world, involves the use of carcinogenic chemicals. Furthermore, tanners come into direct contact with these harmful carcinogens without proper protective gear. As the journalist Peter Bengsten states, some workers wear gloves, aprons, and boots, but there are also laborers standing barefoot in liters of chrome-heavy wastewater.[5] In addition, respiratory and ocular diseases exacerbated by leather dust and hazardous aerial particles require additional protection such as face masks and goggles. Negative health impacts pervade the leather-producing working class, but their low income makes it harder to attain necessary health care treatments.[3]

Minority groups that work in tanning sites, such as migrants and women, have withstood unprecedented injustices within an already unequal industry. This maltreatment can result in detrimental, chronic effects on their health and well-being. Even more devastating is the lack of media attention on the suffering within the tanning industry, a shameful side effect of a world that is constantly moving on to the next bit of "breaking news." Since the horrifying accident that drowned ten migrant workers was reported on famous news outlets, however, more people have started to become more aware of tannery injustices in the rural areas of Tamil Nadu and Kolkata. As Cividep India investigates the toxic tanning industry, major issues that come to the forefront of environmental and health injustices are lack of health knowledge, failure to implement protection, and improper disposal of wastes that deteriorate local ecosystems and inhabitants. But uncovering such sufferings to the public and attracting more attention on both local and global levels could help address internal inequalities within the tanning industry. This begins by acknowledging the toxicity of the industry and designing solutions that combat issues through both technological and humanistic means.

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MARATHONS: HEALTHY OR HARMFUL?

By Jayden Khuu '21

Completing a marathon is becoming increasingly listed on the bucket lists of Americans. We have now stepped into the age of marathon obsession, with more than 500,000 marathon runners in the U.S. in 2016. From the physical rewards of improved cardiac capacity, increased blood circulation and strengthened muscles, to the physiological rewards of reduced stress, enhanced focus and higher-quality sleep, there are many health benefits associated with long-distance running.[1] However, like many other athletic pursuits, running marathons may come with unexpected risks.

The largest concern for the majority of marathon runners lies with being underprepared or overconfident — many novices have spontaneously decided to hop on the bucket-list bandwagon. Marathons are an extreme sport, requiring the athlete to burn more energy than the body can store as glycogen in their muscles. For many marathon-runners, stepping out from long office hours to only complete a weekly 5K jog is not sufficient preparation for the challenge the body will face in a race six months later (typical length of marathon training programs), which can greatly put muscles and cardiac functions at risk. Moreover, the heart does not only have to deal with the normal aerobic demands of running, but also the major inflammatory imbalance created in the multiple-hour process of running in the marathon. According to Dr. Siegel, director of internal medicine at Harvard's McLean Hospital in Belmont, MA, "Your body doesn't know whether you've run a marathon... or been hit by a truck."[2] Additionally, 59 cardiac arrests occurred during marathons in the last decade.[3]

These risks can be dramatically reduced through better preparation. Increasing the span of training to give more time to prepare allows the runner to understand their individual capabilities better, which will ultimately set more realistic and achievable goals for the race day.

