PLANNING FOR GAME DAY SUCCESS

Exercising Your Bones
Let’s Talk About Normalizing STIs
Faculty Spotlight: Dr Karyn Taplay RN, PhD
Editor’s Note

As Brock Health Magazine’s 2019/2020 Editor-in-Chief, I am honoured to present to you the 18th issue of this outstanding publication.

The Brock Health Magazine team continually strives to present the Brock and Niagara community with a health-related magazine that provides relevant and up to date information on a wide range of themes. The article topics are carefully chosen and written by Brock undergraduate students and then edited for accuracy and overall article style and flow by graduate students.

Through this convenient and accessible platform, Brock students are able to address the Brock community and greater Niagara region regarding today’s most talked about and asked about health concerns. The issue you are currently holding covers a variety of topics with our feature article exploring Sport Nutrition for Game Day Success.

This publication could not have been possible without the hard work and dedication of the Brock Health Magazine team. I am incredibly grateful for my phenomenal team of executives, most of whom are first time executives for the Brock Health Magazine. Thank you to our executive team: Aryan Kahlon, Sarah Ricker, Sarah Medeiros, and Baber Awan. It has been a pleasure to lead such a fantastic team. I would also like to recognize the marketing team: Rob Bracken, Shawneil Villaspin, Crystal Chung, Christabel Oghinan and Zach Walters, who dedicated their time and expertise to fundraise and market our magazine to potential sponsors. Furthermore, thank you to our official donors of the publication including Northpoint Family Medicine, Mentholatum, Campus Pharmacy, and King Tandoori Restaurant.

As always, thank you to the Brock University Student’s Union for being so supportive and encouraging regarding the production of the magazine. Thank you to our graduate editors: Robert Kumar, Eleni Patsakos, Matt Milligan, Kate Wickham, Meghan Robinson, Deborah Termini, Victoria Pacione, Mia Geromella, Taranjot Dhillon, Ashley Soucie-Vukmanich and Aqui Laidlaw, as your instruction and guidance is essential to the merit of the magazine. Another thank you is owed to Alexandra MacLean, our creative expert, as without her our beautiful arrangement and design the magazine would not be possible. Lastly, a big thank-you to all of our writers and readers, without whom this magazine would not be what it is today.

For those interested in any aspect of health or research, I encourage you to reach out to us via social media or email for more information on how to become a member of our dynamic team. On behalf of the Brock Health Magazine executives as well as the entire Brock Health team, we hope you enjoy this issue and we are very grateful for your interest and loyalty to the Brock Health publication.

Happy Reading!

Aaron Wexler

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The nature versus nurture argument has been debated amongst philosophers dating back to ancient Greece, into the age of enlightenment of the 18th century and even today amongst geneticists, psychologists and anthropologists [1]. What exactly shapes the way we are? Which aspects of life exactly influence the choices we make and what inspires our minds to think the way we do? Such questions seem daunting and answers offer many perspectives from different fields of research. However, with the foundations of epigenetics in the 1940s [2], a new perspective on the centuries old argument offered to shed a light of why we are the way we are. With continually emerging studies in this field, we are beginning to see that we are the product of both nature and nurture.

Epigenetics simply put, are heritable changes in gene expressions without actually changing the DNA sequence itself [3]. When understanding how epigenetics works in its biochemical process, it may be easier to think of it as a company chain of command. You have your epigenome which acts as a CEO. The epigenome, which is derived from your original genome, controls when, which part and how much of your genome is expressed [2,3,4]. The CEO (epigenome) passes on orders down to department managers or in this case methyl groups [2,3,4]. The methyl groups dictate how much a genome can be expressed by using histones, or frontline workers in this analogy, to either tightly wind (less expression) or loosely wind (more expression) the genome [4]. The winding of the genomes is the final step in this command chain in which you are left with an expressed or non-expressed gene, this would be the final product.

With the combined efforts of the epigenome, methyl groups and histones, research has shown that gene expression is not permanent and can be changed throughout one’s life [4]. Furthermore, it is not just affected by environment, but also from what you have inherited from your parents and grandparents [2]. Studies have shown that epigenetic traits tend to be passed effectively to two generations [5].

We all are aware of the benefits and the importance of a healthy diet, physical exercise and taking adequate rest. It is incorporated into the thought that we need to invest in our health now to reap the rewards as we age, but what if these rewards extended to your children and grandchildren? Epigenetic research in mice has shown that factors such as poor diet, distant relationships from parents and stress can cause genes that are more associated with anxiety, a lower lifespan and inattentiveness to be more expressed and carry on for the rest of their lives [5]. Even more concerning is that these very same traits on the genome tend to be passed onto the offspring, thus potentially passing onto them behavioural, and health disadvantages in their lives [5].

