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PREMED PERSPECTIVE



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Profile: Keck Graduate Institute

The Keck Graduate Institute (KGI) is located in Claremont, CA, about 30 miles east of Los Angeles. KGI is a member of the prestigious Claremont Colleges: a consortium of small, private undergraduate colleges such as Pomona College and Harvey Mudd College; and of graduate level institutions such as Drucker Business School and Claremont Graduate University. Total enrollment in the school is less than 100. The campus itself is set in an office park, and the lecture rooms and labs reside in buildings that had previously housed a biotech company. The setting of the school gives it a very professional atmosphere.

KGI offers two degree options. The first is the two-year MBS (Masters of Bioscience) program, which gears its graduates towards a job in the biotech industry. The unique coursework involved in the MBS program allows students to take MBA level business courses along with a graduate level biological science curriculum. The philosophy behind the program is to give its graduates not only the solid scientific foundation to function effectively in a research and development environment, but also have the business proficiency to manage projects and run biotech companies. The second degree option offers a more traditional PhD degree program in Computational and Systems Biology. Since KGI's MBS degree has become extremely popular with both students and biotech companies in the recent years, this review will further discuss the MBS program.

MBS Curriculum: In the first year of the program, students take introductory business courses offered in conjunction with the Drucker Business School. These courses range from Business Ethics to Finance to Marketing Strategy. Along with these business-oriented classes, the first-year students also take biology classes in modules. The modules are designed to allow students to study various biological topics from three perspectives: biological systems, computational biology and bioengineering.

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The Berkeley Free Clinic

It is sometimes difficult to find an organization in one's city that provides healthcare to its community members free of charge. Yet, this kind of service can be found in the city of Berkeley. One of Berkeley's hidden resources is the Berkeley Free Clinic, located on Durant and Dana. Not only is this clinic's goal to ensure everyone has access to health services, but also that the community becomes aware of the major health issues within the community and how to prevent these diseases and illnesses.

One of the most amazing things about the Berkeley Free Clinic is that it is almost completely run by volunteers who dedicate their time to help others feel better at no cost. These volunteers have been a huge contributing factor to the success of this clinic since the beginning of its start in 1969. The Berkeley Free Clinic was founded as a "street medicine" clinic to serve the community during the absence of state and federal government healthcare service programs. Its philosophy is that "health care is a basic human right and a privilege and should not be linked to profit." Its goal is to empower individuals within the community with awareness of their own health and ability to prevent future health issues from occurring.

Within Berkeley Free Clinic's collective environment, confidentiality is constantly stressed and enforced. Also important is that the volunteers have a say in the formation and gradual change of the clinic's policies and job positions. Since each volunteer plays a crucial role in the continued survival of the clinic, they are always actively involved in the decision-making process of clinic regulations and gain experience working with others. These volunteers are from all different backgrounds; some of which are students attending the University of California, Berkeley; others are current medical students, graduates, and working adults or parents. They all help at the clinic to reach their common goal of making the community become a better place.

Among the many services offered at the Berkeley Free Clinic are its Medical Section (which provides medical examinations for its clients with STD concerns, colds, epidermal issues, and many more) and Lab Section (which is a subsection of the Medical Section that prepares and analyzes specimens taken from patients for indicators of gonorrhea, yeast infections, strep tests, pregnancy tests, and others), HIV Prevention Section, Dental Section, Information Resource Collective, Peer Counseling Collective, Women's GYN Section, and Gay Men's Health Collective. Each of these sections offer unique services covering almost all aspects of healthcare needed in a community.

Many times during the year, the Berkeley Free Clinic has openings for each section. This is a great opportunity to become involved in the community and to gain awareness of issues within the community. So take that step and check out the clinic!

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- Jessica Chow

Hair Loss: A General Overview

What comes to mind when people think of hair loss? Some people think of Rogaine, male pattern baldness, one of their superiors, cancer, or just the dreaded problem awaiting them as they age. It is a process that can be natural or inflicted upon by various causes, and it can affect both men and women, contrary to the popular myth that this only concerns men. Particularly in the case of women, losing hair on a daily basis is almost inevitable, varying from fifty to one hundred strands per day.

Varying degrees of hair loss can be attributed to many causes, most with which we are familiar on a day to day basis, like genetics and disease. However, the following explores the less commonly known causes for hair loss – causes that do not immediately come to mind when contemplating about the topic.

Repeated damaging exposures: Those who are daily or frequent swimmers are exposing their hair to chlorine, which dries and makes hair strands more susceptible to breaks. Wind and the sun are also culprits for harm to hair, resulting in similar consequences to those who are frequent swimmers. People who use blow-dryers to dry their hair are also increasing the likelihood to lose hair, since the heat can weaken the individual strands of hair and promote damage.