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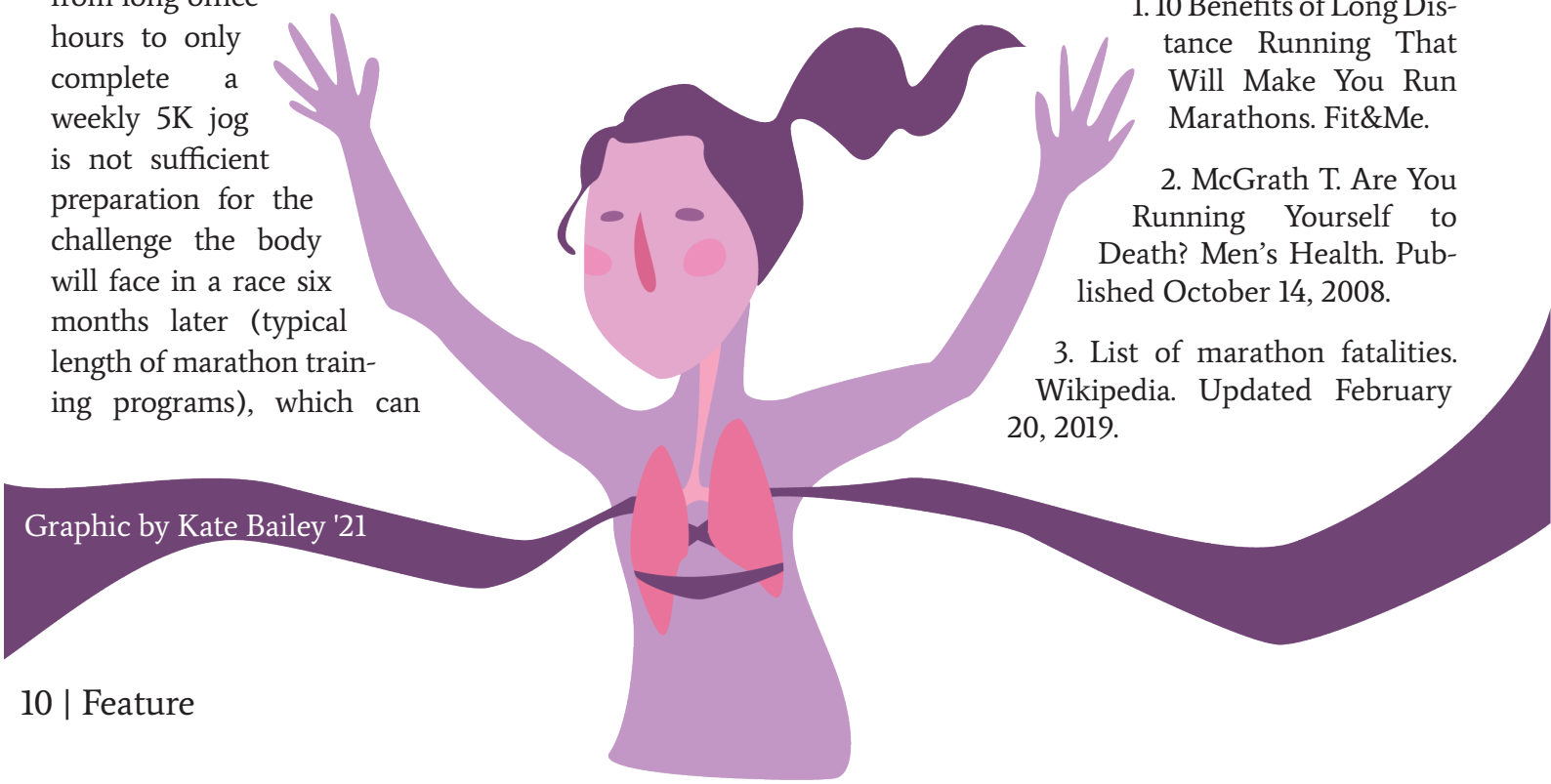