Such cases are not exclusive to mice, emerging studies in the last few years replicate these findings in humans when looking at family medical history and the onset of obesity rates, diseases and mental health [5]. Although not necessarily in the extreme of the mice case, you as well carry genes that have changed, that were either created by you or inherited through your parents, over the course of your life. Take a moment and reflect how your personality, behaviour, diet and other things have differed from various timestamps of your life. Chances are, your choices, your parent’s day to day decisions and environment have collaborated to effectively change who you are.

It seems almost impossible to believe that your everyday choices will have a profound affect on at the least 2 generations of your offspring [4]. Decisions you face such as, to walk to school, or to perhaps staying up later to binge Netflix may influence not just the overall health of your offspring, but their personality as well [2,4,5]. These choices extend to the movies you watch, taste in music, and a variety of other factors that cannot be quantified as good or bad, but nonetheless may carry a change in your genome that could transfer onto your offspring. The good news is that epigenetics is not set in stone. To offer a better perspective of the power you wield, your day to day living, may in turn result into your kids and grandkids to become largely influential figures, and perhaps re-shape society and the events future!
Life happens, and along the way, we all have our share of bumps and bruises. As a student it can be very difficult to find affordable and accessible health care. Fortunately, as a Brock student you are granted access to the newly upgraded Brock University Student Union Health Plan. Recent work from BUSU allows Brock students the opportunity to claim increased allied health benefits on campus.

With the upgraded health plan, students can make claims on chiropractic, physiotherapy and massage services. Without BUSU coverage, Brock Sports Medicine Clinic charges $45 for a half hour massage, $75 for an hour massage, $50 for a physiotherapy appointment, and $40 for a chiropractor visit. Going forward, every single student that is enrolled in the BUSU Health Plan will receive $500 each year to put towards physiotherapy and registered massage therapy. The per visit maximum has been increased to $50 per visit. This means that our students now receive 10 sessions of physiotherapy or massage therapy every year, absolutely FREE.

With the new additions added to the BUSU Health Plan, students now receive greater coverage on massage therapy and physiotherapy in addition to the previous access to chiropractors, podiatrists, osteopaths, naturopaths, and acupuncturists.

When asked about the change, BUSU Vice-President of Finance and Administration, Asad Jalib, responded stating that “the change came about from identifying a gap in the ability for our students to access affordable physical therapy treatment in an efficient manner.”

As one can imagine, students with barriers to physical activity which could occur from chronic or acute injuries will lack in academic performance compared to an individual without those barriers in place [1]. This improvement to the Health Plan will allow students to treat physical injury and take preventative measures to ensure that they can participate in activities that will improve their post-secondary performance and overall experience.

Physiotherapy and massage therapy is available at the Brock Sports Medicine Clinic in Harrison hall located across the street from the Walker Complex. To book your initial appointment, call 905-688-5550 ext. 3791 or walk in and speak to the receptionist to set up an appointment.

In order to access the benefits provided by the new Health Plan, students must verify that they are enrolled in the BUSU Health Plan. Once verified, you can book your initial consultation, call 905-688-5550 ext. 3791 or walk in and speak to the receptionist regarding setting up an appointment. After attending and paying for your session, a reimbursement claim can be submitted via the Medavie Blue Cross app or by visiting the BUSU office. To access the Medavie Blue Cross app, download the application to your smart phone and register using the information found on your plan card which can also be picked up at the BUSU office.

With these new installments available upon enrollment in the BUSU Health Plan, there is now more support to ensure that your experience at Brock University is an exceptional one. For any questions, comments or concerns please reach out to BUSU at healthplan@brockbusu.ca or visit the BUSU office.
In this age, social media has become a critical aspect of our society. It plays a fundamental role in the way in which we connect with others and stay connected to the world around us. However, in the last few years as it has increasingly become more popular, many concerns have been raised pertaining to potential health consequences of using it. Many studies in the field of psychology have found correlations between increased social media use and poorer mental health including increased susceptibility to depression, anxiety, feelings of loneliness/isolation, lower self-esteem, and even suicidality [1]. However, there are many ways you can alter your usage in order to retain the positive aspects and remove, or at least mitigate, the associated negative repercussions. This article will review 5 strategies that can be utilized to improve one’s mental health regarding social media use.

1. First of all, ensure that you scroll consciously; meaning that you become acutely aware of how each image you see on your feed impacts you immediately. Does it make you happy? Sad? Jealous? Whatever the emotion may be, take note of it. Remind yourself that the content you’re seeing is not representative of anyone’s actual life and that most people tend to showcase their “highlight reel” on their social media [2].