Stress (mental): This is a category unto itself, as it is a cause for many health concerns. Stress can weaken the body's ability to sustain hair (i.e., circulating nutrients such as biotin) as the body is concentrating on protecting other more vulnerable parts of the body under stress (i.e., the brain). The true mechanism of why this is so is not completely clear, though studies show that people who are under more strenuous conditions are more likely to suffer more hair loss.

Physical damage to the scalp/hair: This encompasses a wide range of possibilities for different people, from perms and other styling techniques, to prior surgery on the scalp. Hair-styling requires the use of numerous styling agents and gadgets, all to which contribute to a type of hair loss called "traction alopecia" ("alopecia" is the general term for hair loss). Hair is easily broken and hence can easily fall out, as a result. Certain cosmetic surgeries on the scalp can permanently damage the scalp (for instance, excising a piece of the scalp for potential skin cancers), which can evidently involve permanent follicular weakening and damage in the area surrounding the excision.

Nutrition: Inadequate intake of certain nutrients also contributes to hair loss. A diet lacking in biotin (a vitamin B complex) and zinc, which are essential for maintaining hair health, are causes of some hair loss. A diet low in essential fatty acids, which are needed for the health of the scalp, is also a contributing factor. Because of this, those who are malnourished, especially from eating disorders, have their hair "falling out" more than others. This is because their bodies are trying to route the nutrients usually used for the hair to other parts of the body that need more vital nutritional attention than the scalp and hair (this is another complement to stress as a cause of hair loss).

Medications: Medications such as allopurinol (treats gout), those used to treat cancer and/or in chemotherapy, and anti-coagulants are potential contributors to hair loss as well. These prevent circulation of certain nutrients and other substances in the blood to maintain the scalp for hair health.

A word of caution must be made when mentioning these "causes" of hair loss. Those mentioned are potential causes; however, each individual is different and extra exposure or use of one item does not necessarily

he/she is exactly vulnerable to hair loss (see sources for further information). And just because one loses a few strands every time he/she combs or brushes his/her hair does not imply that there is a health problem; as mentioned before, losing fifty to a hundred strands of hair per day is completely normal, as the body gradually sheds its older hairs for new ones.

How is hair loss then treated, when exposed to these risks for hair loss? Treatments are more often easier said than done, but fortunately do not require much medication, unlike other health concerns. For physical causes of damage to hair, the simplest answer is to minimize styling the hair, and/or be more gentle in handling the hair while in the process of styling (for instance, avoid yanking hair out of a tie or clips). Minimizing repeated exposures is much easier said than done; swimming or running in the sun is often a person's sport or part of a daily routine. Adequate nutrition, however, if diagnosed correctly as the cause to hair loss, is perhaps one of the easiest methods to fix. If the diagnosis includes lacking nutrients, eating more biotin or essential fatty acids, which are mostly found in soy, eggs, fish, and other sources of good protein, is a good way to eliminate the problem. Supplements may alleviate hair loss in addition to normal foods, but only a doctor can decide what is best for the individual. The hardest treatment for hair loss arises when hair loss is caused by medications; often, the medications that cause hair loss are those that are vital for a person's life, which without may present lethal consequences for the individual. In this case, only a doctor can prescribe the correct accommodating treatment and/or advice in what to do.

There is some assurance to this issue. It has already been mentioned that losing fifty to a hundred strands per day is a completely normal process, especially with women, since their hair is typically longer than men. When hair gets too long, there are not enough nutrients to maintain the strands, which then can fall off. In addition, every three months or so, hair is completely replaced with new hair, so losing several strands per day is just its gradual progression through that process. In other words, we are never with a "full head of hair," since we are losing hair all the time.

Should there be any concern about one's hair health, go visit the local clinic and/or make a visit to the doctor for proper diagnosis and treatment.

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- Diana M. Yee

The Commodity of Plastic Surgery

There was a time when a facelift or boob job was considered gossip column-worthy, but those days seem to be coming to an end. Over the past few years, cosmetic plastic surgery has become commonplace, with extensive media coverage ranging from reality television such as *The Swan* and *Extreme Makeover* to Miss Plastic Surgery beauty pageants in China, that the question arises as to whether plastic surgery has been reduced to a mere commodity. With so many aesthetically driven patrons supporting the cause, it seems that what had once been a drastic medical procedure has been devalued to little more than an exotic new piercing or tattoo.

The ever-resourceful *dictionary.com* describes a commodity as: "1. Something useful that can be turned to commercial or other advantage." Plastic surgery's commercial advantage is obvious in reality series such as *The Swan*, where the most beautiful job takes the cake, but what are its consequences?

