Hanover Wellness Education News

January, 2014 http://www.hanoverschools.org

What Should I Eat?

The Harvard School of Public Health (2013) recommends eating mostly vegetables, fruit, and whole grains, healthy fats, and healthy proteins. We suggest drinking water instead of sugary drinks. It's also important to stay active and maintain a healthy weight. Here are their simple guidelines for creating a healthy meal.

Make most of your meal vegetables and fruits: Half of your plate:
Look for color and variety; potatoes don't count as vegetables because of their negative impact on blood sugar.

Go for whole grains: One quarter of your plate:
Whole and intact grains—whole wheat, barley, wheat berries, quinoa, oats, brown rice, and foods made with them, such as whole wheat pasta—have a lesser effect on blood sugar and insulin than white bread, white rice, and other refined grains.

Protein: One quarter of your plate
Fish, chicken, beans, and nuts are all quality protein sources. Limit red meat and avoid processed meats such as bacon and sausage.

Healthy plant oils: In moderation
Choose healthy vegetable oils like olive, canola, soy, corn, sunflower, peanut, and others, and avoid partially hydrogenated oils which contains unhealthy trans fats.

Look for water
Skip sugary drinks, limit milk and dairy products to one to two servings per day, and limit juice to a small glass per day.

Stay active
Regular physical activity is important in weight control.

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Hanover Wellness Education News

February, 2014 http://www.hanoverschools.org

Fixed and Growth Mindsets

This month's issue of the HWEN will explore how our mindset influences what and how we learn. Carol Dweck (2006), a Stanford University scholar and psychologist, has stated that there are two major mindsets.

In a fixed mindset, people believe their basic qualities, like their intelligence or talent, are simply fixed traits. Whatever you lack, you will continue to lack; skills, talents, and capabilities are predetermined and finite. They believe that talent alone creates success—without effort. In a fixed mindset, you avoid challenging situations that might lead to failure because success depends upon protecting and promoting your set of fixed qualities and concealing your deficiencies. If you do fail, you focus on rationalizing the failure rather than learning from it and developing your capabilities.

In a growth mindset, people believe that their most basic abilities can be developed through focused practice and hard work. Understanding and skill are the starting point. This view creates a love of learning and a resilience that is essential for great accomplishment. Success comes as a result of effort, learning, and persistence. Those with a growth mindset also have a passion for stretching yourself and sticking to it, even when it's not going well, is the hallmark of the growth mindset. With a growth mindset, you can focus on learning and development rather than failure and actively pursue the types of challenges that will likely lead to both learning and failure. This is the mindset that allows people to thrive during some of the most challenging times in their lives.

In the areas of problem solving, critical thinking, social and emotional skills, understanding of concepts, skill development and so forth we can adopt a fixed or growth mindset.

Those with a fixed mindset want to look smart and avoid challenges, give up easily, see effort as a waste of time, ignore feedback and guidance, feel threatened by others' success

Those with a growth mindset: want to learn and embrace challenges, persevere to solve problems, view effort as the key ingredient to mastery, attempt to adjust performance based on feedback and guidance, and gain inspiration from others' successes.

Dweck (2006) has stated that people are inconsistent in their mindsets relative to different competencies and people can learn to apply either mindset toward their learning and ability in a given domain. It is important for educators to promote a growth mindset.

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Hanover Wellness Education News

March, 2014 http://www.hanoverschools.org

What is the Role of Practice in Developing Expertise?

Last month the HWEN focused on fixed and growth mindsets. This month we will take a look at the role of a growth mindset on developing expertise in learners. Someone who desires to become an expert in a given area must be equipped with a growth mindset in order to persevere during deliberate practice.

Expertise is not an automatic consequence of experience or time spent working in a field. Expertise emerges following extended periods in which the individual engages in deliberate practice to improve the quality of performance. Deliberate practice differs on a variety of dimensions from mere repetition or time spent performing a skill. The learner must be motivated to attend to the practice tasks and exert effort to improve. The teacher or coach must provide effective feedback and create learning activities that engage students in progressively more challenging tasks as skill improves.

