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CHOATE PUBLIC HEALTH

VOLUME 3 | ISSUE 1

CONTENTS

EDITORS' NOTE

Dear Readers,

Choate Public Health is a student publication dedicated to spreading awareness about important campus-related and global health issues. Founded in the winter of 2017, our magazine publishes two to three issues each term, covering topics ranging from e-cigarettes and concussions to teenage anxiety and seasonal influenza.

We are excited to announce that we will be expanding to an online platform, which is now live at *publichealth.choate.edu*! Thanks to the work of Nate Krauss '20, Choate Public Health is now able to reach a broader audience beyond the immediate school community. On this website, you can not only access all of our previous issues and articles, but also contact us with any questions or comments.

We hope you will enjoy our summer issue. Keep an eye out for upcoming announcements!

Be healthy,
Ariel & Khushi

CPH BOARD

VAPING CLAIMS ITS FIRST VICTIM

By Ariel Kim '20

193 cases in 22 states. One death. These patients — mostly teens and young adults — are affected by mysterious respiratory illnesses.

These numbers are increasing nationwide as doctors struggle to find a cause behind this startling trend. The most significant contributor to this struggle is a serious lack of information: researchers do not know what products these patients used, what substances were vaped, and whether some sort of contaminant may have been involved. It isn't even clear whether the patients share common ailments, or whether each case is unique.[2]

Most patients reported difficulty breathing, chest pain, vomiting, diarrhea, and fatigue. In some extreme cases, patients had extensive lung damage, requiring treatment with oxygen and days on a ventilator.[1, 4] Doctors are seeing injuries ranging from severe inflammation or pneumonitis to bleeding in the lungs.[5] One patient, Alexander Mitchell from Utah, went from thinking he had the flu to being diagnosed with acute respiratory distress syndrome, a life-threatening injury of the lungs. Though he luckily recovered, doctors claim his survival was only possible thanks to his youth and otherwise healthy physical condition.[2]

They share one common link: vaping.

One theory is that illnesses are caused by toxic substances in vaping products. E-cigarette aerosol often contains lead, ultra-fine particles, volatile organic compounds, and cancer-causing chemicals.[5] According to Dr. Michael Lynch from the University of Pittsburgh Medical Center, the lung injuries that doctors are seeing are consistent with chemical inhalation injuries.[1]

The recent surge in cases may also be the result of a new addition to vaping oils. According to Dr. Scott Aberegg from the University of Utah, some of the patients had been vaping for years, but there had not been a cluster of similar cases before.[2]

However, the full extent of risks caused by the substances in vaping products is unclear and thus difficult to trace and investigate. Not only are there several hundred kinds of commercially sold "vape juices," but the Food and Drug Administration (FDA) also does not have control over what ingredients are used in these devices. Moreover, many counterfeit and adulterated products are being sold.[3] Individuals may even be emptying out commercial nicotine pods and filling them up with personally and inexpertly crafted chemical cocktails. Public health officials are concerned

that these cases may be signaling the emergence of an unregulated black market.[1]

Research is being conducted to combat the immense lack of knowledge regarding the long-term effects of vaping. Studies conducted at Duke and Yale found that chemicals that make up vape juice can go through changes that can cause harm, even if the liquid is not heated. Another study demonstrated that vaping not involving nicotine was still harmful — vaping caused temporary inflammation to the inner lining of smokers' blood vessels.[5] Nonetheless, researchers and public health officials claim that it is dangerous to blame particular vaping products for these respiratory illnesses, as some patients report having vaped marijuana and other dangerous substances.[1,5] According to the Centers for Disease Control and Prevention (CDC), "While some cases in each of the states are similar and appear to be linked to e-cigarette product use, more information is needed to determine what is causing the illnesses."[6]

With the number of cases continuously increasing, the CDC is working with state and local health departments as well as the FDA to investigate the causes behind this outbreak. To assist with this research, the FDA encourages the public to submit reports of unexpected tobacco- or e-cigarette-related health or product issues via the online Safety Reporting Portal.[6] Until more research is conducted, we must stay vigilant about our e-cigarette usage.

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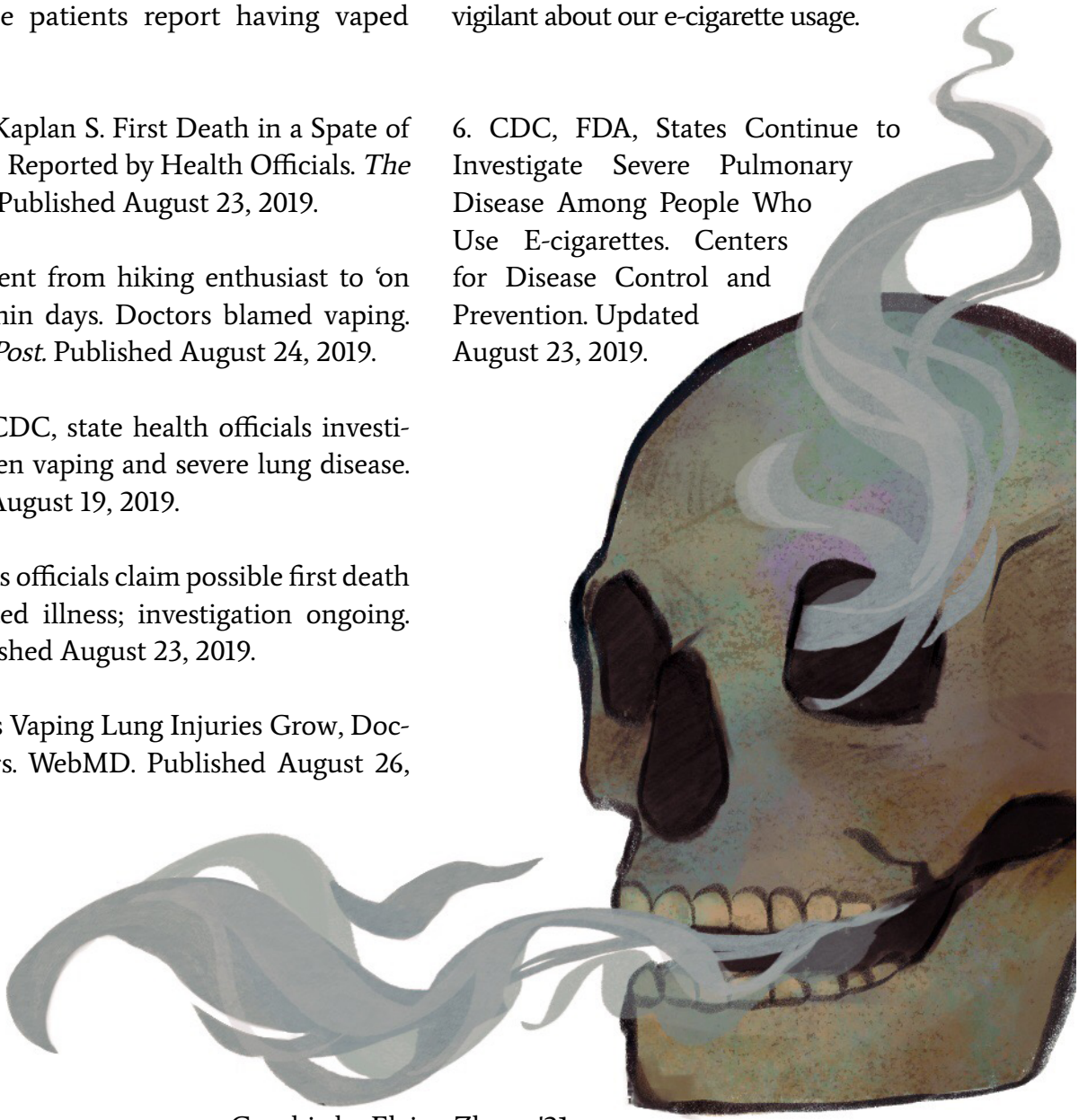


Graphic by Elaine Zhang '21

WATER IN CRISIS:
NEWARK'S LEAD LEACHING PROBLEM

By Aarthi Katakam '21

The city of Newark, New Jersey, has a not-so-new problem at hand — widespread lead contamination. Last October, officials reported elevated levels of lead in water systems, an issue that escalated to severe contamination this summer.[1] This leads to two important questions: how did we get here, and why does this keep happening?