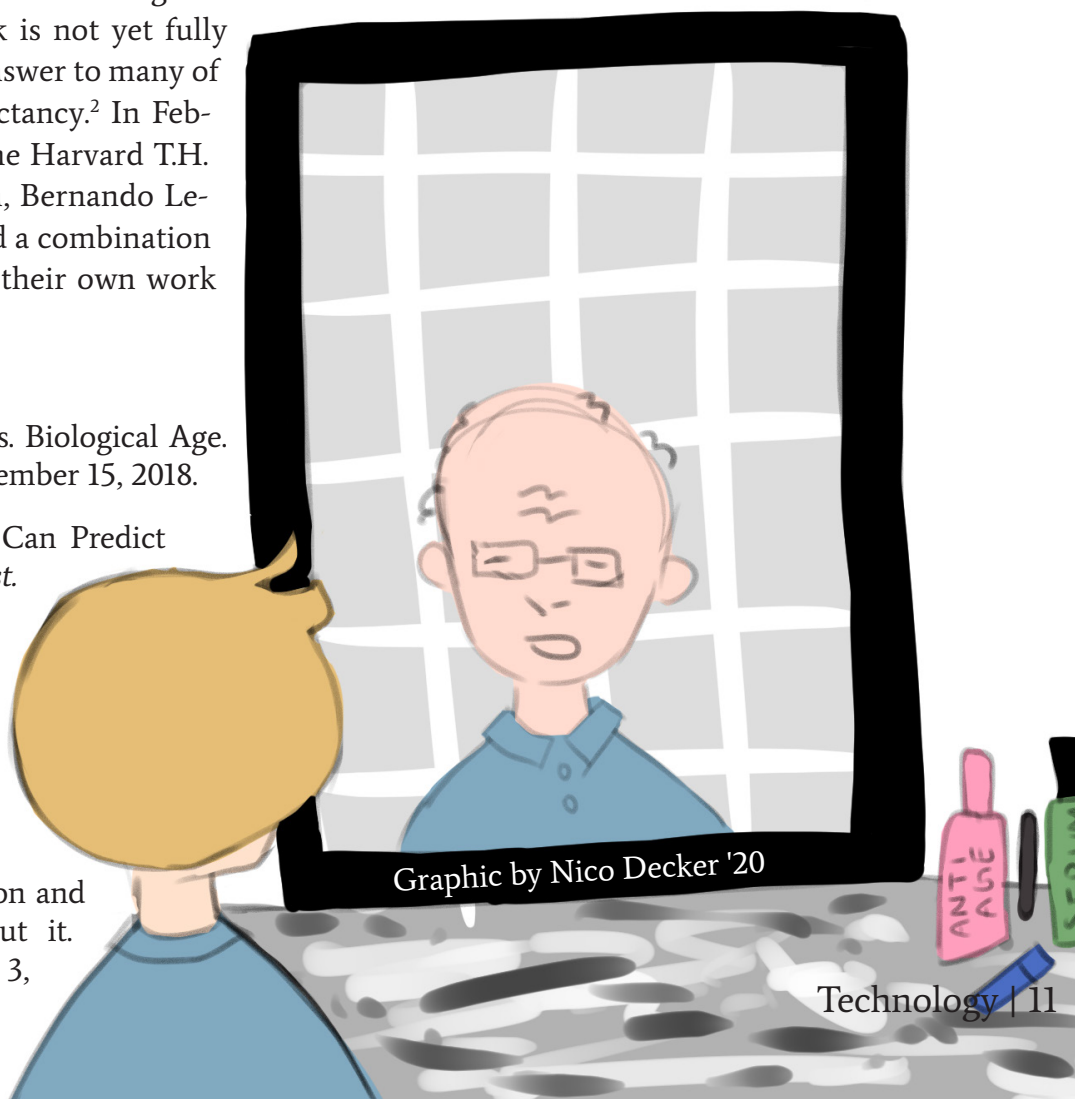
Graphic by Kate Bailey '21

TIMES ARE CH-A(N)GING

By Blake Bertero '22

There are believed to be two distinct types of aging: chronological and biological. Chronological age refers to the years that something has existed, while biological age refers to lifespan and considers a multitude of health-related factors.[1] A newly discovered DNA component, called a rDNA clock, which has been found to help identify the age of mammals, may change our understanding of both.

While the ribosomal clock is not yet fully understood, it may hold the answer to many of our questions about life expectancy.[2] In February, two researchers from the Harvard T.H. Chan School of Public Health, Bernando Lemos and Meng Wang, analyzed a combination of previous studies as well as their own work and discovered a correlation between the change in DNA methylation levels.[3] Methylation is the production of certain chemicals that typically correlate with aging.[4] With time, we may expand this discovery in order to further understand human growth and aging by mapping methylation levels (biological age) to our chronological age.



Graphic by Nico Decker '20

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OH NO

Graphic by Deanna Tan '20

IT'S MONO!

By Aarthi Katakam '21

Mono, short for Mononucleosis, is a common illness caused by the Epstein-Barr virus (EBV). EBV is a member of the herpes virus family and is one of the most common viruses to infect humans, though not every infection causes mono. Most commonly transmitted through saliva, EBV can also be spread by all bodily fluids. EBV can be transmitted through blood, semen, and very rarely through medical procedures like organ transplants.

An EBV infection does not guarantee mononucleosis; many people are infected without even knowing it. In cases where EBV does cause

mononucleosis, symptoms typically appear after four to seven weeks. In children, mono is generally asymptomatic or mimics flu-like symptoms. About 35-50% of teenagers infected with Epstein-Barr develop mononucleosis.[1] At first, they too showcase flu-like symptoms such as a fever, sore throat, headache, fatigue, and muscle weakness. After a few days, symptoms like swollen lymph nodes, jaundice, rashes on the face and body, and an enlarged spleen may appear. In rare cases, mononucleosis can cause severe complications. On some occasions, its negative effects can be compounded by illnesses like strep throat and tonsillitis, causing additional strain on the immune system. In other cases, mononucleosis can cause a ruptured spleen, warranting immediate medical attention. In most patients, however, symptoms of mono are not severe and only last two to four weeks.[2]