Deliberate practice focuses the learner's attention on areas of weakness and directs effort toward the development of new skills and strategies that improve performance. Tasks selected for deliberate practice are determined by the learner's current level of knowledge and skill and must be designed to appropriately challenge the learner. In contrast, during other types of practice, the learner merely engages in activities that depend on skills the learner has already mastered. Deliberate practice creates challenges and demands acquisition of new skill whereas routine practice merely maintains existing levels of performance.

Superb young performers practice intensively, study with devoted teachers, and have been supported enthusiastically by their families throughout their developing years. The amount and quality of practice were key factors in the level of expertise people achieved.

Real expertise must pass three tests. First, it must lead to performance that is consistently superior to that of the expert's peers. Second, real expertise produces successful real world outcomes. Finally, expertise in a given area must be able to be measured in order for it to be improved.

Most individuals who start as active professionals or as beginners in a domain change their behavior and increase their performance for a limited time until they reach an acceptable level. Beyond this point, however, further improvements appear to be unpredictable and the number of years of work and leisure experience in a domain is a poor predictor of attained performance. Continued improvements in achievement are not automatic consequences of more experience and in those domains where performance consistently increases learners seek particular kinds of experiences called deliberate practice (Ericsson, Krampe & Tesch-Römer, 1993). These are activities designed, typically by a teacher, for the sole purpose of effectively improving specific aspects of an individual's performance.

The key difference between expert musicians differing in the level of attained solo performance concerned the amounts of time they had spent in solitary practice during their music development, which totaled around 10,000 hours by age 20 for the best experts, around 5,000 hours for the least accomplished expert musicians and only 2,000 hours for serious amateur pianists. More generally, the accumulated amount of deliberate practice is closely related to the attained level of performance of many types of experts, such as musicians, chess players and athletes.

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Hanover Wellness Education News

April, 2014 http://www.hanoverschools.org

Excessive recreational screen-based media time (e.g., watching video and television, playing video games and recreational computer use) displaces time that could be spent reading (potentially delaying literacy), doing homework, engaging in health enhancing physical activity, and interacting with one's family. Excessive screen-based media time can have adverse physical, behavioral and psychosocial effects on children (Davis, 2008).

Physical effects
Video game use is associated with upper body musculoskeletal disorders (repetitive use injures). Video games and television viewing are independently associated with obesity (Davis, 2008).

Behavioral effects
Screen-based media can influence children in undesirable ways. Aggressive thoughts can be more common while pro-social behavior can be decreased in the short term (Davis, 2008). TV shows are often filled with violent solutions to problems (University of Michigan, 2010). These violent acts often go unpunished and are accompanied by humor. The consequences of human suffering and loss are rarely depicted. Too much time watching television has been associated with higher rates of attention problems in children (Medlineplus, 2011).

Psychosocial effects
Excessive amounts of screen-based media may take the place of social interaction with friends and family, depriving young people of sharing ideas and feelings with others. This can prevent parents and caregivers from learning more about their children (Medlineplus, 2011).

Children can learn information from screen-based media that is inappropriate and incorrect. Violence, sexuality, race and gender stereotypes, drug and alcohol abuse can be common themes of television (AACAP, 2001). Many young people cannot tell the difference between the fantasy presented on video and reality. Some are influenced by thousands of advertisements for alcohol, junk food, and toys they view each day.

More facts about screen-based media.

The likelihood of poorer school performance increases with increasing weekday screen time (Sharif & Sargent, 2006). The American Academy of Pediatrics (2009) recommends that children limit TV watching to one to two hours of quality programming per day.

Screen based media rates (KFF, 2010)
8-18-year-olds spend:

- 4 hours and 29 minutes watching television per day
- 1 hour and 29 minutes using computers per day
- 2-11-year-olds spend 24 minutes using the Internet per day (Nielson, 2010a)
- 25 minutes watching movies per day
- Boys spend 1 hour and 21 minutes per day playing console video game and computer games per day

Children ages 8 to 18 spent an average of 7 hours and 38 minutes a day consuming media for fun, including TV, music, videogames and other content in 2009, according to a 2010 report from the

Kaiser Family Foundation (2010). The report was based on a survey of 2,002 third- through 12th-graders, 702 of whom completed a seven-day media use diary. That was up about an hour and 17 minutes a day from five years earlier. About two-thirds of 8- to 18-year-olds said they had no rules on the amount of time they spent watching TV, playing videogames or using the computer, the Kaiser report found.