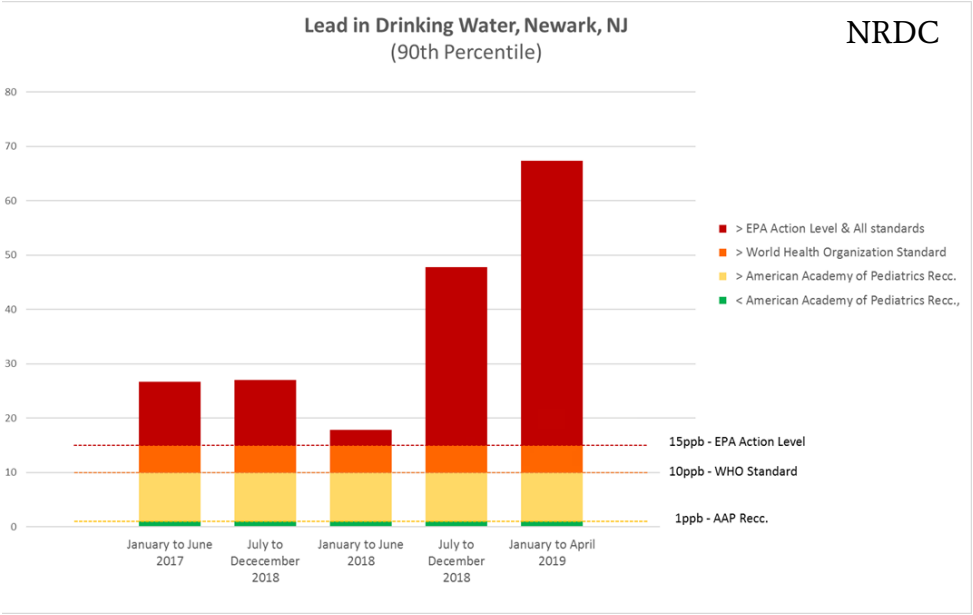
Newark has had consistent problems with lead poisoning in recent history. In 2017, over 10% of homes in Newark were found to use water containing more than twice the acceptable amount of lead (15 parts per billion). There was little to no action taken to combat this issue. That same year, The New York Times reported, "More than 13% of the children in New Jersey afflicted with elevated lead levels in 2017 were in Newark, which accounted for only 3.8% of the state's children." The indisputable tilt towards lead contamination in Newark is due primarily to government mismanagement. Near the end of Cory Booker's time as mayor, corruption and managerial blunders immobilized the Newark Watershed Conservation and Development Corporation, an agency established to run water systems and ensure they were fulfilling the Environmental Protection Agency (EPA) standards. For reasons currently unknown — record-keeping was scarce — the acidity of the water in Newark's pipes rose. Acidic water corroded the lead pipes, causing more lead to leach into the water. This was an irresponsible environmental decision with severe consequences, with the most important being the loss of safe drinking water for thousands of predominantly black and low-income homes.[2]

New York Times

In October of 2018, the city of Newark distributed PUR water filters also used in Flint, Michigan to combat the levels of lead in the water systems. The water filters are faucet attachments meant to remove lead in people's homes. However, in some cases, the filters simply did not fit on people's taps, leaving them no option but to drink from the bare tap or buy bottled water. This summer, city officials found that the filters did not adequately remove lead from the water, causing city-wide outrage and confusion.[2]

Despite conflicting messages from different political authorities on the safety of tap water, bottled water is being handed out at distribution centers

throughout the state. Residents must wait in line, sometimes for hours at a time, to get their allocated cases of water. But there's a catch: only people from certain areas of the city can access the water after they reach the front of the line. That means many people must wait for hours in the hot sun only to go back home to water they can't trust. Some of the households that can access bottled water, however, don't fully trust their water either. Operations in the distribution centers were temporarily stopped after discovering some bottled water was past its expiration date. The water itself does not expire, but the chemicals present in the plastic bottle can leach into the water. These chemicals, however, do not affect the safety of drinking water. Distribution resumed soon after, but caused more confusion and fear in an already trying time.[1]



> "In order to combat the issue of lead leaching once and for all, New Jersey governor Phil Murphy has put for a plan to replace all the lead service pipes in Newark within the next three years."

This plan, however makeshift, seems to be working for now. But it can't go on like this forever. This is a very ambitious plan, as the pipe replacement was initially charted to take eight to ten years. The first step was to obtain a 120-million-dollar loan through Essex County, where Newark is located, to advance the process. Next, the city must gain permission from city landowners to access and replace each of the lead service lines, as they are technically on private property. This might seem simple, but in a city where 70% of residents are renters, landowners are difficult to pin down. So far this year, 800 of 1,800 lead service lines have been replaced.[3]

The city of Newark is suffering through a toxic cocktail of government mismanagement, antiquated infrastructure, and failed technology. This has led people to lose trust in their government, propagate fear and confusion, and, most importantly, suffer from a lack of access to clean drinking water. This sentiment was echoed by Governor Phil Murphy, who declared, "It's a right, not a privilege, to have clean, safe water."[1]

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ARTHRITIS, DON'T BE MY NEMESIS

By Linda Phan '22

As people grow older, they may find themselves in a constant battle with aches and pains in many of the joints that make mobilizing the body possible. Daily tasks that seemed effortless work years ago now take the semblance of hard, discomforting labor. Many of these people will find themselves diagnosed with arthritis.