"Ultimately," says Dr Morris VanAndel, registrar of the College of Physicians and Surgeons of BC, "you're taking a medical procedure and turning it into a commodity." And this devalues the doctor/patient relationship. "The judgment of the plastic surgeon who treats this kind of patient will be affected."

As plastic surgery receives more exposure on television, its publicity generates a fan base aspiring after "miracle makeovers," and many are fooled into believing that undergoing a dangerous "quick-fix" with their physical appearance will bring happiness.

The rising prevalence of plastic surgery among both the young and old is alarming. It is estimated that in South Korea, at least 1 in 10 adults have had some sort of plastic surgery procedure, and that even kids are having their eyelids done (the most popular surgical trend among East Asians where the eyelids are altered to form a permanent crease, a "double-eyelid," in order to achieve a more "Western" look). With procedures ranging from Botox injections to liposuction, it is no wonder that everyone wants to change imperfections. In some countries, it is easier to get parental permission for plastic surgery than it is to get daddy's car keys. According to Dr. Shim Hyung Bo, a plastic surgeon in Seoul, "Parents make their kids get plastic surgery just like they make them study. They realize looks are important to succeed."

Today, all beauty requires is cash, and people are blowing it at an unprecedented rate. Most new patients are young professionals who are either more self-indulgent or more comfortable spending serious money on their appearances. Luxury wrinkle creams can cost several hundred dollars, and with Botox shots going for about five hundred dollars a pop, you might as well just go the distance and get the whole face lifted for a few more. The extent of commoditization is incredible. It is becoming a trend to give another the gift of plastic surgery as some clinics have begun to offer plastic surgery gift certificates that people can buy for each other.

In Thailand, the surgical hub, the Tourism Authority of Thailand helps promote plastic surgery institutions to foreigners who make up one-third of its patients. The hospital has been described as a "five-star, round-the-clock plastic surgery factory with a Starbucks in the lobby, high-speed internet connection for patients and room service offering halal and kosher meals." Foreigners flock to Thailand for surgery because of the price. According to the article, engineering Ph.D. Park Chan Hoon quit his job to start a

travel agency offering plastic surgery tours for the Japanese. The package includes airfare, hotel, sightseeing, and say, a boob job—all for the cost of only the procedure alone back home.

Asia has seen a significant increase in cosmetic alteration as the Chinese economic boom escalates a new generation of nouveau riche. According to Dr. He Xiaoming of the Peking Medical Union College's Plastic Surgery Hospital, "People want to look more beautiful as a way to show off their newfound wealth," and in Shenzhen, a Chinese boomtown, thousands of unlicensed "beauty-science centers" lure in patients looking to buy a new pair of eyes or a new nose as the perfect accessory to their new cars and clothing.

The commodity of plastic surgery, however, is not always viewed as vanity. Many claim that their reason for embarking on the harrowing journey is necessity. Men in particular, claim that their jobs make it necessary to undergo plastic surgery. In 1997, Taiwanese entertainer Ching Wei took on a job that required him to escape from a wooden box that was set on fire, however, he found himself trapped and suffered third-degree burns. Ching saw his career disappear and attempted suicide, but five years and \$60,000 worth of surgery later, Ching is now an award-winning media personality and owner of his own communications company. "It's a miracle," he says. "Everything you see about me is the work of plastic surgery—my facial skin, implanted hair, and restored retina."

At a critical level, Ching Wei's surgery may be better categorized under reconstructive surgery rather than cosmetic surgery; however, the notion seems to have been long forgotten that plastic surgery started off as a reconstructive means to a normal life, and not the cosmetic option towards a glamorous life. An article in the Orange County register reported one of the consequences that people are paying for their newfound commodity—skin shortages.

Skin, like kidneys and livers, can also be donated and collected at skin banks. However, unlike internal organs, skin is not guarded by tight federal regulations. In turn, skin has become a commodity to companies developing products for plastic surgery. This makes skin shortages at hospitals a frighteningly common situation.

Skin is often used by hospitals in treating burn patients, and one patient can require more than 10 square feet of skin. Donated skin is the preferred treatment for burn injuries as it fights infection and dehydration while helping the body re-grow its own skin. Over time, the body will reject the skin, but as with any transplant, a patient can take drugs to suppress the immune system in order to allow some of the skin to become permanent. "When you have a great big burn, skin is absolutely essential to close the wound and start healing," said Bruce Zawacki, former director of the Los Angeles County-USC Medical Center burn unit. "Without skin, you are completely at the mercy of the environment. And none of the substitutes are quite as good as the real thing."