2. Secondly, unfollow accounts that trigger a negative emotional response. A study conducted at the University of Houston in 2014 showed that viewing constant information about your Facebook friends and their lives negatively impacted people to a higher degree when compared to observing other types of content [3]. Therefore, once you take notice of your feelings, do not simply ignore them; unfollow or mute the account instead. Alternatively, follow accounts that make you happy and inspire you. This could include inspirational quotes/story accounts, baby animal accounts or anything else triggering positive feelings. Inspirational content has been proven to improve one’s social media experience [4].

3. Limiting the frequency of social media use is another step one can take to better their mental health. Studies conducted in the field of psychology have shown that those who spend more time per day on social media show more prominent signs of poor mental health. One study even found that “using less social media than you normally would leads to significant decreases in both depression and loneliness” [1]. Therefore, next time you plan on looking through your feed, try setting a 5-10-minute timer to ensure you don’t accidentally waste hours scrolling. Additionally, it could prove useful to give yourself a daily limit regarding how long you want to be using social media. One study found that limiting oneself to 30 minutes per day can significantly improve one’s mental health. After just three weeks of intervention, participants in the study reported reduced levels of depression and loneliness [1].

Rachel Boase
Another way to ensure a more positive experience with social media is to mute the notifications on apps such as Instagram, Snapchat and Facebook [5]. Having these continuous notifications in the form of a ringtone or vibration leads to a spike in cortisol levels, the stress hormone which induces the “fight or flight” response [6]. Social media app notifications have also been found to release dopamine, a neurotransmitter that controls the pleasure-reward center of the brain and plays a large role in addiction. Ultimately, this could lead to the hypothesis that continuous notifications on one’s phone may increase the likelihood of developing a phone addiction [6].

One last strategy to reduce negative impacts on mental health caused by social media is to occasionally undergo detox periods where you refrain from using social media entirely for a set period of time. This can be 1-2 week periods or even longer if desired. Participating in a detox can have many positive effects. It allows you to have more free time to explore other hobbies, forces you to live in the moment instead of documenting every aspect of your life and can in general improve your overall mental health [1]. Use the time away from your social media accounts to reflect on how the cleanse is impacting you. Do you miss social media? Do you find that you have more free time? Do you feel happier/sadder/lonelier? Take note of the experience when your detox period is over and modify your social media usage in a way that best serves you.

Good mental health and social media use don’t have to be mutually exclusive; by implementing the above strategies, you can have both. Therefore, social media can be beneficial or detrimental to health; it just depends how you choose to use it.
Exercising Your Bones
Katherine McKee

As majority of the population knows, the more your muscles are used and exercised, the stronger they become. What is interesting to think about is if there is a similar response in bones during exercise and day-to-day weight bearing activities? One of Brock University’s labs did a study looking at the impact of plyometric exercise on bone health. What is plyometric exercise? It is weight bearing activities such as jumping jacks, squat jumps and one-legged hops. In short, what this study really wanted to know was if bone formation and resorption changed after being physically active. What Brock University students should know is that the answer is yes.

Bones maintain themselves over time by constantly forming new bone cells (osteoblastic activity), and resorption of the old cells (osteoclastic activity). This is fully normal, however if this cycle or turnover of bone is irregular it can cause severe problems with bone formation, density, size, shape and internal structure of our skeleton [1]. When participating in plyometric activities, your body releases a hormone, sclerostin, which acts as a stopper on bone formation. The hormone, Osteocalcin, is also released throughout the body and is used in the body as a bone formation marker [4]. More specifically, exercise has been shown to acutely increase bone formation while decreasing bone resorption biomarkers, and this has been observed in high impact exercise as well as moderate intensity exercise in adults and children [1,3]. When looking at muscles, mechanical loads and muscle contractions that are in addition to those experienced during daily activities, it is important to keep in mind that not only are muscles being influenced, bones are getting stronger as well.

This study found that plyometric exercise was sufficient in eliciting an osteogenic response through a transitory decrease in the bone resorption and an increase in the bone formation 24 hours following high impact exercise [6]. What this means is that when you are active and doing plyometric (weight-bearing) activities, your body is producing more bone formation markers, and less bone resorption [2]. This change in bone turnover is leading to stronger bones and a healthier skeleton.

Another study Brock did was looking at High Intensity Interval Training or HIIT, which is short bursts of high intensity exercise. For example, this is when people give all the power and strength they have towards an activity, such as sprints or tucks, for a 30-second time interval. The results of this showed that HIIT activities lead to stronger bones [5]. HIIT training might be aimed at building muscle or burning fat but also impacts your bones [1].