There are few treatment options for mononucleosis. Because no vaccines are currently available, infected individuals are encouraged to focus their efforts on easing symptoms and treating complications. This is done mainly through rest and gradual return to normal activity. In many cases, doctors will also suggest over-the-counter medicines to help with pain and reduce fevers. If a patient develops other conditions such as strep throat and tonsillitis while infected with mononucleosis, additional over-the-counter medications, or even antibiotics, can be utilized as well. Usually, patients just "wait out" their mono infections until symptoms subside.[3]

One unique trait of EBV is that it remains in the body for an individual's entire life after infection. Though the sufferer may not exhibit symptoms of mononucleosis anymore, the virus remains dormant in the carrier's bodily fluids. Throughout the rest of the person's life, dormant EBV can unexpectedly reactivate. This is due to protein structures in the virus, similar to telomeres in human chromosomes, which contain vital genetic information. These protein structures signal host cells not to destroy the viral DNA, allowing EBV to spread throughout the body. Several telomere-binding proteins, along with another protein called EBNA1, are responsible for the Epstein-Barr virus's swift replication. When kept intact, these proteins allow EBV to spread quickly and contribute to tumor cell growth in illnesses such as Burkitt's lymphoma, a cancer of the lymph nodes. When Epstein-Barr is reactivated, infected people become contagious again.

After a few days, symptoms like swollen lymph nodes, jaundice, rashes on the face and body, and an enlarged spleen may appear.

So why should we care? Mononucleosis, dubbed the "kissing disease" by mainstream news outlets, spreads like wildfire on high school and college campuses. This is due to the large number of people living in communal spaces; people are more likely to come in contact with others that have been infected with the Epstein-Barr virus. An EBV infection is very hard to prevent, as the virus can be transferred through anything from sharing cups to using the same lip balm.[3] It is very likely that most students at Choate will be infected with EBV before they graduate. In fact, 95% of people across the world are infected with EBV before the age of 35![1] So, Choaties, just remember that EBV infections are pretty much a fact of life while living on a campus and that they do not necessarily result in mono. If they do, never fear! Most people bounce back to normal within a couple weeks or months and, with a lot of rest and the resources of the Health Center, you will too.

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"SMALL" BUT DEADLY

By Linda Phan '22

Since the beginning of the first agricultural settlements in the world, this disease has raged over the surface of the earth, dominating many civilizations and often resulting in their collapses. Believed to have been observed starting approximately 12,000 years ago, this illness has left its marks in history by killing many, if not all, of the populations of countless ancient civilizations.[1] According to the World Health Organization (WHO), this deadly sickness has been completely eradicated as of today.[2] This disease is known as smallpox.

Known as a disfiguring and blinding disease, smallpox was extremely deadly to anyone who contracted it. As one of the oldest diseases in the world, the presence of smallpox is evident in the lesion-like appearances on the corpses (mummies) of ancient rulers such as Ramses V, a pharaoh of Egypt. Throughout time, many other rulers and influential figures around the world have succumbed to the disease, such as King Louis XV of France, Queen Mary II of England, and Emperor Peter II of Russia.[1]

As well as decimating many influential figures throughout history, smallpox played a large role in the rise and fall of countless ancient civilizations. The Plague of Athens, which involved multiple infectious diseases including smallpox, killed approximately 25% of the Athenian population.[3] A few centuries later, the Antonine Plague spread in the Roman Empire as troops from the Middle East returned home; this ultimately accelerated the decline of the Roman Empire.[4] During the Age of Exploration, smallpox was no longer just a fatal sickness; it became a deadly biological weapon that explorers used to conquer new land. Because natives of many regions were not immune to the diseases brought over by explorers, the results left behind by the smallpox epidemic were catastrophic. Developed civilizations like the Incas and Aztecs were conquered by explorers and much of the population was wiped out by the disease. Centuries later, smallpox was used again as a weapon against the natives during the French and Indian War when Native Americans received blankets from those infected with smallpox.[1]

Today, many diseases and illnesses can be prevented by receiving vaccinations. This was not the case centuries ago. Vaccines were created as a response to smallpox, resulting in cures that would, overtime, save millions of lives from countless illnesses.