The average American watches 35 hours and 34 minutes of TV per week (Nielson, 2010b).

Family Media Use Plan

The American Academy of Pediatrics (2013) has recommended that families create a family media use plan.
This recommendation was inspired by a growing recognition of kids' nearly round-the-clock media consumption, from television to texting and social media.

"Excessive media use is associated with obesity, poor school performance, aggression and lack of sleep," said Marjorie Hogan, co-author of the new policy and a pediatrician.

Families should have a no-device rule during meals and after bedtime, the guidelines say. Parents should also set family rules covering the use of the Internet and social media and cellphones and texting, including, perhaps, which sites can be visited, who can be called and giving parental access to Facebook accounts. The policy also reiterated the AAP's existing recommendations: Kids should limit the amount of screen time for entertainment to less than two hours per day; children younger than 2 shouldn't have any TV or Internet exposure. Also, televisions and Internet-accessible devices should be kept out of kids' bedrooms.

Further, use of mobile devices by young kids has soared. A new report from Common Sense Media, a child-advocacy group based in San Francisco, found that 17% of children 8 and younger use mobile devices daily, up from 8% in 2011.

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Hanover Wellness Education News

May, 2014 http://www.hanoverschools.org

Physical Activity and Cognitive Function

Research has shown that physical activity can affect the physiology of the brain by increasing cerebral capillary growth, blood flow, oxygenation, production of neurotrophins, growth of nerve cells in the hippocampus (center of learning and memory), neurotransmitter levels, development of nerve connections, density of neural network, and brain tissue volume. These changes may be associated with improved cognitive functions including attention, information processing, storage, and retrieval (Trudeau et al. 2008, Rosenbaum et al, 2001, as cited by CDC 2011).

Best (2010) stated that cognitive function, and specifically executive functioning, is enhanced through aerobic physical activity. Most studies examining these topics have analyzed the impact of acute exercise bouts because of cost and participation benefits. In a review of eight studies (two chronic exercise studies and six acute exercise studies), he finds that chronic and acute aerobic exercises affect cognition differently and that each component of cognitive functioning can be impacted uniquely depending on where an individual is developmentally. For instance, in one study of chronic exercise, running programs that became more physiologically demanding over time were found to enhance mental flexibility and divergent thinking associated with executive functioning in children in fourth to eighth grade (Tuckman and Hinkle, 1986; Hinkle et al., 1993; as cited by Best, 2010).

Children in acute exercise studies were found to have improved concentration, response accuracy, reading comprehension, task accuracy and task completion. Acute, moderately-intense exercise, like walking, has a positive effect on inhibition and ability to focus. These data suggest that single bouts of exercise affect specific underlying processes that support cognitive health and may support effective functioning across the lifespan. Similarly, Ellemberg & St. Louis Deschênes (2010) demonstrated that boys (7-10 years old) who participated in 30 minutes of aerobic exercise at moderate intensities showed significant improvement in cognitive function, as demonstrated by simple reaction response time compared to those who watched TV.

Physical activity continues to have positive cognitive benefits over a lifetime. Findings from Ratey and Loehr (2011) show how physical activity positively impacts cognition throughout adulthood. This conclusion suggests that learning the basic skills necessary to engage in physical activity at a young age will be beneficial for future cognitive functioning.

Researchers have also found that the “dose” of physical activity influences the effect on cognitive function. The previously mentioned study by Davis et al. (2007) also demonstrated that higher doses of physical activity (40 minutes) were associated with significantly better cognitive performance than lower doses (20 minutes), as measured by their standard scores for Planning (a Researchers have also found that the “dose” of physical activity influences the effect on cognitive function. The previously mentioned study by Davis et al. (2007) also demonstrated that higher doses of physical activity (40 minutes) was associated with significantly better cognitive

performance than lower doses (20 minutes), as measured by their standard scores for Planning (a test of executive functioning).