In conclusion, these two Brock studies demonstrated that a single bout of plyometric exercise or HIIT can lead to a steady decrease in post-exercise bone resorption. HIIT also leads to an increase in bone formation 24 hours later, suggesting an overall increase in bone turnover favoring bone formation in adults. If we can keep our bones strong as university students, we have a better chance of preventing osteoporosis and bone deficiencies as we age. Doing physical activity that strengthens our muscles or burns fat is beneficial, but now studies show that we exercise both our muscles and bones.

Bone health has an impact on our lives whether we realize it now or later in life. Having weaker bones means having an increased risk of fractures, osteoporosis, arthritis and an overall worse quality of life. If students can attempt to exercise for even 20-30 minutes a day doing something as simple as jumping jacks, they can set themselves up for a better quality of life down the road.
dated in 2019, it removed dairy and its serving sizes switching to portions of the plate (half vegetables/fruit and a quarter meat and whole grains each) and to promoting healthy food choices. It now also has a major parts dedicated to motivating and improving healthy eating habits like drinking more water and remembering to enjoy your food [4]. The second are CSEP guidelines the gold standard for the integration of physical activity, sedentary behaviour and sleep. Adults (18 to 64 yrs) should accumulate 150mins/week of mod-vigorous aerobic activity (Ie. jogging or biking) in bouts of at least 10 minutes. At least 2days/week of muscle and bone strengthening activities using major muscle groups should be dispersed with the aerobic activity. Exercise has the side benefit of improving mental health which is another important factor. Adults should limit sedentary behaviour to 2 hrs a day and sleep for approx. 8hrs [5]. These two guidelines help provide people with the tools and basic information needed to create their own health based off personal choice and experience.

Easier said then done, being healthy can often be a challenge to the modern consumer. There are several obstacles in the way of being healthy including but not limited to socioeconomic status, convenience vs health priorities, not having the time and usually partly due to the seeming enormity of the task. Habits are automatic reactions to contextual clues, meaning that with enough repetition you can consciously and mindfully create healthy habits through associative learning by connecting them to external cues that help reduce conscious effort and the need for motivation. An example is learning to wash your hands after using the bathroom as a child. Unfortunately, it's often harder to break bad habits and form new good ones [6]. Therefore, while many health professionals often advise lifestyle changes, they are often brief changes like cutting down on cholesterol. Often hesitating to advise traditional behaviour change strategies because they are often too time consuming to explain and ultimately difficult for the patient to implement, then even harder to maintain as the patient’s attention and motivation usually dwindle. Instead health care professionals have realised that their advice must be easy to understand and implement, leading to the successful mixed approached using habit forming skills initiated by the motivation of brief changes [6]. So, start off small, choose just one area of health that is interesting to you and try to do it everyday for thirty days to start forming a habit because health is more than just the absence of disease.

Life is busy and there’s always more to do, often we end the day feeling exhausted, stressed out and older than our years. We drudge through week by week, hating Mondays and waiting for Friday, then look back to yesterday and all of a sudden, it’s been years. One of the main reasons the body begins to deteriorate as you get older isn’t that there is necessarily additional stress on the body, but that the body is slowly losing its ability to heal from the every day stress of being alive [1]. Everyone knows you need oxygen to survive, but did you know it’s also slowly killing you? Broken down into highly reactive free radicals as it’s used by the body, oxygen contributes to the normal wear and tear of living, as well as several diseases [2]. Fortunately, you can help prevent this simply by ensuring you eat enough antioxidants like vitamins C and A, commonly found in orange and dark green vegetables [2]. Just like how days turn to years slowly shaping our futures, so to do habits we develop in early adulthood shape habits later in life, meaning healthy living in old age can be improved by healthy living in youth [6]. In fact, these preventative measures are often only effective before middle-age or have a greater impact during youth. For example, it is important for females to receive adequate amounts of calcium and strength/resistance exercise during youth to ensure good bone health or bone mineral density (BMD) before menopause, as the drop-in estrogen levels effects bone remodeling and reduces the capacity for increasing BMD [3].

There are far too many tips and rules for healthy living to state them all in this article. However, there are two important basic guidelines that can provide a base. First the Canadian Food Guide was recently up-

Feeling Old Yet?
Jessica Albright

Life is busy and there’s always more to do, often we end the day feeling exhausted, stressed out and older than our years. We drudge through week by week, hating Mondays and waiting for Friday, then look back to yesterday and all of a sudden, it’s been years. One of the main reasons the body begins to deteriorate as you get older isn’t that there is necessarily additional stress on the body, but that the body is slowly losing its ability to heal from the every day stress of being alive [1]. Everyone knows you need oxygen to survive, but did you know it’s also slowly killing you? Broken down into highly reactive free radicals as it’s used by the body, oxygen contributes to the normal wear and tear of living, as well as several diseases [2]. Fortunately, you can help prevent this simply by ensuring you eat enough antioxidants like vitamins C and A, commonly found in orange and dark green vegetables [2]. Just like how days turn to years slowly shaping our futures, so to do habits we develop in early adulthood shape habits later in life, meaning healthy living in old age can be improved by healthy living in youth [6]. In fact, these preventative measures are often only effective before middle-age or have a greater impact during youth. For example, it is important for females to receive adequate amounts of calcium and strength/resistance exercise during youth to ensure good bone health or bone mineral density (BMD) before menopause, as the drop-in estrogen levels effects bone remodeling and reduces the capacity for increasing BMD [3].