During the 18th century, smallpox was widespread in Europe, causing about

three deaths for every ten people that were infected. Since a person cannot contract smallpox twice, survivors took on roles as caretakers and nurses to those that were infected. At this time, methods such as bloodletting and exposure to red objects were used to cure smallpox, though none of these methods were proven to be effective in curing the disease.[1] The only method that effectively prevented smallpox was variolation, a form of exposing patients that had yet to contract the illness to the scabs and pus of mild cases of the disease. Unfortunately, patients could still contract smallpox through this method and mortality still occasionally ensued.[5]

Vaccines were created as a response to smallpox, resulting in cures that would, over time, save millions of lives from countless illnesses.

Using variolation, Dr. Edward Jenner found a new way to cure and prevent people from contracting smallpox after observing cowpox in 1796. A milder version of smallpox, cowpox is harmful to certain animals like cattle, but humans can also contract it through cuts and scratches on their bodies after touching the ulcers on cows' teats. He noticed that milkmaids with cowpox lesions on their hands could not contract smallpox.


The Wall Street Journal

Dr. Jenner conducted an experiment in which he found a milkmaid named Sarah Nelmes, a girl with numerous cowpox lesions on her hands, and James Phipps, a boy who had never contracted cowpox or smallpox. Dr. Jenner then injected James with some of the pus inside of Sarah's cowpox lesions. After fighting cowpox for many days, Phipps recovered. Afterwards, Dr. Jenner injected him with a strain of the smallpox virus. Phipps had no signs of contracting the disease and was completely healthy.[6]

Because of Dr. Jenner's discovery, the death rate for smallpox decreased substantially. Dr. Jenner did more than just finding a cure for smallpox; he ultimately found a way to obtain immunity. As a result, Dr. Edward Jenner gained worldwide recognition for producing the first successful modern vaccination, influenceing the creation of all vaccinations available today.

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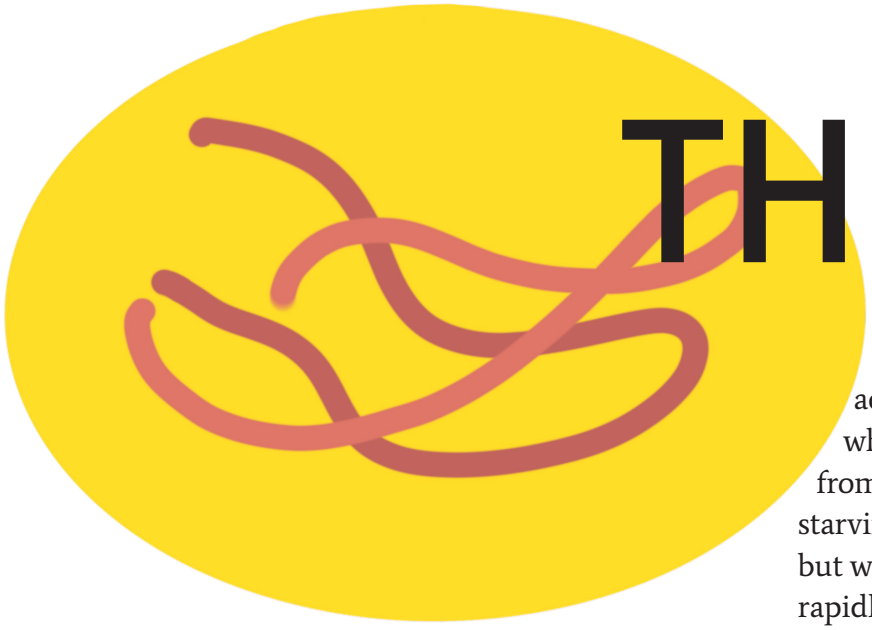

THE WAR

By Dasha Asienga '20

One of the deadliest viruses known, ebola is a disease found in humans and other primates. It was discovered in 1976 near the Ebola River in the Democratic Republic of Congo and has spread mainly through sub-Saharan Africa. The West African fruit bat is the virus's natural host. Symptoms of ebola include fevers, headaches, muscle aches, fatigue, diarrhea, vomiting, and abdominal pain. Unfortunately, these symptoms also resemble those of the flu, malaria, and cholera. The only symptom that distinguishes ebola from these other diseases is unexplained bleeding from the eyes, nose, mouth, anus, and nipples, which occurs during later stages of the disease's development.

