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Karen Richardson and Sam Baumgarten

Jonathan Shaw (2004) wrote the following in the *Harvard Magazine*:

In the bottle before you is a pill, a marvel of modern medicine that will regulate gene transcription throughout your body, helping prevent heart disease, stroke, diabetes, obesity, and 12 kinds of cancer—plus gallstones and diverticulitis. Expect the pill to improve your strength and balance as well as your blood lipid profile. Your bones will become stronger. You'll grow new capillaries in your heart, your skeletal muscles, and your brain, improving blood flow and the delivery of oxygen and nutrients. Your attention span will increase. If you have arthritis, your symptoms will improve. The pill will help you regulate your appetite and you'll probably find you prefer healthier foods. You'll feel better, younger even, and you will test younger according to a variety of physiologic measures. Your blood volume will increase, and you'll burn fats better. Even your immune system will be stimulated. There is just one catch: There's no such pill.

The prescription is exercise.

The above quote can't really be news to anyone reading it these days. The importance of exercise or, to use the more popular term, regular physical activity, has received much national publicity since the early 1990's. In 1992, the American Heart Association approved a "Statement on Exercise," declaring the benefits of regular physical activity and citing physical *inactivity* as a risk factor in coronary artery disease. The Heart Association reaffirmed that statement again in 1996 and, in 1999, the Surgeon General's Report on Physical Activity and Health further confirmed the important health benefits of regular physical activity. More recently, the government published a document called *Healthy People 2010*, which sets a series of goals for organizations around the country engaged in creating healthier people. Among the many goals that the document lays out, one of the most significant is for individuals to "improve health, fitness, and quality of life through daily physical activity."

What does useful physical activity and a healthier nation look like according to the government? Creating a healthier citizenry, according to *Healthy People 2010*, means increasing the number of people who engage in vigorous physical activity three or more days per week for 20 minutes or more per occasion; increasing the number of people

engaged in moderate activity five days per week for at least 30 minutes, and increasing the number of people engaged in activities that improve muscular strength, endurance, and flexibility.

Interestingly, an adjunct publication to *Healthy People 2010*, entitled *Healthy Campus 2010: Making It Happen*, developed by the American College Health Association, adopted similar recommendations for college-age people. The "Making it Happen" after the colon makes good sense. It is infinitely easier to get healthy and stay healthy than to have to recover from illness or accident later in life. In a 2009 article published in *Review of Research in Education*, researchers argue that traditional college-age students undergo significant lifestyle changes during their college years that will impact their decisions throughout their lifespan. Good life habits need to start early, and yet there is growing evidence that young people are, as a whole, moving away from the kinds of regular physical activity that will help them prevent unnecessary injuries and debilitating and chronic disease as they age. And the statistics for



underrepresented populations are even worse. Add to this the mounting evidence that there is more to a healthy student body than strong bodies that age well. Physical activity makes healthy brains, the kinds of brains we want in a college classroom, and yet, long before students find their way to our classrooms, they are already experiencing health risks due to a lack of meaningful physical activity and education.

Many young people in Massachusetts and across the nation are overweight or obese and do not get the recommended amount of physical activity. Today's college students often have not had regular physical education as part of their K-12 education. According to a 2006 School Health Policies and Programs Study that appeared in *The Journal of School Health*, only 8% of elementary schools and 6% of middle and high schools meet the recommended 150 minutes and 225 minutes per week of physical activity respectively as many schools have cut or reduced physical education programs. Due to the current financial crisis, many school districts opt either to reduce students' physical education programs or eliminate them completely.

Closer to home, in Massachusetts, K-12 schools are required to have physical education; however, there is no minimum amount of time spent in physical education mandated by the state. A Robert Wood Johnson Foundation study of Massachusetts schools found that 59% of Massachusetts high school students were not getting the recommended amount of daily physical activity, and 30% of Massachusetts 10 to 17 year olds are obese or overweight. The statistics are equally disturbing for young adults: between 25% and 33% of college-aged students are overweight or obese.

We still have much to learn about the impact of obesity and lack of fitness on academic success. The research literature is somewhat ambiguous about the way that obesity influences academic



achievement, but there is evidence of a direct association between them. A 2007 study involving white females, aged 14-17 indicated that a difference in weight of 50 to 60 pounds was found to be associated with an 8-10% difference in GPA. Other studies have indicated that children with weight problems are twice as likely to be in special education and remedial classes. In a 2009 article in the *Journal of School Health*, a significant relationship existed between physical fitness and academic achievement on the Massachusetts state required MCAS test. The authors of the study found that the odds of passing the MCAS math and English tests increased with the number of physical fitness tests passed. Further, weight status was inversely related to passing the MCAS test. A 2005 report indicates that overweight youth and adolescents are more likely to have mental health conditions (e.g., depression, low self-esteem, anxiety disorders), which may serve as mediating factors for an overweight child's poor performance in school.