There are far too many tips and rules for healthy living to state them all in this article. However, there are two important basic guidelines that can provide a base. First the Canadian Food Guide was recently up-
Planning for Game Day Success
Anne Guzman

Student life can be hectic. Couple this with regular training and competition, and many student athletes without a plan find themselves scrambling to grab food before an event. Without consuming enough of the right foods, they may find themselves “hitting the wall”. With a little planning and a few insights about acute pre-game nutrition strategies, athletes can be well on their way to game-day success.

One specific aspect of sports nutrition that can help with performance is an acute nutrition strategy, which can be used the day of competition. An acute strategy refers to your plan in close proximity, time wise, to your competition, for example the day before or the day of.

Many factors need to be considered when developing a sports nutrition plan. Quality, timing, and quantity are all important to help athletes perform and recover optimally, while maintaining general health. Taking the time to understand your personal energy needs will pay off through improved energy and performances.

The duration and intensity of your competition will be a deciding factor in how much energy you’ll need before and during your event. Sports that include moderate to high intensity effort rely largely on carbohydrates as a fuel source [1]. Carbohydrates are mostly stored in the muscles and liver as glycogen a type of energy we store. Moderate to high intensity exercise lasting at least 60-90 minutes, such as soccer, requires more glycogen stores and therefore more carbohydrate intake, versus a light jog. This article will focus on moderate to high intensity sports lasting more than 60 minutes.

When going into competition, having optimal glycogen stores and consuming carbohydrates during the event, can increase an athlete’s ability to sustain exercise intensity [2]. The longer the event, the more important carbohydrate intake and glycogen stores become. However, fitness levels, musculature and diet will factor into how much glycogen can be stored. Typically, most people can store between 400g-500g of glycogen. This equals about 1,600-2,000 calories. Due to this limited capacity to store carbohydrates, having a plan that can maximize stores pre-competition is key. Carbohydrate loading before an event can help prepare athletes for game day. The magnitude of a carbohydrate load should be relative to the duration and intensity of the sport.

Typical carbohydrate intake for competitive athletes ranges from 5-12g per kilogram of body weight per day. An average elite cyclist training 12-15hrs/week consumes 8-10g/kg/bw per training day [1]. However, intakes will vary depending on specific training blocks and competition cycles. During competition, carbohydrate intake is based on hourly absorption, not by body weight and intakes can range between 30-90g an hour.

Many free apps are available to log nutrition including; loseit.com, cronometer.com and myfitnesspal.com. These apps generate an output showing your macronutrient intake in grams.

To practice, set up a ‘mock’ pre-game day in an app, logging foods you’re likely to consume. Add in your carbohydrate intake for the day, falling within the range of 6-10g/kg/day. For athletes doing sports...
that are both intense and of longer duration, start on
the higher end of the spectrum; 8g/kg/day. Whole-
some, budget friendly carbohydrate loading foods
include, but are not limited to, potatoes, rice, cereal,
oats, dates, bananas and bread. Next, enter foods to
meet daily protein needs. Intake should fall between
1.2g-2g/kg/day or 0.3g/kg over several meals through-
out the day [4]. Budget friendly ideas include eggs,
canned/frozen fish, yogurt, tofu and lentils. Lastly, add
in your healthy and essential fats. Different types of
essential omega-3 fats come from a variety of foods
such as canned tuna or salmon, walnuts, edamame,
sardines, flax and hemp seeds. Fat intake varies de-
pending on calorie needs, but often falls between 20-
35% of total daily caloric intake. On a carbohydrate
load day, keep fat intake on the lower end to make
room for carbohydrates and ease digestion. Once a
pre-game day template has been built, the next step is
game day nutrition.

Ideally, you should give yourself 3-4 hours
to digest a pre-game meal. Look at what time your
competition starts and work backwards to set meal-
times, with snacks in between being optional. Know
your meal timing and have food ready to reduce any
last-minute stress. Your pregame meal should be a
well-rounded meal including 20-25g of lean protein,
lower in fat, and anywhere from 1-4g/kg body weight
of carbohydrates. Keeping fiber low close to intense
competition will ease digestion and may help avoid
potential gastrointestinal stress.