The spread of ebola can occur through direct contact with bodily fluids of an infected animal or person. This includes coming into contact with infected blood, semen, breast milk, or mucous membranes, as well as having sexual contact or sharing needles and syringes with infected people. To make matters worse, ebola cannot be detected until symptoms begin to show, which usually takes around eight days.[1] The spread of the virus is, therefore, very easy, as proven by the 2014 pandemic in West Africa, which began with a single two-year-old boy and killed 11,000 of 29,000 reported cases.[1]

There are currently no approved vaccines or treatments for ebola, and mortality rates have climbed to 90%. However, scientists have been conducting intensive research and clinical trials to test potential vaccines and treatments.[1] One recent advancement is the use of antimalarial drugs, which work by preventing the malarial parasite from digesting food within the red blood cells, starving the parasite. The ebola virus mimics food, but when the cell tries to swallow it, the virus begins rapidly replicating its DNA to avoid digestion. Thus, by interfering with normal cell digestion, the drug inhibits the virus's DNA replication. Patients using this treatment were shown to be 31% less likely to die of ebola.[3]

In addition, last year, scientists started clinical trials in Guinea, Liberia, Sierra Leone, and Mali to evaluate three ebola vaccination strategies.[4] Basic interventions include oxygen therapy and medications to support blood pressure, reduce diarrhoea and vomiting, and manage fever and pain. Other scientists are trying to manipulate the virus's replication cycle to stop the spread of its DNA. So far, the treatment and vaccination methods being researched have shown promising results, and patients who recover develop antibodies that can last up to 10 years.[1]

Despite exciting progress, a lot of important questions remain unanswered. With the identification of the West African fruit bat as the natural host of the ebola virus, scientists need to perform more studies to further understand how outbreaks happen and how they can be prevented without exterminating the bat species. Moreover, additional data is needed from pregnant women, children, and immunocompromised populations. More research also needs to be done to determine the best vaccination approach for achieving quick and long-lasting responses against the virus. Perhaps the most difficult aspect is determining what exactly corresponds to the success of a vaccine. Finally, large-scale trials and evaluations are needed to ensure the accuracy of results.[4]

16 Graphic by Jacqueline Zou '20

ON EBOLA

Many assume that exterminating the West African fruit bat is the final key to ending ebola; however, studies have shown that efforts to remove wildlife populations may result in exacerbated damage, potentially further spreading the virus. Bats play a critical role in the ecosystem, removing pests and pollinating fruit trees. The discovery that the bat is the natural reservoir of the ebola virus should, therefore, not be taken as a reason to exterminate them.[5]

By drawing an ebola family tree, scientists discovered that the spread mainly occurs through short distance travel within affected areas.[6] Thus, when in areas affected by Ebola, it is important to avoid contact with bodily fluids or items that may have come into contact with an infected/unknown person's bodily fluids such as sweat. Additionally, it is important to avoid contact with bats or nonhuman primates, meat prepared from such animals, and meat from unknown sources.[1]

In spite of the unanswered questions, advances that have already been made are indeed promising. Improving global capacity and forming collaborative partnerships, however, will be crucial for long-term success. The international community needs to stand with affected countries and aid in research. If the world stands together, we can eradicate Ebola!