Lack of skin started to become an issue when plastic surgery started to power company sales, and skin began to look profitable. Collagenesis Inc. in Massachusetts can make \$36,000 on skin from one body by turning it into a gel that is injected to smooth wrinkles and inflate lips. LifeCell estimates the revenue from AlloDerm (a strip of skin that can be used as a sling under a weak bladder, fill a hole left by a tumor, fatten lips, or thicken a penis) in reconstructive and cosmetic surgeries at \$200 million annually, 10 times what the company could hope to make on burns. Plastic surgery has taken skin and turned it into a commodity.

Dr. Hugh Bailey in Newport Beach has used Dermalogen to puff up lips for years, but the skin shortage made (*continued on page 5*)

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him pause. "Obviously, a cosmetic lip augmentation should be a secondary use for skin if saving someone's life is the other use," Bailey said. "If this is in fact a problem, the burn-treatment community needs to be more vocal within the scientific literature and peer-reviewed journals of plastic surgery."

Perhaps the wasteful nature of cosmetic plastic surgery will eventually surface over time and act as a check for those who do not really need it. Even as a commodity, plastic surgery is still a risky and dangerous decision that should be made with careful contemplation of its costs and benefits not only to you, but also to those who care about you. Taking plastic surgery lightly as another commodity for sheer vanity or show of wealth is not the right way to approach such a drastic measure; and if that is the road that society is taking, it may be high time for society to rethink its course.

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- Christine Chen



Keck Graduate Institute (cont' from page 2)

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For example, a Genetic Control module class may last 3 weeks and is taught from a different perspective each week.

KGI helps its students land corporate internships for the summer after their first year. These internships range from biotech companies to consulting firms to venture capital organizations, and involve various job functions depending on the students' interests. Oftentimes, these internships lead to lucrative job offers upon graduating from the MBS program.

The second year of coursework in the MBS program is dominated by the Team Masters Projects (TMP). The TMP is the equivalent to a Master's thesis at more traditional graduate schools. Companies sponsor these projects while teams of



second-year MBS students work on them. Depending on a team's interests, these projects can range from market studies to research projects. Along with the TMP, second-year students continue to take business and biological classes at KGI and Drucker Business School.

Admission: Admission to KGI is based on a standard application, personal statement, 3 recommendation letters, transcript, resume and either the GRE or MCAT. Applications are considered for fall semester admission only and are reviewed on a rolling basis. Tuition is about \$33,000 per year, but with such high levels of corporate sponsorship and private funding, KGI is able to offer large scholarships to those admitted.

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- Li Chen



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Editorial: Facts and Myths of MRI

My mom recently had to receive a Magnetic Resonance Imaging (MRI) scan because of problems with the nerves in her arm. I tagged along for moral support and to satisfy my curiosity of what a MRI is really like. My preconception of a MRI is from vague media images where the patient is in a sterile, white-washed environment and painlessly rolled into a tunnel; the patient then comes out in a few seconds relatively unharmed. It turns out that some of my preconceptions were true, as well as false.

Since MRI is a non-invasive procedure, I did not understand why my mom would be nervous. While we were in the waiting room my mom was so nervous that she had me ask the technician whether it would hurt or not. The technician responded that it is painless and even a boring procedure. My mom felt scared because she knew it would be hard on her arm to stay still and perhaps she is frightened about what the results may show. I, on the other hand, was not nervous; not because I was not the patient, but because I believe that with this technology, we can finally find out what has been bothering my mom for over a year.



I was surprised when I entered the scanning room because it was not as sterile as I thought it would be. The room looked more like one found in a vacation resort, as there were nice cushioned chairs, ferns, and paintings. The setting seemed like it would ease the anxiety in patients, making them feel as if they were about to receive a massage. The technician then handed my mom and me earplugs. I found out that the earplugs were to help block out the clicking noises that occurred during the exam. It turns out that the sounds were radio signals being sent

out to the body. The energy from the radio signals were then absorbed by different atoms in the body, reflected back, and recorded on the MRI scanner. A digital computer then reconstructs the echoes into images of the body.

What I also realized was that the patient does not simply roll in and out of the MRI unit within seconds. Although the patient only has to stay completely still for up to four minutes at a time, it is hard to do so when the patient is someone who is typically in pain already. The patient can also communicate in between scans with the technician by using a speaker phone. This allows the technician to ask the patients how they are doing. My mom responded that she was good after the first scan, but after the second scan she said she was not feeling well. I became worried that she was in a lot of pain from staying still. The technician came in and put some padding under my mom's arm to ease the pain. It is also a hard experience when the patient may have a tendency for feeling claustrophobic. From TV, the MRI unit looks like it's no big deal; but close up the MRI unit does seem daunting as it looks like a contraption used to go to outer space. The tube is very small and narrow, and a patient could not get out without someone rolling them back out.