If you only have one hour after waking before
competition, your focus should stay mainly on easy to
digest carbohydrates. Aim for a maximum of 100g of
carbohydrates during this hour to reduce chances of
gastrointestinal upset [3]. Potatoes, sports drinks, ba-
nanas, rice bars, cereal, sports gels and energy blocks
are good examples. Finally, although consuming eas-
ily digestible protein in this time period can help with
recovery post competition, it could also impair diges-
tion; experimentation is key to determine what works
for you.

After executing your ‘mock gameday nutrition
strategy’ during training, take note of your ability to
sustain intensity throughout training or whether you
faded before the end of the session. You’ll also have
to be attentive to in-game nutrition which was briefly
mentioned above. If you faded, revisit your in-game
nutrition first. If increasing carbohydrate intake during
training helps you sustain intensity you are set. If not,
revisit your carbohydrate load, and increase accord-
cingly. This process requires effort by you, however,
investing the time during training will remove the
guessing and allow you to arrive at game day feeling
confident about your nutrition strategy. Every athlete
can benefit from confidence.

Budget Friendly Carbohydrate Ideas for Students:
Based on 1 cup measurements unless noted otherwise as per tbsp. or ½ cup measurement.

<table>
<thead>
<tr>
<th>Food</th>
<th>Amount</th>
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<tbody>
<tr>
<td>Potatoes cooked cubed</td>
<td>26g</td>
</tr>
<tr>
<td>Rice cooked</td>
<td>40g</td>
</tr>
<tr>
<td>Pasta cooked</td>
<td>40</td>
</tr>
<tr>
<td>Beans - black beans</td>
<td>40g</td>
</tr>
<tr>
<td>Oatmeal - 1 cup dry not cooked</td>
<td>54g</td>
</tr>
<tr>
<td>Dates - Medjool dates 4-5 large</td>
<td>72-80g</td>
</tr>
<tr>
<td>Sweet potatoes</td>
<td>26g</td>
</tr>
<tr>
<td>100 fruit juice</td>
<td>26g</td>
</tr>
<tr>
<td>Cereal (Alpen Original is great)</td>
<td>64g</td>
</tr>
<tr>
<td>Beans (if tolerated)</td>
<td>40g</td>
</tr>
<tr>
<td>Bread (varies - on average per slice)</td>
<td>15g</td>
</tr>
<tr>
<td>Jam - per 2 Tbsp. (on average, brands differ)</td>
<td>30g</td>
</tr>
<tr>
<td>Cream of Wheat</td>
<td>23g</td>
</tr>
<tr>
<td>Raisins - 1/2 cup</td>
<td>65g</td>
</tr>
<tr>
<td>Banana 1 medium</td>
<td>27g</td>
</tr>
<tr>
<td>Honey 2 tbsp.</td>
<td>34g</td>
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The Faculty of Applied Health Sciences at Brock University is comprised of multiple degree programs, however, one’s mind may rarely wander to nursing when thinking about the available programs. Nursing students receive various degrees of surprise over the fact that Brock even has a Bachelor of Science in Nursing (BScN) program when asked about their area of study. The point is, in East Academic building 3, tucked away where rarely any person ventures, there are several professors conducting groundbreaking research in the field of nursing. One of these professors is Dr. Karyn Taplay, RN, PhD.

Dr. Taplay began her career in nursing by obtaining her BScN from the University of Toronto and subsequently began working in the field as a Registered Nurse in the labor and delivery, nursery, and postpartum divisions. Although she is currently not working as a frontline nurse, Dr. Taplay expressed that the field of maternal child nursing care was always appealing to her because of the enormous degree of critical thinking involved, along with the fact that she is not simply treating a mother and baby, she had the humbling opportunity to care for an entire family system.

Dr. Taplay has always been involved in educational leadership from clinical instructing, preceptorship, and acting as an overall leader for other nurses on the floor at her hospital. With initially no intention of continuing her nursing education, in our interview, Dr. Taplay explained that the nurses around her saw things in her that she didn’t see in herself. Dr. Taplay expressed how much she enjoyed her time in clinical practice but as with any health-based profession, education and continuous learning is never complete. As a result, she went on to obtain her Master’s degree from the University of Texas Pan-American and her PhD from McMaster University, both of which were focused on nursing and its applications in the domain of research.

Dr. Taplay has been an Associate Professor in Brock University’s Nursing Department since 2007. She is currently teaching the fourth year Community Health Nursing course and, in the winter, will be once again teaching her Care of the Young Family course delivered to second year nursing students. Dr. Taplay is very passionate about the experiential learning and student focused innovation philosophy that Brock University is built upon. The freedom to be flexible and explore new teaching strategies has enhanced Dr. Taplay’s abilities as a professor.