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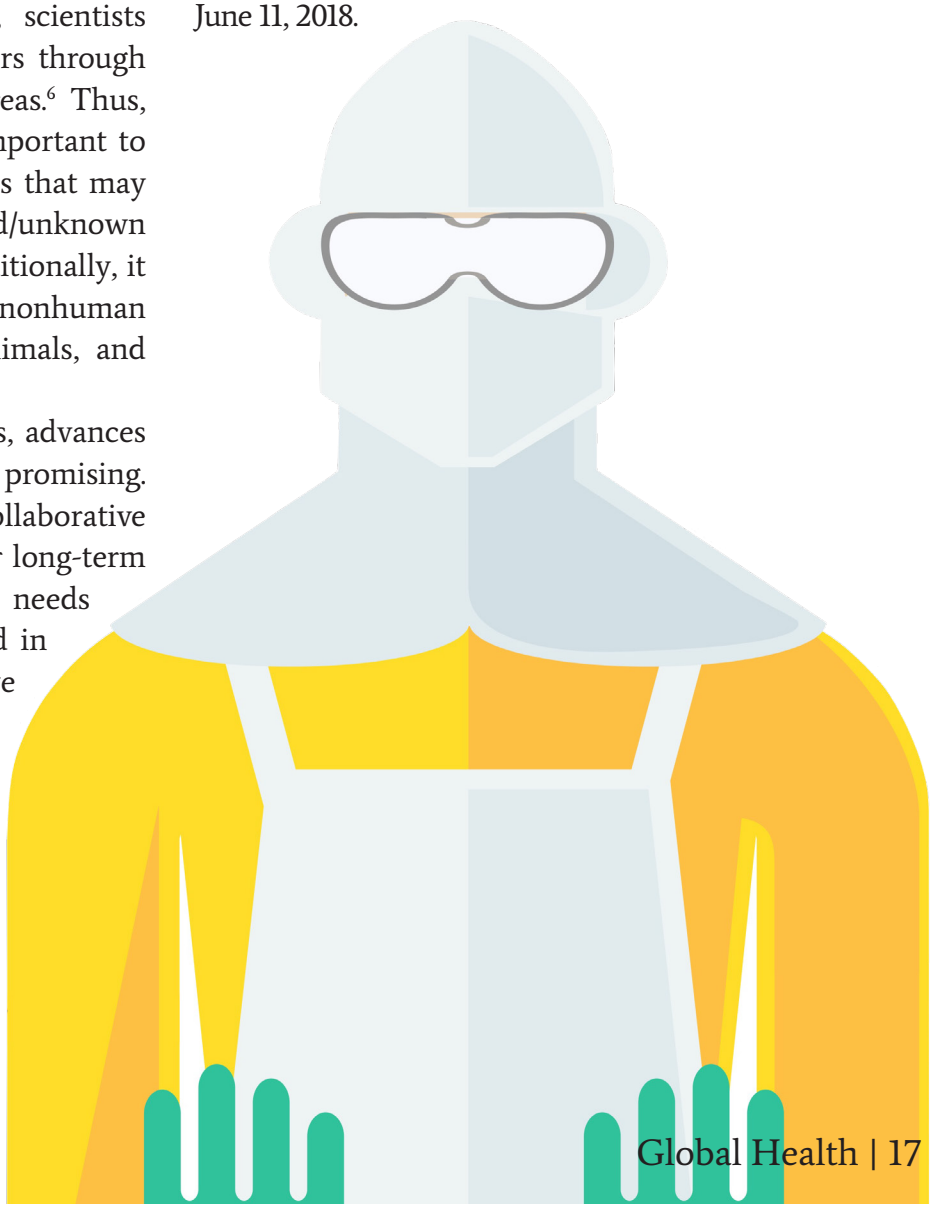

EXERCISE YOUR MIND

By Leslie Meisel '21

If you have ever tried meditation, pilates, or tai chi, you may have noticed that they leave you feeling more focused and at peace. These practices are known to have positive impacts on mental health.

One popular activity is yoga. Yoga relieves stress by slowing heart rate, easing respiration, and lowering blood pressure. A study conducted at the University of Utah tested different people's responses to pain, noting that "people who have a poorly regulated response to stress are also more sensitive to pain."[1] The subjects in the study included 12 yoga practitioners, 14 people with fibromyalgia (a disorder characterized by hypersensitivity to pain), and 16 healthy volunteers. The study found that people with fibromyalgia were more sensitive to pain, whereas the yoga practitioners exhibited higher levels of pain tolerance.[1]

Another exercise shown to improve mental health is pilates. Pilates is a physical fitness system employed by many to increase muscle strength and improve flexibility, but it also positively impacts mental health. By changing the levels of serotonin, cortisol, and endorphins in the brain, pilates may be used to assist in treating depression and anxiety. Pilates can serve as a distraction from negative thoughts, enhancing mindfulness and releasing stress.[2]

Lastly, tai chi, a graceful martial art developed in China, is a perfect way to relieve stress. Like yoga, tai chi helps people suffering from fibromyalgia. A study done in 2018 by a group of professors in Boston concluded that "tai chi mind-body treatment results in similar or greater improvement in symptoms than aerobic exercise, the current most commonly prescribed non-drug treatment, for a variety of outcomes for patients with fibromyalgia."[3]

For people with stressful lives, it is important to set time aside for self-care. Although life may seem overwhelming at times, there are many activities that can help relieve stress and improve mental health.

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