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Prepared by the Illinois Public Health Institute 9

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Hanover Wellness Education News

June, 2014 http://www.hanoverschools.org

Physical Activity and Academic Performance

There is a growing body of evidence that physical activity is associated with improved academic performance. Aerobic training in the form of group games requiring more complex motor activities (e.g., running games, modified basketball, soccer) increased activity in the prefrontal cortex and improved performance on tasks requiring executive functioning as well as having a marginal positive effect on mathematics achievement (Davis et al. 2007). Another study demonstrated that a substantial dose of regular, vigorous exercise for overweight children (HR>150 bpm) can positively affect executive functioning scores and math achievement (Davis et al. 2011). In a longitudinal study of K-5 students, girls enrolled in higher amounts of PE (70-300 min/week) were observed to have a small but significant academic benefit in reading and mathematics achievement, compared with girls enrolled in less PE (0-35 min/week); however, there was no significant finding among boys in the study (Carlson, et al. 2008).

Physical activity throughout the school day has also been shown to have positive benefits on academic achievement. A study by Donnelly et al. (2009) demonstrates the effectiveness of Physical Activity Across Classrooms (PAAC) on BMI and academic achievement. PAAC promoted 90 min per week of MVPA delivered by classroom teachers. Results include increased academic achievement, smaller increases in BMI, and increased energy expenditure in the students where ≥75 minutes of PAAC per week was delivered compared to <75 min. Further, students in the PAAC program were shown to spend more time in and out of school participating in MVPA.

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July, 2014 http://www.hanoverschools.org

Lasting Effects of Physical Activity on Cognition

Research suggests that due to the lasting effects of acute aerobic physical activity on improved executive functioning, physical activity should be scheduled in advance of other academic courses such as reading and mathematics. A study by Joyce et al. (2009) showed that the beneficial effects of moderate intensity exercise on cognitive performance can be maintained 30 minutes after exercise and can last for up to 52 minutes after exercise cessation in 13-14 year old students. The findings suggest the 30 minutes of exercise performed at moderate intensity (40% of heart rates close to 130 BMP) will yield such results. Increases in cognitive performance are due to response inhibition improvement; as described above, acute aerobic exercise affects inhibition, which is associated with cognitive processes central to problem solving and goal-oriented behavior.

This evidence lays a strong foundation for the assertion by Kubesch et al. (2009), whose study showed that a single 30-minute PE program led to an improvement in the ability focus, that physical education should be scheduled before academic subjects like mathematics and not at the end of the school day. Gallotta, et al. (2012) found that different types of exertion contributed to students' (ages 8-11) immediate attentional performances. Generally, children showed higher working speed and concentration scores after each of three types of controlled lessons (traditional physical education lesson, corresponding to physical exertion; coordinative physical education lesson, corresponding to a mixed cognitive and physical exertion; and school curricular lesson, corresponding to cognitive exertion). The authors propose that children showed higher attention levels at the end of physical education lessons versus the beginning due to the arousal hypothesis [see Budde, 2008], which relates attention to increases in cerebral blood volume and excited cerebellum and frontal cortex. Raviv (1990) found that levels of concentration and attention were lower later in the school day because of the efforts required by the learning process.

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Hanover Wellness Education News

August, 2014 http://www.hanoverschools.org

Fitness and Cognitive Function

Cardiorespiratory fitness appears to relate to the ability to successfully engage executive control strategies to optimize task performance across the lifespan. Lower levels of cardiorespiratory fitness relate to deficits in the flexible allocation of cognitive control to meet task demands, indicating that lower-fit children have general impairments when performing tasks requiring more cognitive control.

High-fit children had faster reaction time than low-fit children suggesting that fitness was positively associated with neuroelectric indices of attention and working memory, and response speed in children (Hillman et al., 2005). Hillman cites additional studies that link enhanced math and reading abilities to the same brain regions and concludes that similarities exist in the neural networks that underlie both cognitive functioning and academic achievement. In a randomized control study, Kamijo et al (2011) found that a physical activity afterschool program designed to increase cardiorespiratory fitness of preadolescent children lead to improved Sternberg task performance, which tests working memory demands. These results further exemplify that cardiorespiratory fitness is positively associated with improvements in executive control of working memory.