Fortunately, my mom was able to stay still for the rest of the imaging so she did not have to retake any. Afterwards, the technician provided us with a CD disc that contained all the images so my mom can take it to her neurologist. This whole process took around 15 minutes, not surprising since a typical exam ranges from about 15 minutes to 45 minutes. As a pre-health student, I was excited to examine the images. Although I am not able to evaluate the images, I am anxious to hear how the neurologist will interpret them.

After the experience I went home and did some research about MRI. MRI uses a strong magnetic field to excite and relax protons in order to create clear pictures of soft-tissue structures near and around bones. Also, to go into the MRI unit room, one has to have no metal objects inside or outside of their body. This is because the magnetic field can be dangerous if the patient has metal objects implanted, such as a heart pacemaker, prosthetic hips, or if the patient is pregnant. As an observer, I was also asked if I have metal objects on me; the magnetic field is not only contained within the MRI unit, which is a tube enclosed by a cylindrical magnet.

The images created by the MRI scan are an invaluable tool for doctors to be able to detect diseases throughout the body and abnormalities such as brain aneurysms, stroke, tumors, structures of the heart, and integrity of the spinal cord. MRIs are usually covered by insurance, but for patients that are uninsured, a MRI exam can cost over \$1000.

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- Jennifer Shih

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Healthcare in the Developing World

In America, there are relatively sanitary environments, access to clean water and medical treatments, and numerous physicians available with just a phone call away. With all the benefits that American citizens have in the country, it is easy for us to take the healthcare system for granted. The majority of citizens in first-rate nations, like the United States, does not struggle with health concerns on a daily basis. Citizens also do not witness prevalent deaths caused by raging infectious diseases because these countries have the financial means to prevent and treat them. However, looking beyond the comforts of first-rate nations and entering the realm of poverty and healthcare inequities in the developing world, we see diseases that we have long ago deemed irrelevant and unthreatening. For instance, the six most treatable diseases that cause the majority of the 10.6 million deaths of children are pneumonia (19%), chronic diarrhea (18%), malaria (8%), newborn blood infection or pneumonia (10%), preterm delivery (10%), and asphyxia at birth (8%). Tuberculosis accounts for 2 million deaths a year, of which 90% occurs in developing countries. This article will touch on three specific diseases that strike Third World countries, claiming millions of victims worldwide.

Malaria is a severe and often fatal parasitic disease that is transmitted by infected mosquitoes. Thus, it is important for people traveling to high-risk areas to obtain anti-malaria medication and to avoid exposure to mosquitoes during their stay. The four kinds of malaria parasites that infect humans include *Plasmodium falciparum*, *P. vivax*, *P. ovale*, and *P. malariae*. These parasites destroy red blood cells by multiplying and lysing the cells, the carriers of oxygen throughout human bodies, which consequently leads to anemia. In cerebral malaria, infected blood cells can block blood vessels in the brain. Other vital organs may be damaged as well, ultimately leading to death.

According to the World Health Organization, about 300-500 million cases of malaria occur every year, and one million people die from it. Thus, malaria is certainly not a disease that has been eliminated and is actually still quite common, especially in poor countries with subtropical and tropical climates. Malaria is particularly endemic to warmer regions because the *Anopheles* mosquito, the primary carrier of malarial parasites, thrives in high temperature environments.

There are several common treatments to malaria, with chloroquine now known as being the least effective. The parasites have grown resistant to the treatment throughout the sub-Saharan region, which has initiated the end of its use. The most effective treatment known today is Artemisinin-based combination therapies (ACTs), which is a combination of anti-malarial drugs and artemisinin-based drugs (derived from a Chinese wormwood). It is actually quite expensive to develop artemisinin-based drugs, making their supply quite low and its accessibility to developing countries a near rarity. However, there is currently a joint project underway among the nonprofit pharmaceutical companies One World Health, Amyris Biotechnologies, and UC Berkeley's very own California Institute of Quantitative Biomedical Research. The project is to develop artemisinin easier and in higher quantities using *E. coli* bacteria to manufacture the chemical. With a \$42.6 million grant from the Bill and Melinda Gates Foundation, UC Berkeley is on its way to deciphering and mastering the synthetic process of artemisinin.