The connection between successful academic performance and physical health is an intriguing idea. There is now a body of research demonstrating the key role of exercise in the functioning of

the brain. Dr. John Medina, a molecular biologist, published a text entitled *Brain Rules* in 2008. Brain rule number one is that "Exercise Boosts Brain Power." Medina points to evidence showing that those engaged in lifelong physical activity demonstrate an "astonishing elevation in cognitive performance compared with those who are sedentary." Exercise improves those brain functions that are connected to academic success.

Another well-known and respected researcher, Dr. John Ratey, clinical associate professor of psychiatry at Harvard Medical School, has continually trumpeted the connection between regular physical activity and brain functioning. In 2002, Ratey published *A User's Guide to the Brain: Perception, Attention, and the Four Theaters of the Brain* and, in 2008, he completed his latest work, *Spark: The Revolutionary New Science of Exercise and the Brain*.

We are born movers, Ratey points out, and yet, unfortunately, we've engineered movement out of our lives. In his thorough review of the research that is out there, Ratey argues several points that support the fact that for peak brain performance, our bodies need vigorous activity. Exercise increases and balances

important neurotransmitters like serotonin, norepinephrine and dopamine. It influences the cellular processes in the brain, fostering the processing of new information. It elevates levels of Brain-Derived Neurotrophic Factor or BDNF—what Ratey calls “Miracle-Gro” for the brain. BDNF is essential for the growth of neurons and the development of synaptic connections, the key elements in learning. Ratey also goes on to document the positive effects of regular activity in reducing stress, anxiety, depression, and attention deficit, all of which may hinder learning.

As a college community we might ask, why do we care if our students engage in physical activity as part of their college experience? One answer may be that as educators we care that our students understand the connection between physical activity and good health both in the short term and over a lifespan. Poor health, associated with inactivity, can negate many of the benefits of higher education on the career trajectories and socioeconomic status of students, but even more so on low income and minority students.

Obesity and physical activity patterns vary by race, gender, and other social factors. For example, research indicates that ethnic minorities and children from low-income families have significantly higher obesity rates than their white and more affluent peers. Among all children, obesity rates have increased, but the rise was highest among African-American children. Obesity for minority and low-income populations is further affected by the poor quality of schools, lack of neighborhood safety, and lack of access to parks, inadequate public transportation and lack of grocery stores in communities.

Bridgewater State University has shown a deep commitment to social justice by working to improve educational opportunities for all students. The recent grant-funded initiative called *Project Compass* reveals a commitment to

closing the achievement gap among majority groups and students from historically underrepresented groups: students of color, students who are first in family to attend college, and students who are financially at risk—groups that make up over 60% of the entire BSU population.

If we are to provide a quality education for all students then we must also focus on the intersection of physical health and educational disparities. Research shows that students who experience poor health early in their lives have descending trajectories in academic and socioeconomic status that continues into adulthood. Poor health impacted significantly by obesity, disproportionately influences low-income and underrepresented students who are the populations of particular interest at BSU with programs such as *Project Compass*.

We ask our BSU colleagues to consider a change to the Core Curriculum that would include a sincere commitment to physical education. If students were required to engage in physical activity classes over at least two semesters at BSU, then all students would have the opportunity to engage in physical activity in a safe and supportive environment, which many under-represented students are unable to do in their home communities. Students would have the opportunity to select among diverse activities, designed to meet students’ needs and interests, with clear expectations for learning. Promoting and educating students about physical activity should be seen as a means to redress wider inequalities in aspects of health (e.g., diabetes, obesity). This includes recognition of the barriers to physical activity, increasing the knowledge about physical activity, and promoting motivation to engage in physical activity among our disadvantaged groups.

While the inclusion of a three-credit requirement, spread over time so as to encourage on-going engagement, is not

necessarily the ultimate solution to the issue of chronic physical inactivity, or a guarantee that students will remain active, it will provide a clear and strong statement that Bridgewater State University believes that regular physical activity is essential to effective living. Just as we, the faculty and administration, decide that students should be aware of and knowledgeable in history, math, philosophy, art, and science, without any guarantee that such exposure will have lifelong impact, we should make the firm statement that a fully educated person is aware of the need for physical activity and has developed movement skills.

The school environment has enormous potential to educate students and to provide resources to support students’ physical well-being through physical activity classes. Researchers have found that the consistent influences on physical activity patterns among adults and young people include confidence in one’s ability to engage in physical activity, enjoyment of physical activity, positive beliefs about the benefits of activity, and a lack of perceived barriers to being active. A commitment to physical education and activity in the lives of our students now translates into a lifetime of improved quality of life. Let us offer our students, in our classrooms now, and as graduates later, the myriad benefits of physical activity to both brain and body.

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