A consistent relationship occurs between cardiorespiratory fitness and cognitive performance. Aberg, et al. (2009) found significantly higher intelligence test scores in male subjects, whose cardiovascular fitness improved between 15 and 18 years old, indicating that changes in cardiovascular fitness are associated with improved cognitive performance in adolescence, even though causal relationship could not be established.

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Hanover Wellness Education News

September, 2014 http://www.hanoverschools.org

Fitness and Academic Performance

Research on the association between fitness and academic achievement conducted in China, Illinois, Massachusetts, California, and Texas shows a relationship between increased levels of physical fitness, as measured by fitness tests and academic achievement (Chih & Chen, 2011; Castelli et al., 2007; Chomitz et al., 2009; London & Castrechini, 2011; Roberts et al., 2010; Van Dusen et al., 2011). Van Dusen, et al. (2011) found that all FITNESSGRAM® variables except body mass index (BMI) were associated with academic performance; measures of cardiovascular fitness were found to have the highest connection to cognition. Each additional unit of cardiovascular fitness across quintiles was associated with improved performance on a standardized test, specifically the Texas Assessment of Knowledge and Skills. Also using fitness, preliminary results presented at the American College of Sport Medicine conference by Bass et al. (2010) suggest that students in the healthy fitness zone for cardiorespiratory fitness were six times more likely to meet or exceed the Illinois Standardized Achievement Test (ISAT) reading test requirements and over two and a half times more like to meet or exceed ISAT math test requirements than students who were not in the healthy fitness zone. Additionally, Srikanth et al. (2010) found that when comparing the effect of social support, self-esteem and cardiorespiratory fitness on middle school students' reading and math tests, cardiorespiratory fitness was the only factor correlated with higher scores.

Grissom's research (2005) shows that a relationship exists between fitness and academic achievement, in that as one improved, so did the other. Results from a study by Cottrell et al. (2007) show that there is a significant relationship between children's cardiorespiratory risks such as fitness index and blood pressure, as well as weight, and their reading/language, arts, mathematics, and science test scores. These results suggest that there is value in implementing surveillance programs to evaluate weight risks, fitness, risk for diabetes, and/or high blood pressure

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Hanover Wellness Education News

October, 2014 http://www.hanoverschools.org

Providing Rewards for Achieving Rewards

Giving people rewards seems for completing tasks that we desire. However, the results may not provide an overall long term benefit for those receiving the reward (Gardiner, 2014).

Edward Deci (1995) set up an experiment with college students that required them to work with a puzzle. One group was given cash based on the number of solutions they could find. Others were offered no rewards. At the end of the time given to work on the puzzle the experimenter left the room. The students could continue working on the puzzle or stop. Students who were receiving money had a greater tendency to stop doing the puzzle; more students who were receiving no reward continued working on the puzzle. The researchers concluded that rewards decrease intrinsic motivation.

Some believe that we can easily and quickly manipulate behavior with rewards (Kohn, 1999; Skinner, 1963). Dweck (2006) believes that students frequently provided with rewards may adopt a *fixed mindset*. These students generally choose simple tasks. Students who regularly go without rewards may adopt a grow*th mindset*, and choose challenging tasks. This group enjoys a challenge and sees mistakes as chances to learn.

The receiver of a reward can perceive the reward as controlling (Deci, 1995). If the receiver feels that the reward is meant to control behavior, which is generally the case, the receiver loses autonomy and intrinsic motivation is decreased. The perception of the receiver — not the intent of the giver — determines the outcome of these rewards.

When the focus of any activity becomes gaining a reward, not only is intrinsic motivation reduce students learn that it's often easier to find shortcuts to reach the reward rather than taking the intended route even if it means taking the low road (cheating or engaging in unethical practices) (Pink, 2009).