Leishmaniasis is a parasitic disease caused by the protozoa *Leishmania*. The parasites develop in the gut of a sandfly, which is the insect carrier of the disease. When transmitted, the parasites attack the

reticuloendothelial system and cause the rupturing the blood cells. This then leads to the infection of other organs and eventual death of the human host. The most common forms of the disease include cutaneous leishmaniasis and visceral leishmaniasis. Victims of cutaneous leishmaniasis have volcano-textured skin sores that may or may not be painful. Visceral leishmaniasis, also known as kala azar, is the most dangerous of the various versions of the disease, and it affects internal organs of the body such as the spleen, liver, and bone marrow. Its symptoms include fever, weight loss, enlarged spleen and liver, and anemia. 1.5 million people are estimated to be infected with visceral leishmaniasis, with 500,000 cases emerging annually. 90% of cases occur in Brazil, India, Bangladesh, Sudan, and Nepal.

Chagas Disease is a disease that occurs only in Latin America. It is the primary cause of heart failure in the Americas and is transmitted to humans by a triatomine insect possessing the parasite *Trypanosoma cruzi* (*T. cruzi*). 10 to 12 million people are infected with the disease, with at least 50,000 people dying from it annually. There are three stages of infection, consisting of a series of symptom, that may all or partly be experienced by victims. In the acute stage, which is only experienced by 1% of those infected, the Romaña's sign appears, characterized by an eye on one side of the face swelling. This is a result of a bite wound or the insect's feces being deposited into the eye directly or accidentally by the rubbing of the eye. Other symptoms include enlarged spleen or liver, fatigue, and swollen lymph glands. In the indeterminate stage, which occurs 8 to 10 weeks after infection, the victim does not experience any symptoms. Chagas Disease remains dormant, and the absence of symptoms may last for years. In the final chronic stage, which occurs 30 to 40 years after infection, a person can develop cardiac problems such as an enlarged heart, heart failure, cardiac arrest, and altered heart rate or rhythm. However, only 20% to 30% of infected victims experience these chronic symptoms.

For more information on healthcare in the developing world, visit the World Health Organization website or the sites referenced. Moreover, internship programs are available for those who wish to travel abroad and help in developing countries. Several programs include The Foundation for Sustainable Development, Amigos de las Américas, Council on International Educational Exchange, and Volunteers in Asia.

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- Stephanie Wong

AIDS in Africa

The number of people affected by AIDS has been on the rise in recent years. Global AIDS rates have increased at an alarming speed, from about 2 million AIDS cases in 1996 to 37 million in 2002. While AIDS death rates in the wealthiest countries have been on the decline (due to access to expensive drugs), it is an epidemic in many of the world's poorest nations. The region most affected by AIDS is Africa, specifically sub-Saharan Africa. Due to the extreme poverty and lack of infrastructure of many African nations, it is very difficult for those affected by AIDS to receive education and treatment.

Acquired immune deficiency syndrome (AIDS) is a virus that weakens the immune system through an immunodeficiency virus, HIV. Those infected with AIDS gradually lose the ability to fight infection and can fall victim to illnesses such as diarrhea, tumors, and pneumonia. Most AIDS researchers believe that people contract AIDS from chimpanzees—which have been known to carry a similar virus—by eating them or being bitten by them. Currently there is no cure for AIDS and no vaccine to prevent infection of HIV, but there are drugs that can slow down the spread of the virus; additionally, drugs can also decrease the rate at which AIDS weakens the immune system. In some patients the virus has been reduced to undetectable levels.

Part of the reason that AIDS could devastate the development of sub-Saharan African nations is that large numbers of people in key roles are dying: teachers, farmers, civil-servants, and young professionals. In Southern Africa, those living with

AIDS, on average, do not live to see their 40th birthdays. The group hardest hit among Southern Africans are women and their children. Because many parts of Southern Africa are extremely poor, women often sell their bodies in order to earn money or as a means of acquiring material goods. Because AIDS spreads through the transfer of bodily fluids, women with AIDS can also pass the disease to their children by breast-feeding.



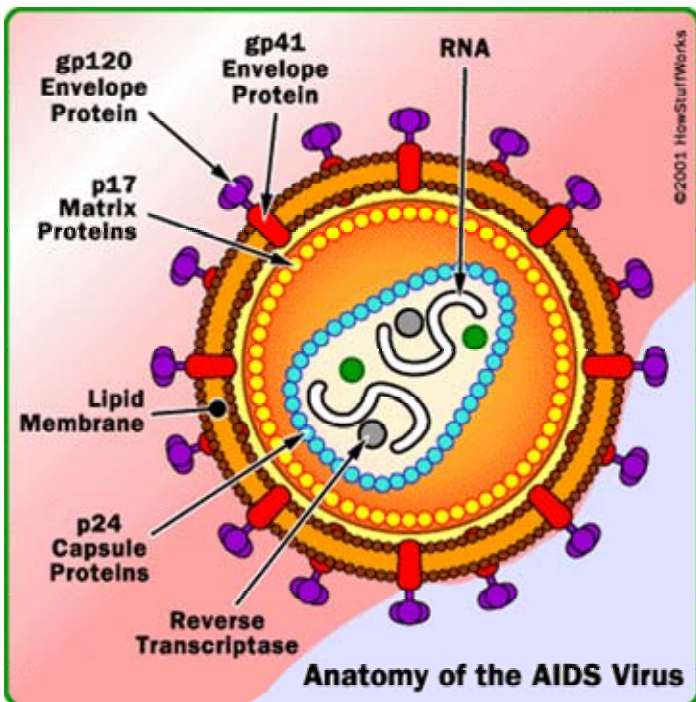
AIDS kills over 6,000 people each day in Africa, killing more people than the wars, famines, and floods that occur in Africa. Of the estimated 40 million people living with AIDS in the world today, nearly 70% of total AIDS cases occur in Africa. In 2003, global AIDS fatalities totaled approximately 3 million; over three-quarters of which were in Africa alone.