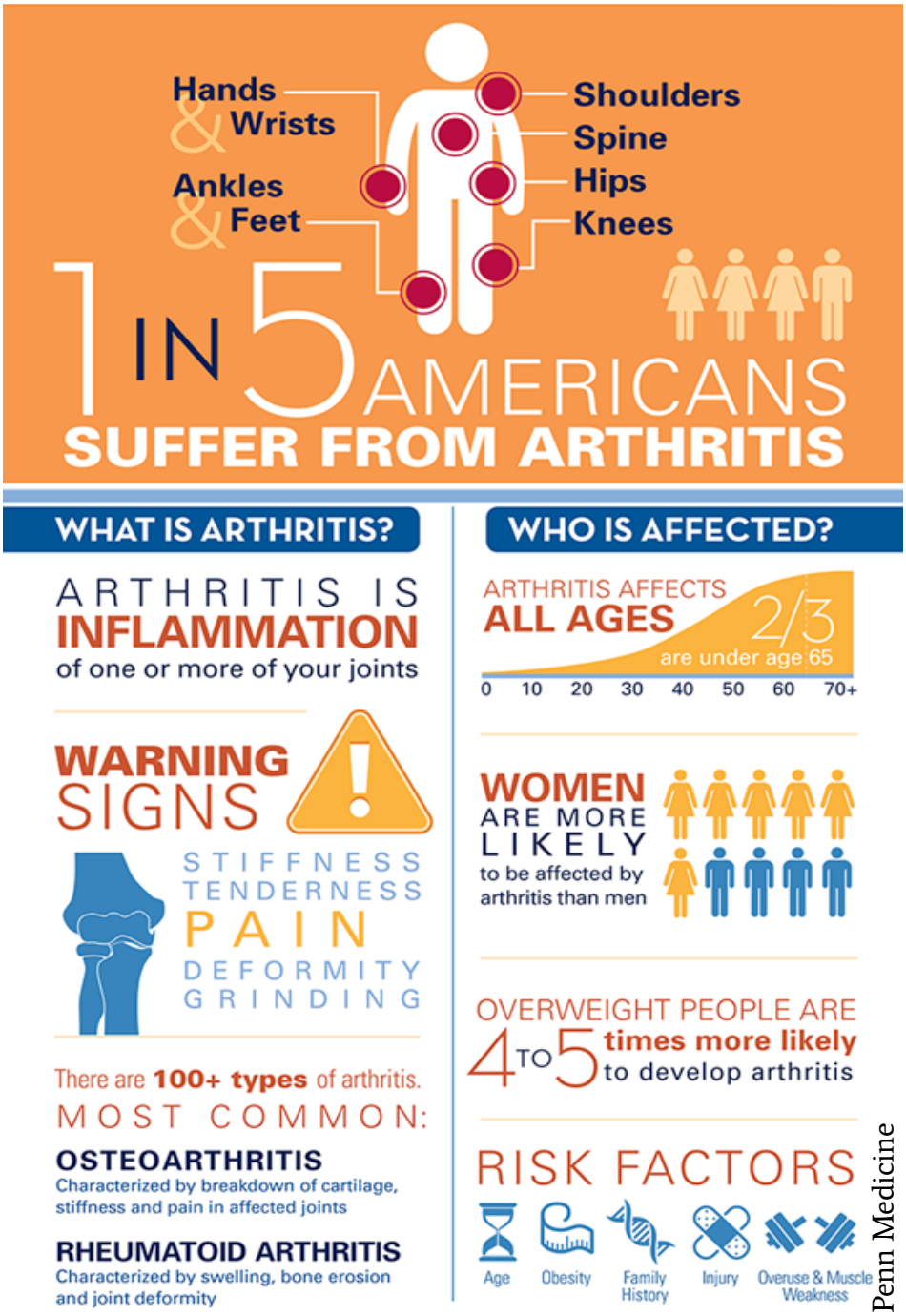
Arthritis is a relatively common disease, affecting approximately 54 million Americans, with 60% of those afflicted within working age (between 18 and 64).[1] Although the disease can have many different variations, it centers around the inflammation and swelling of joints, causing pain and stiffness. Arthritis is found across all age groups and commonly occurs with other chronic diseases including diabetes, obesity, and heart diseases.

The following types of arthritis are the most common out of over a hundred different types:

Affecting approximately 27 million Americans, osteoarthritis (OA) is the most common type of arthritis. Although all age groups are vulnerable to OA, women and people over the age of 60 are more prone to the disease. Pain, aches, and stiffness stem from the lack of cartilage on the joints. Because these shock absorbers are either deteriorated or gone, bones directly rub against each other, causing pain and limited range of motion. Genetics, obesity, joint overuse, and injuries are some of the potential causes of OA. However, symptoms can be alleviated with several treatments. Depending on how one developed OA, certain exercises, physical therapy, weight management, medications, and even surgery may serve as effective treatment. Exercising, strengthening muscles around the joints, and avoiding high impact activities can help prevent or delay the onset of osteoarthritis.[2]

Rheumatoid Arthritis (RA) is an autoimmune disorder in which the immune system attacks the lining of joints, also known as the synovium. Consequently, the swelling thickens this lining and results in the destruction of the joint and bones. As RA gets worse, the possibilities of bone erosion, joint deformity, and other physical disabilities increase. Unlike OA, RA can also affect various organs and body systems such as the cardiovascular, respiratory, and integumentary systems. As a result, it is not uncommon for people diagnosed with RA to have other chronic diseases including lung diseases, lymphoma, heart diseases, and osteoporosis. Women, middle-aged people, people exposed to silicate materials, smokers, people with a family history of RA, and obese people are more prone to RA. Symptoms of RA include swelling joints, worsening joint soreness, fever, and fatigue. A frequently used medication for RA is the disease-modifying antirheumatic drugs (DMARDs). This medication prevents the worsening of RA and permanent damage to joints, bones, and tissues. Surgery, physical therapy, relaxation, and exercise can also alleviate the symptoms and treat RA.[3]

Similar to RA, Psoriatic Arthritis (PsA) is also an autoimmune disease. In this case of arthritis, the immune system attacks healthy cells, resulting in inflammation and the overproduction of skin cells, or Psoriasis. People with Psoriasis, people between the ages 30-50, and people with a family history for PsA are the most prone to PsA. Those with PsA have the possibility of developing eye problems and arthritis mutilans, a severe deforming disease where some bones are permanently lost. RA and PsA are very alike. Although people with PsA are more likely to experience swollen fingers and toes, foot pain, and back



pain, people with PsA or RA, for the most part, exhibit the same symptoms. Hence, many treatments and medications used for people with RA can also be effective for people with PsA.[4]

A complex form of arthritis, gout is caused by the formation of urate crystals in the joints. These crystals are formed by high levels of uric acid levels which are usually obtained from purines, a substance found in poultry, seafood, and alcohol. People with diabetes, obesity, heart and kidney disease, and frequent alcohol consumption are more prone to gout. In addition, men tend to develop gout earlier than women due to their higher levels of uric acid, although women can still develop gout, especially after going through menopause, which increases uric acid levels. When the kidneys cannot process enough of the uric acid, uric acid builds up, forming sharp urate crystals. These crystals cause inflammation and intense pain for surrounding joints and tissues. Although these symptoms come and go through flares, there are many effective treatments for reducing or preventing future flares such as uric acid removal medication, limiting the intake of the foods aforementioned, and ingesting coffee, vitamin C supplements, and cherries.[5]

Because arthritis is a common disease that can affect all sexes, races, and ages, it is important to be aware of the symptoms associated with it. Those with arthritis experience many struggles and pain on a day-to-day basis. The disease causes many hindrances in both personal and work life. It is important to seek medical attention and treatment as soon as possible before one's condition worsens or becomes permanently irreversible. Fortunately, there are many treatments available to help alleviate symptoms and prevent future flares or attacks.