Along with being a very active faculty member of the nursing department, Dr. Taplay is currently in the data collection phase of her main research endeavor. Her research is primarily qualitative in nature and covers the overarching topics of simulation, nursing, and healthcare education. Her research is focused on how caregivers are reflecting on clinical experiences, as most of the reflection tools created for clinical practice are centered on the clinician reflecting from their perspective, which allows them to focus on how they felt about their actions. However, what is currently lacking in the field is a tool that allows for reflection from the patient’s perspective. This type of research is not feasible on patients in a real clinical setting and therefore must be completed using simulations.

Using the simulation patients in the nursing lab and spyglasses technology, Dr. Taplay is monitoring special awareness and the perception of space between personal support workers (PSW) and their patients during care. Through a short-simulated patient and PSW interaction, followed by a debrief, Dr. Taplay is hoping to qualitatively identify themes and create a new patient reflection tool. The goal of the research is to expand this type of patient centered reflection into other health disciplines such as paramedics and physicians. Eventually, the hope is to disperse this reflection tool internationally.

Her collaborative research group includes other professors, along with graduate and undergraduate students. Dr. Taplay is passionate about involving students in all things nursing and showing them the sides of nursing that are not necessarily clinically based. Dr. Taplay’s approach and philosophy of, “mentoring students wherever they meet you” has allowed her to inspire and teach the nurses of tomorrow.

I’d like to thank Dr. Taplay for taking time to answer my questions and make her the focus on this year’s faculty spotlight. Through showcasing astounding work like hers, the hope is that the Brock Nursing Department can become more widely recognized both on and off campus.
HARM REDUCTION STRATEGIES WITHIN FUTURE OF DOPING
Sean Sabbatini

Drug use had been present in some form since antiquity. If an event’s outcome bared the weight of any incentive of value, odds are attempts were made to gain advantages through doping. In the third century BCE, Greek athletes were reported to have ingested a variety of mushrooms to improve performance, ultimately risking public embarrassment for success. Similarly, Roman gladiators and soldiers had been reported using stimulants to overcome fatigue [1].

Doping saw a marked rise during the mid-twentieth century as a result of research on drug synthesis. In the early twentieth century, the scientific focus on human performance saw innovations to improve the vigor of factory workers and soldiers as well as athletes. Further, in the 1930s and 40s, there was some scientific debate regarding how functional drug use may be no different than other forms of training or coaching [2]. Functional drug use refers to a strategic use of substance to achieve a set goal, such as improving a particular skill, not to be confused with recreational or use based upon dependency.

Sports change over time, as they change methods of preparation for sport changes as well. Athletes today are expected and encouraged to seek every possible way to improve their performance, including specialized training, high-tech design of equipment and apparel, scientific and medical support, including the use of nutritional supplements. In contrast, many of such techniques may have been akin to cheating in the early 19th century [2]. Today, increasingly specialized equipment is less widely available than doping supplements of the past. Notions of what is fair and what is not changes constantly, hence it is hard to define what should be banned. Thus, changing measures of fairness result in sets of legally arbitrary, doping procedures, which has clearly given rise to contradiction which can ultimately harm the athlete [3].

Dramatic improvements have since been developed by the pharmaceutical industry allow for much safer drugs that are tailored to athlete-specific requirements [1]. Although drug abuse can be severe and destructive, drug abuse is not inherently tied to performance enhancers, some of which can be used safely if administered correctly. The risks associated with doping can be greatly reduced if athletes are informed and are receiving a well-manufactured drug [3].

Sport has become increasingly professionalized and commercialized due to increased capital interest, illustrated today as Fitness and Sport is the 11th largest sector of the U.S economy. As such, athletes have grown increasingly lucrative, leading more individuals to dedicate large portions of their lives exclusively to this endeavor [4]. For the professional athlete, their sport is their livelihood, and their performance is paramount in remaining a professional athlete [2]. A hardline anti-doping policy creates a situation where an athlete who has dedicated their life to their sport at a professional level, can lose years of their athletic peak and prime earning potential, for taking over-the-counter cough syrup due to a suppressed immune system as a result of their vigorous training regimen. Elite athletes only represent a small fraction of the global population but the resources of anti-doping almost exclusively go into testing of these athletes, while the highest percentage of steroid users are males between the ages of 20-25 who are not competitive athletes and often are well-educated with college degrees [4].