Currently, it is estimated that an effective monetary response to the disease is \$10 billion annually; however, to date the world has not met this mark. At the present rate of infection, the cost of an effective global response to AIDS will rise to about \$15 billion by 2007. In 2002, the World Health Organization (WHO) has started a drive to provide drugs to 3 million people with AIDS by 2005, combined with expanded education and prevention campaigns, an end to discrimination against people with HIV, and treatments to prevent mother-to-child infections.

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- Jennifer Hsu



Obesity and Fast Food

Ask anyone about the first thing that pops up in one's mind when the words "fast food" and "health" are mentioned together; one will probably tell you "obesity." Obesity, a condition diagnosed to those who have an excess amount of body fat in comparison to the amount of muscle, bone, and water, is a growing phenomenon in America today and continues to wreak havoc on our public health system.



Sixty percent of Americans over the age of 20 are already overweight and a quarter of the population is obese. Although not lethal by itself, obesity can increase a person's risk of other life-threatening conditions like stroke, heart disease, high blood pressure, type II diabetes, and even some forms of cancer. The National Institutes of Health approximate that nearly 280,000 adults die each year from obesity-related problems. In addition to health risks, people who are overweight or obese also

undergo emotional and psychological stress. In a society where physical attractiveness is equated with thinness, overweight individuals often experience much more social ridicule because of their appearances.

Many regard fast food to be bad for one's health, but is there an actual correlation between fast food and obesity? A group from Children's Hospital Boston conducted a recent study to answer this specific question. In the study, it was found that people who eat out at fast food restaurants twice a week or more were fifty percent more likely to develop obesity than people who eat fast food once a week or less. People who eat out twice a week or more and watched at least two and a half hours of television a day had triple the risk of developing obesity.

Another study by the hospital focused on child obesity. The study stated that one-third of all children within the ages of four and nineteen eat fast food, which may lead to the suggested 15 percent obesity prevalence in children of the United States. Although these studies may not offer causal evidence, they do suggest a strong correlation between obesity and the consumption of fast food.

Because of studies conducted by Children's Hospital Boston and others, fast food companies have experienced lawsuits and other similar conflicts from consumers. They are often

targets of blame for people's obesity problems. Fatty burgers, fries, and fried chicken are cited as objects of addiction because of their big portions, low prices, and unhealthy yet good taste.

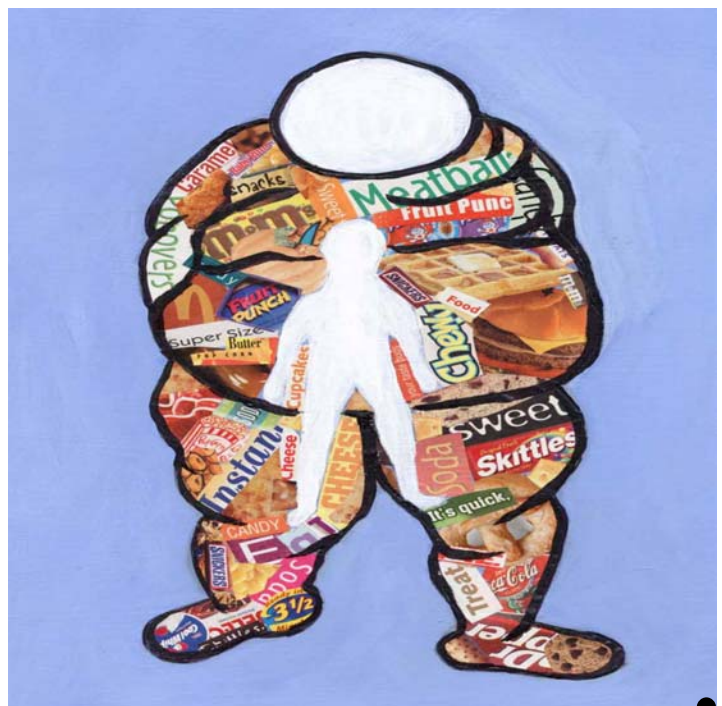
Though these cases have not been very successful, fast food companies like McDonald's have recently changed their menus to offer less fatty and healthier alternatives to mainstays, like the Big Mac and Chicken McNuggets, in order to deter future lawsuits against them. When one walks into a McDonald's, he is now allowed to order salads, veggie burgers, and low-fat yogurt parfaits. Other fast food companies have also followed McDonald's lead in offering healthier alternatives.