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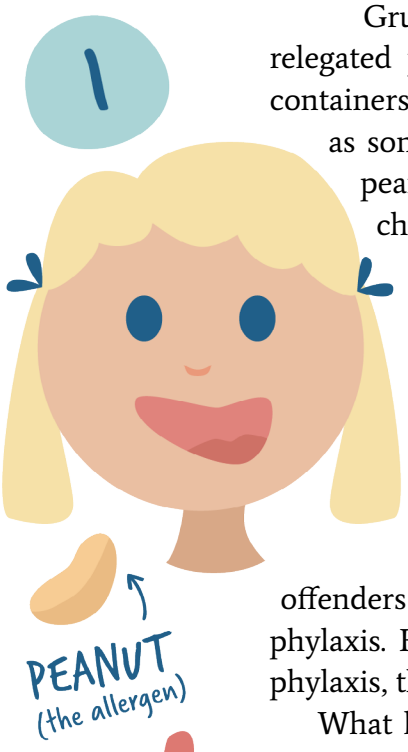
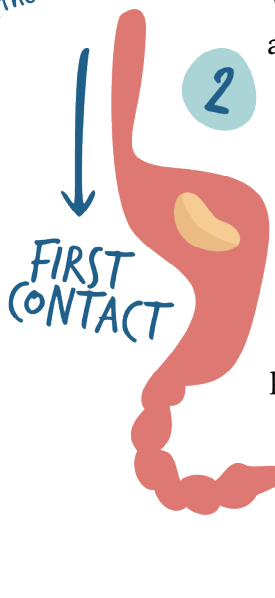
PEANUT A

AN OVERLOOKED AND U

By Vidhya



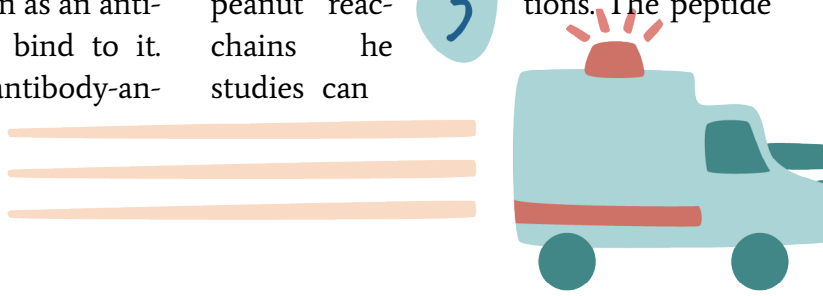
Grumbles when the Dining Hall relegated peanut butter to small plastic containers flooded through campus, but as someone who deals with a severe peanut allergy, it was a welcome change. As of 2017, 1.2 million teens and children in the United States have peanut allergies.[1] The second most common allergy in children, the incidence of peanut allergies is on the rise. The urgent need to find a cure or treatment lies in the fact that peanuts are the worst offenders when it comes to causing anaphylaxis. For every 200 episodes of anaphylaxis, there is one death.[2]



What happens when a person has an allergic reaction to peanuts? The reaction begins when the sufferer ingests peanuts. The peanut is digested, and its proteins end up in that person's bloodstream. People who have peanut allergies have peanut specific Immunoglobulin E (IgE). IgE, antibodies which cause allergy attacks, perceive the peanut protein as an antigen and bind to it. The antibody-antigen pair then bind to mast cells, which are made of connective tissue and contain different granules that cause inflammation upon release. Triggered by the antibody-antigen, the mast cell releases a granule called histamine. The resultant rush of histamine is what causes allergy symptoms such as hives, nausea, vomiting, fainting, and difficulty breathing.

Many people with peanut allergies carry Epi-Pens in case of accidental ingestion. Epi-Pens contain large doses of epinephrine, causing the injected body to experience an adrenaline rush. That adrenaline rush allows a person having a severe peanut reaction to breathe and, consequently, stay alive.[3]

Dr. Stephen Dreskin is a world-renowned doctor at the University of Colorado's Anschutz Medical Campus. He recently discovered the two most important component proteins in peanuts when determining a sufferer's peanut reactivity. Dr. Dreskin investigates different peptide chains — of a chain of amino acids — that have the potential to block peanut reactions. The peptide chains he studies can



Graphic by Kate Bailey '21

ALLERGIES:
UNDERRESEARCHED KILLER

Pathy '20

bind to the antibodies instead of the peanut proteins, reducing the number of mast cells triggered. Once distilled down to the shortest chain with the highest potency, Dr. Dreskin's peptide chain could be used in a vaccine.

The concept of an allergen has been known since the 1870s, but the idea of a peanut allergy has not been seriously investigated until recently. In 1997, doctors began noticing an uptick in the number of patients with peanut allergies, especially in Asians and African-Americans. The percentage has been growing rapidly since then. Unfortunately, legislation has just begun to catch up. In 2010, President Obama signed the Food Allergy & Anaphylaxis Management Act (FAAMA), incentivizing schools to have a contingency plan regarding risk of exposure for students with peanut allergies. FAAMA also provided schools with federal grants to make sure that current allergy guidelines were being followed.

Even though this act was passed, many states still have a long way to go; for example, only 12 states require that their schools stock Epi-Pens. To prevent peanut-allergy related casualties, there is an ongoing need for increased public awareness on the potential harm to peanut allergy sufferers.

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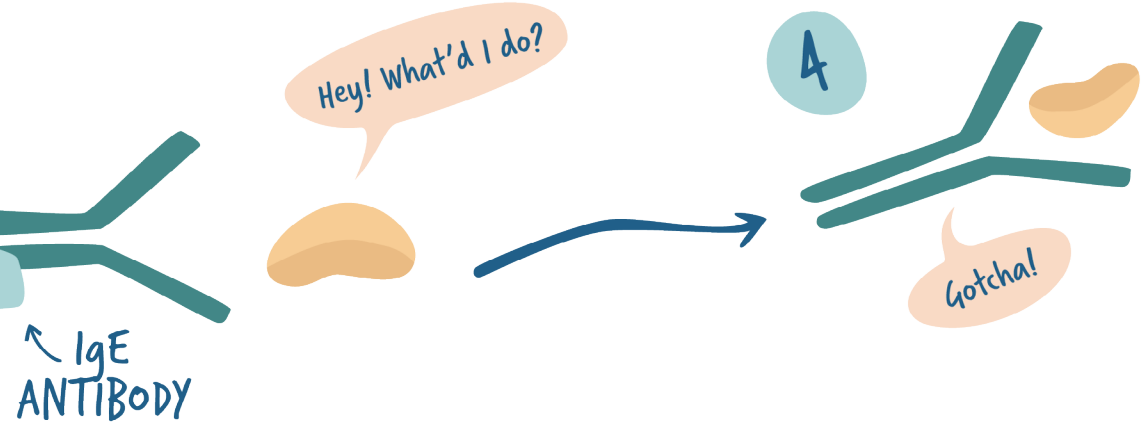
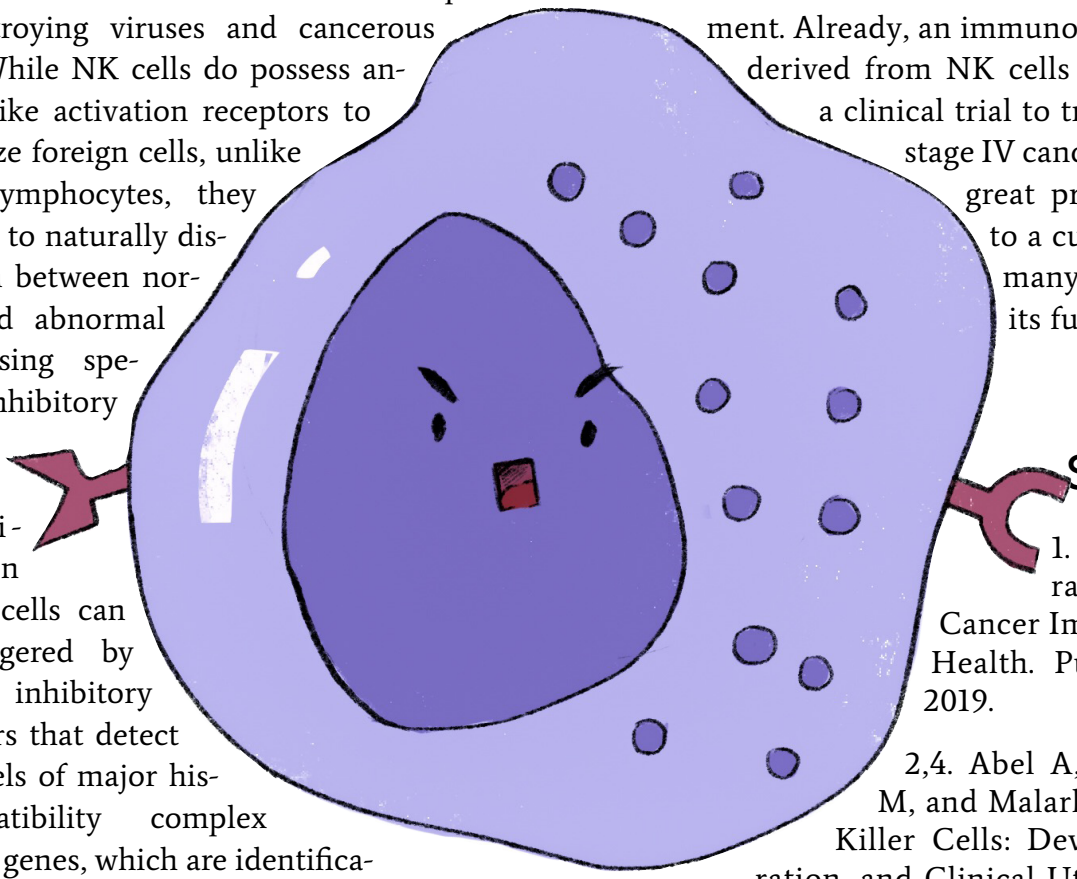