As science progresses and athletes search for better supplements, the World Anti-Doping Agency (WADA) has always tended to be lagging just behind the doping community. There is still no definite detection method for autologous blood doping, that is using an individual’s own centrifuged blood to isolate for hemoglobin-rich erythrocytes, consequently the search for alternative strategies has been an open issue since at least 2014 [5]. Athlete’s pursuit of winning ultimately seemed to cause a doping arms race, wherein the WADA is always just behind athlete incentivized scientists as they have no means to discovering what the next big doping agent will be. Already the funds required for doping control are remarkably high, considering this, we are in danger of creating a situation where operations required to regulate athletes will become unsustainable; resulting in a situation wherein a radical shift must be adopted [6]. Consequently, if a radical shift were to occur wherein drugs in sport were permitted, a method could be developed to regulate the quality and safety of drugs consumed by athletes, as well as provide information on commonly used performance enhancers to both educate them as well as ensure their health and wellbeing, starkly opposing the “zero tolerance” culture of doping [2,6,7].
According to the American Sexual Health Association (ASHA), “one in two sexually active persons will contract a sexually transmitted infection (STI) by age 25 [2]. Moreover, other research suggests that more than 50% of people will contract an STI at some point in their lifetime [3]. With such a high prevalence, it is astonishing how much stigma surrounds those who have infections [1]. For years, those who have contracted STIs have been frowned upon, especially amongst adolescent adults [4]. Words such as “dirty”, “promiscuous”, “bad” and “gross” have been attached to those who contract various STIs [2].

With that said, the stigma around STIs has ruined relationships, reputations and decreased willingness amongst many to get tested [1]. This has promoted a culture that shames individuals for contracting an infection that they often cannot predict, control, or know of in some cases. In a perfect world, our society would like to believe that every young adult is making the effort to use barrier contraceptive methods (i.e., condoms) while engaging in sexual activities. The reality is that this is not the case, and if barrier contraceptives were used more commonly, the prevalence of STIs among adolescent populations may not be so high [3]. No matter how many studies, commercials or health promotion initiatives are made, there are still going to be people who choose not to use barrier contraceptives [1].

Now, it’s not to say that adolescents should not be vigilant about using protection. It is important that adolescents are aware of the consequences that may arise when practicing risky sexual behavior [1]. What needs to be understood is that STIs can be contracted by anyone who is practicing unprotected sex (yes, even if you have just one committed partner) [2]. STIs such as Chlamydia and Gonorrhea, for example, are often asymptomatic, this means that if you are regularly engaging in unprotected sex and not regularly getting tested, you could easily have an infection and not even know it. Even worse, you could be unwittingly spreading it to your partners because you are unaware that you have it [3]. Your health is a priority, and such infections left untreated can lead to serious sexual organ complications, especially for women [1]! Furthermore, it is important to understand that STIs can be transmitted orally, vaginally and anally. So, if you think you are safe from these infections because you’re not engaging in vaginal or anal sex, just remember that you can still easily catch an STI when practicing oral sex [2].

It’s not society’s role to cast judgment on those who chose not to practice safe sex or those who chose to have multiple partners. No one here is supporting risky sexual behavior but it’s important to cast light on the ridiculous stigma that is perpetually associated with the whole idea of contracting and testing STIs. Young adults often like to suppress discussions about sex or the practice of sex as a whole [4]. However, it’s important to remember that sex is natural, normal and should be an important topic of conversation. Discussions about STIs should always be a topic of importance between you and your sexual partner(s)!

Let’s Talk About Normalizing STIs
Mona Ghosh
Where do we go from here?

Well, it’s simple - GET TESTED! The best thing is, it’s free, does not take long and is really easy to do. All health clinics in the Niagara Region make testing readily accessible and provide results within a reasonable time frame. Whether you have five partners in a month or one continuous partner for a while, getting tested for STIs is nothing to be ashamed of. Taking control of your sexual health is important and having conversations about is not something to be fearful of. It’s about time young adults fight the stigma against STIs and work towards open discussion around it. Understanding that STIs are normal and that many people will contract one in their lifetime is the first step towards improving everyone’s sexual health. With that said, make sure to take advantage of the various resources on campus. There are events on and off-campus such as Pee for Pizza and Sexual Health Niagara. These are all great ways to start being proactive with your sexual health. Below are some local clinics near campus, where you can get a quick STI check-up and talk to a health care professional about your “sexual health”. Remember sex is normal, sex is natural, so talking about STIs should be too!

Niagara Region Sexual Health Centre - Reproductive Health Clinic
St. Catharines, ON
(905) 688-3817

Student Health Services-Medical Clinic
1812 Sir Isaac Brock Way
(905) 688-5550

Glenridge Walk-In Clinic
St. Catharines, ON
(289) 362-5333
REFERENCES

Epigenetics: The Subtle Decisions That Shape You

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Vaughn:
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