As more research is being conducted to study the effects of fast food on the overall health of Americans, fast food companies are modifying their menus to offer a wider range of items. Some companies are even cutting down on the fatty foods. Though a small step toward improving the consumers' diets, any help is welcomed as a way to overcome, or at least slow down America's growing obesity problem.

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- Kentson Lam



Premed Perspective

Premed Perspective is in its fifth year of publication at the University of California, Berkeley campus.

The publication was founded with the intent of providing free monthly newsletters to those on the Berkeley campus who are interested in medicine, science and health.

We are always on the lookout for new writers to join Premed Perspective staff and gain experience in writing articles, designing layouts, and interviewing doctors and members of the medical community.

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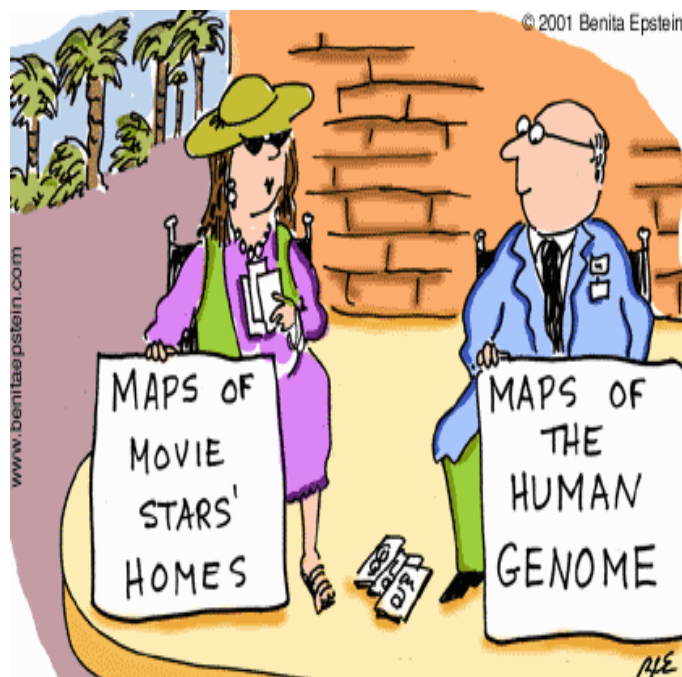
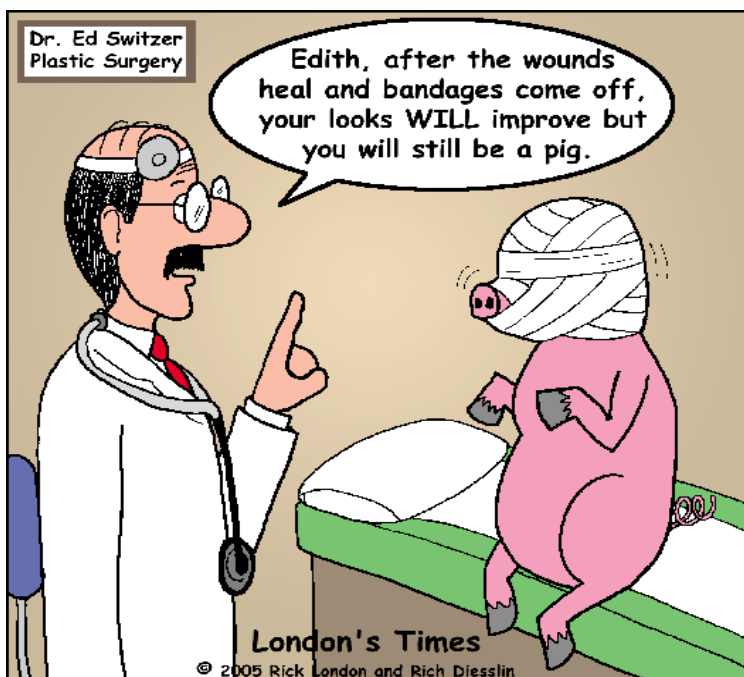
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