NATURAL KILLER CELLS FOR CANCER TREATMENT

By Elaine Zhang '21

Natural killer (NK) cells — a type of lymphocyte, or specialized white blood cell — perform an important role in the human immune response by destroying viruses and cancerous cells.[1] While NK cells do possess antibody-like activation receptors to recognize foreign cells, unlike other lymphocytes, they are able to naturally distinguish between normal and abnormal cells using special inhibitory receptors.[2] Mobilization of NK cells can be triggered by these inhibitory receptors that detect low levels of major histocompatibility complex (MHC) genes, which are identification genes that occur on the cell surface.[3] Mutated cells suppress the expression of these genes, making NK cells effective in finding and destroying malignant cells while protecting healthy tissue. This unique anti-tumor aspect makes NK cells practical for cancer immunotherapy.

There are very few NK cells in humans, so scientists are researching methods to increase their number and efficiency. Since NK cells intrinsically target tumors and have few side effects, they are effective and low risk.[4] Labs can produce NK cells from stem cells to use as an injected supplement. Already, an immunotherapy treatment derived from NK cells has been used in a clinical trial to treat a patient with stage IV cancer.[5] NK cells show great promise as the key to a cure for cancer, and many are excited about its future.



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Graphic by Elaine Zhang '21

THE PLACEBO EFFECT: A HEALING HOAX?

By Raine Williams '20

The debate over whether or not the mind can heal the body to the same extent that science can is rooted in the benefits and detriments of a phenomenon called the placebo effect. The placebo effect occurs when a patient is given an "inert" treatment but still experiences health improvement. This is because of psychological factors that convince patients that an inactive drug will improve their condition simply because they are told that it is effective.[1]

The "benefits" of the placebo effect remain controversial because patients often undergo subjective health improvement as opposed to objective — or measurable — improvement. These patients may claim they feel better because of the placebo, but this does not mean that the placebo has improved their health conditions on the biological level. Ted Kaptchuk, director of the Harvard Program in Placebo Studies and Therapeutic Encounter, claims, "The role of placebos is limited. They can't affect the underlying disease mechanisms in conditions like hypertension or arrhythmias. But they can influence subjective symptoms like pain and depression, hot flashes, and insomnia."[2] Placebos can be beneficial by influencing patients to believe that they can be healed, causing the brain chemistry to produce effects similar to what a medication might cause.[3] However, this can have dangerous consequences. A patient may reject medical treatment on the basis that the placebo is "healing" them, when in actuality their condition could worsen without medical treatment.

Ultimately, the placebo effect reveals the importance of the role that a doctor plays in impacting the patient's perception of their own healing process.

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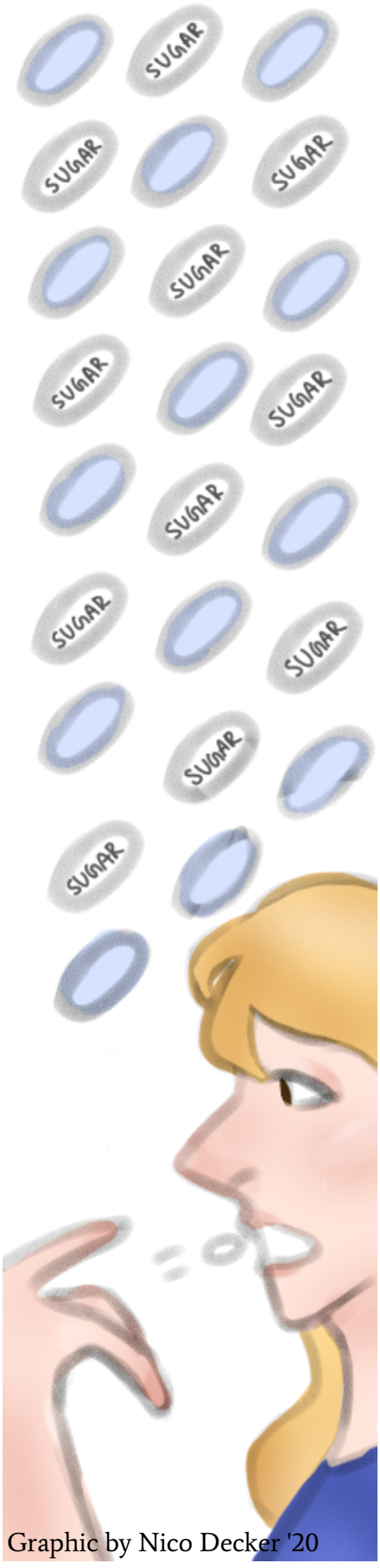