Kohn (1999) suggested that we should not praise people. Instead, we should focus on their effort. For example, instead of saying “You are brilliant,” say “I think you worked really hard on this task.” He also noted that we should make our feedback as specific as possible. Focus on the specific parts of the assignment that the student performed well. We can promote student intrinsic motivation and enable autonomy by providing meaningful choices and setting up situations where they learners can demonstrate their competence and skills.

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Hanover Wellness Education News

November, 2014 http://www.hanoverschools.org

Healthy Beverages

This month's issue contains daily drinking recommendations from the Harvard School of Public Health (2014).

Water is the best beverage choice. Coffee and tea, without added sweeteners, are healthy choices, too.
Some beverages should be limited or consumed in moderation: diet drinks, fruit juice and milk.
Alcohol in moderation can be healthy for some people, but not everyone.
Avoid sugary drinks like soda, sports beverages, and energy drinks.

Water
There are many options for what to drink, but for most people who have access to safe drinking water, water is the best choice: It's calorie-free, and it's as easy to find as the nearest tap. Water provides everything the body needs—pure H_2O—to restore fluids lost through metabolism, breathing, sweating, and the removal of waste. It's the perfect beverage for quenching thirst and re-hydrating your system.

How much water do I need?
There is no one estimate for how much water the average American needs each day. Instead, the Institute of Medicine has set an adequate intake of 125 ounces (about 15 cups) for men and 91 ounces (about 11 cups) for women. This is not a daily target, but a general guideline. In most people, about 80% of this water volume comes from beverages; the rest comes from food.

Beverages to limit
Sugary drinks contain a lot of calories and virtually no other nutrients. Consuming high-sugar drinks can lead to weight gain and increased risk of type 2 diabetes, cardiovascular disease and gout.

The average can of **sugar-sweetened soda** or **fruit punch** provides about 150 calories. If you were to drink just one can of a sugar-sweetened soft drink every day, and not cut back on calories elsewhere, you could gain up to 5 pounds in a year. Cutting back on sugary drinks may help control weight and may lower risk of type 2 diabetes.

Sports beverages are designed to give athletes carbs, electrolytes, and fluid during high-intensity workouts that last an hour or more. For others they are another source of sugar and calories.

Energy drinks have as much sugar as soft drinks, caffeine to raise your blood pressure, and additives whose long-term health effects are unknown. For these reasons it's best to avoid energy drinks.

The content of this newsletter is not meant to provide anyone with personal medical advice; which you should obtain from your health care provider.

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Hanover Wellness Education News

December, 2014 http://www.hanoverschools.org

Salt and Sodium

This month's issue contains salt and sodium recommendations from the Harvard School of Public Health (2014).

Salt (sodium chloride) is about 40 percent sodium and 60 percent chloride. It adds flavor to food and is used as a preservative, binder, and stabilizer. The human body needs a very small amount of sodium – the primary element we get from salt – to conduct nerve impulses, contract and relax muscles, and maintain the proper balance of water and minerals. However, too much sodium in the diet can lead to high blood pressure, heart disease, and stroke. Most Americans consume at least 1.5 teaspoons of salt per day, which contains far more sodium than our bodies need.

The U.S. government recommends limiting daily sodium intake to one 2,300 milligrams (one teaspoon). Yet, nearly 70 percent of American adults are at risk of developing health problems associated with salt consumption, and the American Heart Association recommends that the following at-risk individuals should limit their daily sodium intake to 1,500 milligrams (2/3 of a teaspoon):

People over age 50
People who have high or slightly elevated blood pressure
People who have diabetes
African Americans

Given that the majority of US adults are at risk of developing health problems related to salt consumption, nutrition experts at Harvard School of Public Health, the American Heart Association, and the Center for Science in the Public Interest have called for the U.S. government to lower the upper limit of daily recommended sodium intake from 2,300 milligrams to 1,500 milligrams per day (2/3 teaspoon of salt).

The content of this newsletter is not meant to provide anyone with personal medical advice; which you should obtain from your health care provider.

Reference

Harvard School of Public Health. (2012). Salt and sodium. Retrieved September 2, 2014, from http://www.hsph.harvard.edu/nutritionsource/salt-and-sodium/