Graphic by Nico Decker '20

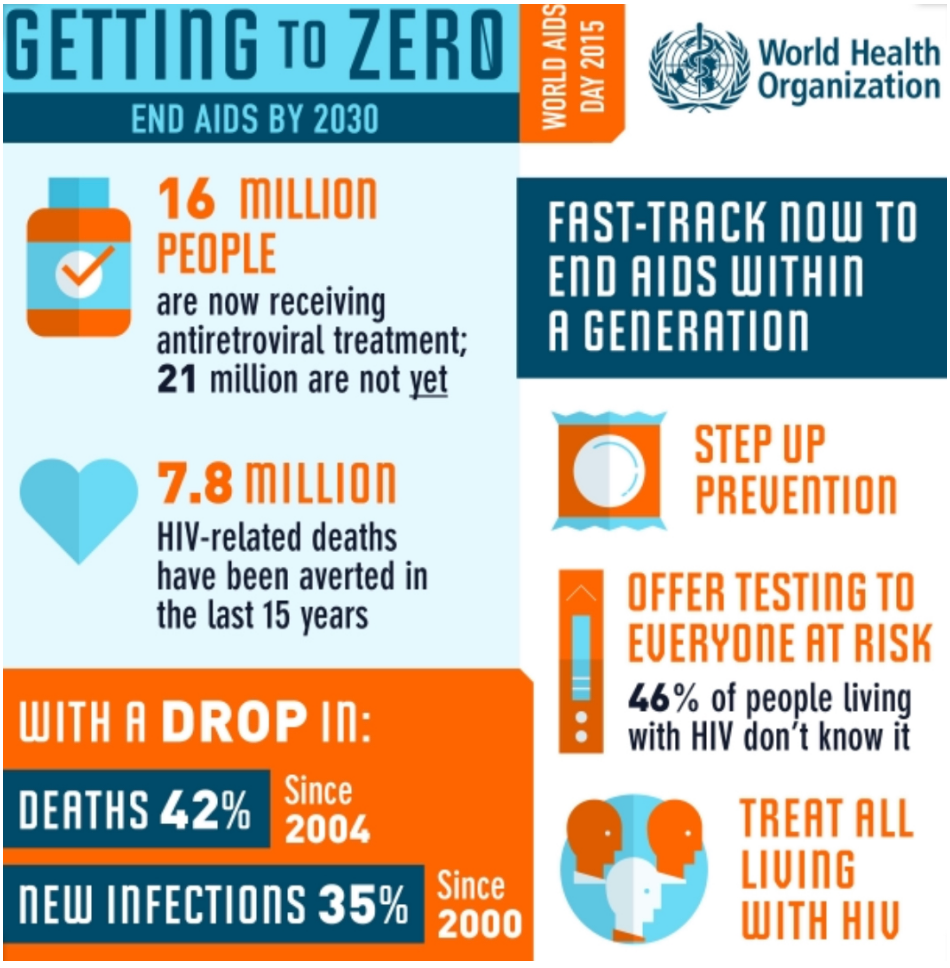
AIDS: A MODERN PROBLEM

By Allison Kleinstein '21

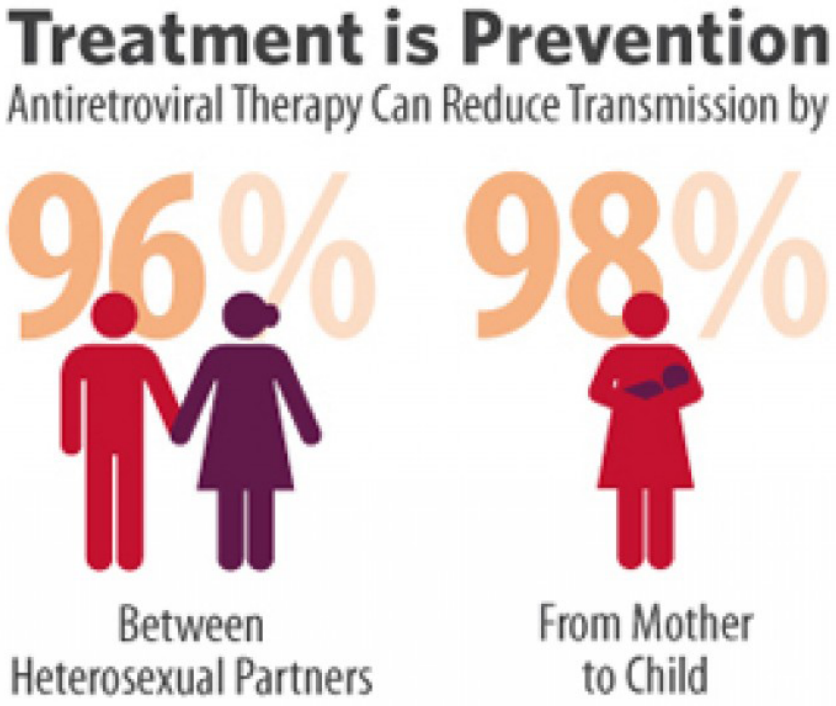
Though many people view the AIDS (Acquired Immune Deficiency Syndrome) epidemic as a past crisis, it is still highly relevant in our world today, affecting 36.9 million people globally.[1] HIV (Human Immunodeficiency Virus) is still a leading cause of death among women of reproductive age. Since the first case of this disease was reported in 1981, over 77 million people have become infected with HIV; fortunately, however, death rates have declined dramatically. In 2017, 940,000 people died of AIDS, a 51% decrease since the peak of the disease in 2004.[2] This is due in part to the spread of antiretroviral therapies (ART).

HIV infects certain white blood cells, known as T-cells, which help fight disease. Once a person contracts HIV, the disease will remain in their body for the remainder of their life. Over time, a person's immune system will no longer be able to effectively fight disease. HIV becomes AIDS when the virus has infected enough T-cells to prevent the human body from fighting off infections such as pneumonia or tuberculosis. Common infections like these are usually the cause of death for people with AIDS.[3]

Currently, there is no vaccine for HIV and no cure for AIDS. Other medications like antiretroviral (ART) drugs can be used



Partners in Health



to slow the spread of HIV once a person is infected. This medication can provide a normal lifespan to people living with AIDS. The main concern, however, is access to this medication. Most people infected with HIV live in low income countries and do not have the resources necessary to live a normal life with AIDS. In fact, 68% of all cases of AIDS are found in sub-Saharan Africa.[3] In this region, one out of every four adults is infected with HIV. Besides sub-Saharan Africa, the Caribbean, eastern Europe, and central Asia share high infection rates. In total, around 30 million people in low or middle income regions are infected with HIV, but only 5.25 million of them have access to ART. [3]

Besides the actual disease and its symptoms, having high rates of HIV can have other detrimental effects on a region. Without access to medication, people who suffer from AIDS may not be able to participate in daily work or earn income. It also puts a stain on local health care services. These challenges can prevent low income communities from rising out of poverty and developing both economically and socially.

According to the Sustainable Development Goals adopted by all United Nations members, the global community aims to stop the AIDS crisis by 2030. Member states also aim to have 90% of people living with HIV to be aware of their diagnoses and given treatment by 2020.[2] In an effort to uphold these goals, governments are considering distributing ART in every city and village to people who are at risk of contracting HIV but are not yet infected. David Gerberry, formerly a postdoctoral fellow at the University of California, Los Angeles (UCLA) and currently an Assistant Professor in Mathematics at Xavier University, stated, "Since results from clinical trials have shown that antiretroviral drugs are effective in protecting individuals against HIV, the big question now is how best to use them."[4]

Researchers at UCLA have revised this plan to be more effective in preventing the large scale spread of HIV. Using a complex mathematical strategy, they have developed “hot zones,” or places in which the HIV infection risk is much higher. In South Africa, this model would prevent 40% more people from becoming infected with HIV.[4] Not only does it work better, but it is cost effective as well. This strategy could dramatically minimize the spread of HIV, and one day, stop it completely.

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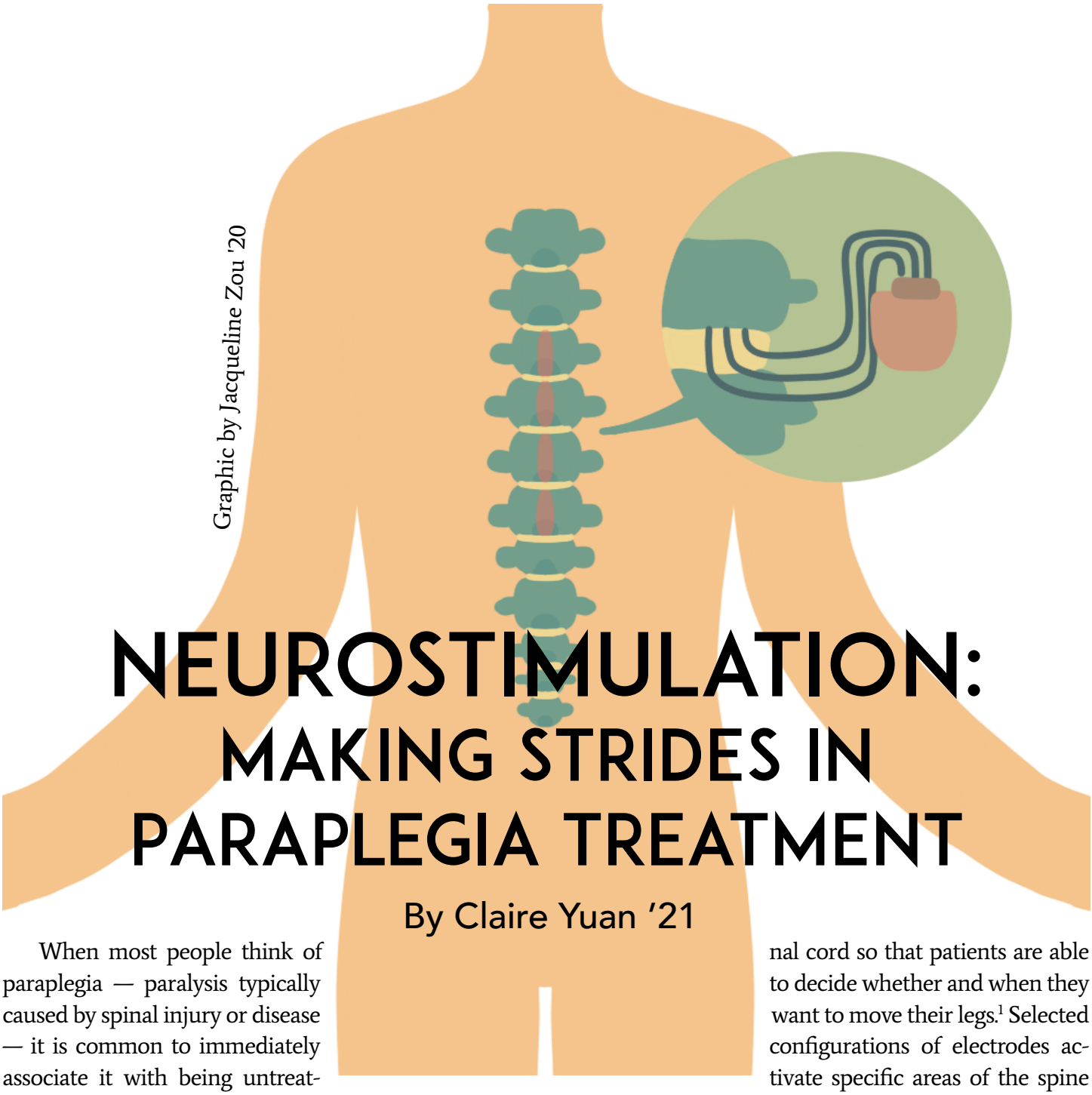

Graphic by Jacqueline Zou '20

NEUROSTIMULATION: MAKING STRIDES IN PARAPLEGIA TREATMENT

By Claire Yuan '21

When most people think of paraplegia — paralysis typically caused by spinal injury or disease — it is common to immediately associate it with being untreatable. But in recent years, scientists have made considerable progress in treating lower body paraplegia through the use of neurostimulation.

By carefully analyzing and mapping out the human spine, scientists were able to carefully pinpoint the placement of various small electrical implants. These electrodes were surgically inserted into the patients at their various injury sites, some near the spine, others in the abdomen. Even though they allow paralyzed patients to move their lower bodies, the electrical implants don't actually stimulate the muscles themselves; rather, the electrodes strive to neuromodulate the spinal cord so that patients are able to decide whether and when they want to move their legs.[1] Selected configurations of electrodes activate specific areas of the spine and mimic electrical signals that the brain would send. In the process, the electrodes are also able to regenerate and remap the nerves in damaged spinal cords.[2]

At first, the technology was tested on monkeys, the results of which were generally positive.[3] Later, the treatment transitioned to research trials on human patients, and the results have shown promise. The first few studies were published by scientists at the University of Louisville and the Mayo Clinic. Both achieved similar results in their patients, with some patients standing independently and others walking with assistance,

typically given through the form of walkers.[4] Combined with careful physical therapy, the implants have helped many patients who have been wheelchair-bound for years gain mobility.

In 2018, Jered Chinnock, a patient who had been paralyzed from the waist down due to a snowmobile accident in 2013, was able to stand and walk half the length of a football field.[3] The research team implanted an electrode in Chinnock's epidural space, which is the area just outside of the membranous "tube" that connects the spine and cerebrospinal fluid. When the efforts to help him walk began in 2016, Chinnock needed a harness to help him balance as he stood. But by the end of the study, the implant, along with the help of countless physical therapies, allowed Chinnock to successfully walk with a walker. When the electrode was switched off, however, he again lost the ability to move his lower body.[5]

Despite Chinnock's inability to stand or walk without the implant, other patients have experienced slightly better results. Gert-Jan Oskam, a 35-year-old man who was involved in a cycling accident in 2011, had been unable to lift his legs, even with intensive physical therapy. "The doctors told me that I would never be able to walk again," he said. "Now I can walk short distances with the help of electrical stimulation and crutches, and even without electrical stimulation. My muscle strength has improved substantially."[2]

For several of these earlier patients, implants were limited to a specific preset pattern of electrical pulses. In a more recent study, however, Grégoire Courtine, a neurologist at the Swiss Federal Institute of Technology, was able to develop a mobile app so that stimulation patterns could be controlled in real time by a tablet or smartphone. The goal of this app was to provide the opportunity to use neurostimulation as a form of therapy for when patients are at home, outside of the research realm.

These new strides in the field of paralysis have overturned many long-standing beliefs in both the scientific community and beyond about certain types of paraplegia. Of course, the use of neurostimulation as a means to treat paralysis remains a relatively unexplored field of study, and more research must be done in order to make this treatment widely accessible. For example, scientists still aren't fully able to understand exactly how neurostimulation assists walking. Kristin Zhao, an investigator at the Mayo Clinic explained, "The thought is that somehow there's a command coming down from the brain telling the lower limbs to move, and somehow the stimulation is enabling that."[4] Scientists know the electrodes are mimicking brain signals, but how those artificially produced signals affect the body to induce walking is unclear.

Nonetheless, Professor Robe Kaspa from the University of Melbourne believes that "this work presents a significant step towards establishing a viable approach towards restored function in at least a proportion of people with spinal cord injuries who would otherwise face long-term confinement in a wheelchair."[2]

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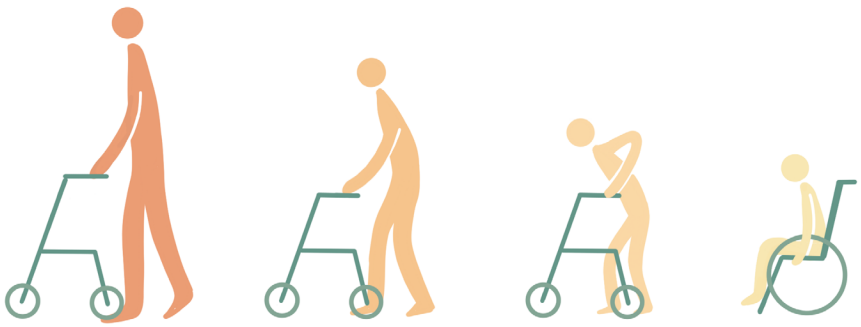


THE CALLA CAMPAIGN

Q&A

By Khushi Tyagi '20

Andrea Kim is a documentarian and media-maker interested in how new technologies and storytelling practices build social narratives. At the Center for Global Women's Health Technologies, she investigated how the design of medical technologies influence access to healthcare — in particular, cervical healthcare in low-resourced settings. To this end, she is developing a media initiative called the Calla Campaign, which brings together a global community to produce new perceptions of the cervix and reproductive health through education, art, and storytelling.

Andrea studied Global Cultural Studies with a certificate in Documentary Studies at Duke University. She worked in schools in Durham, North Carolina and Arusha, Tanzania to incorporate visual learning to education curriculum. More recently, Andrea worked with Moroccan youth in Agadir with the goal of creatively engaging future leaders through activities like building a flashlight circuit and co-creating portraits with their peers. She is currently editing a documentary film as part of the Calla Campaign, titled "The (In)visible Organ".

CPH: What is the Calla Campaign?
Kim: The Calla Campaign is a movement to bridge inequities in reproductive healthcare through technology, storytelling, and art. Our goal is to destigmatize reproductive anatomy of women and non-binary people to make healthcare more accessible. We believe that both art and technology can work together as platforms for education and storytelling. For instance, we've hosted art education workshops in which women sculpt vulva models in a self-expressive way, while also learning about their reproductive parts. We do a lot of research into health perceptions about cervical cancer, using the Callascope as a tool to dive into these questions.

CPH: What inspired the Calla Campaign?
Kim: The campaign was inspired by the Callscope, which is a low cost medical technology that can take images of the cervix. It's useful for early screening of cervical cancer, especially in low resource areas. Our team was surprised by the fact that the speculum, a medical tool for inspecting the cervix, had not been redesigned in over centuries and, in fact, was developed by experiments on enslaved women with no anesthetics. So we wanted to have more feedback from women in regards to tools that impact their lives, and create more positive associations with the body and the pelvic exam to encourage better reproductive health outcomes.

CPH: How does technology and art play a role in the Calla Campaign?

Kim: Technology and art are interesting because they are both reflections of the people engaging with them. They are platforms for human discussions and human stories. For this reason, we see both technology and art as tools to learn more about ourselves and communicate with those around us our experiences. Technology and art are both useful mechanisms for health education, as they open up space for creativity in how we see things.

CPH: What effects may the Calla Campaign have on women's reproductive health?

Kim: The campaign hopes for more people to be aware of their reproductive anatomy and health. We want to foster a culture in which women's education and empowerment is in the center, a culture in which people feel more comfortable to share their reproductive health issues and feel a sense of community around it. I think that changing perceptions about ourselves and our bodies is the first step to affect change within our communities; it happens from the inside out.

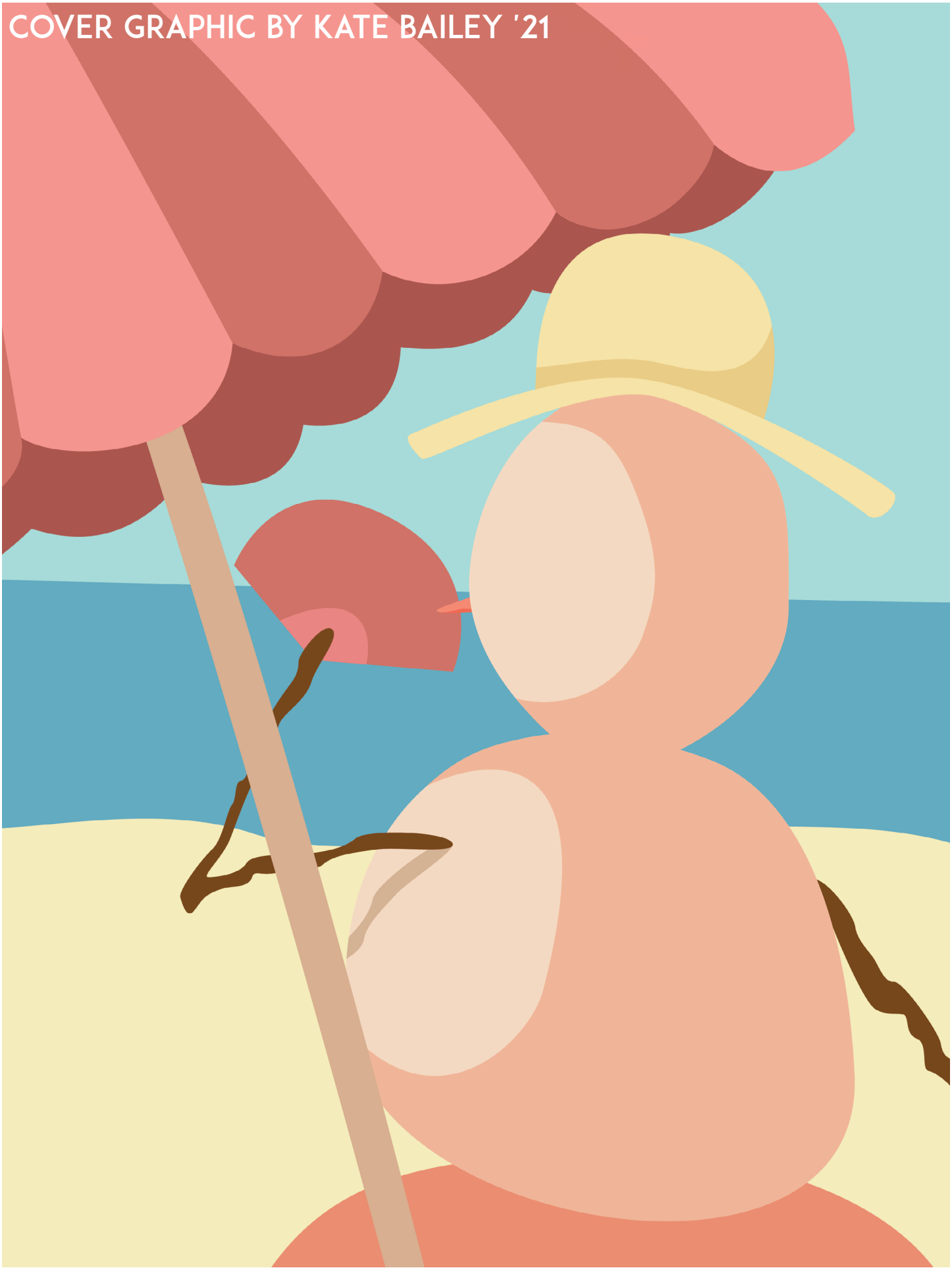
CPH: What has your role been in the Calla Campaign?

Kim: My role has been to manage the campaign and produce a documentary film. It's interesting because I was first on board as an outsider documenting the experience. As I got more and more immersed into the story, the Calla narrative, I've now become a part of it, a part of creating it. I think this reflects the spirit of the Calla Campaign in that its aim is to produce more people who subscribe to this new paradigm, one that prioritizes female reproductive healthcare in society, and takes part in strengthening this ecosystem of change.

CPH: Where do you see the Calla Campaign going in the future?

Kim: The Calla Campaign has huge potential for involving more people and communities. Especially with the Callascope on its way to becoming a commercial medical product and with the documentary film being released later this year, we hope to engage a broader community and spread the campaign's message, sparking curiosity and creativity of people from within their own communities to create solutions for women's health.

If you would like to learn more about Duke University's Calla Campaign, visit http://ignitecalla.com/.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