Hanover Wellness Education News

January, 2015 http://www.hanoverschools.org

Healthy Fats

This month's issue contains recommendations on fats consumption from the Harvard School of Public Health (2014).

Recommendation for Healthy fats:

Use liquid vegetable oils for cooking and baking. Olive, canola, and other plant-based oils are high in heart-healthy unsaturated fats.

Avoid trans fatty acids (trans fats). Monitor ingredient lists for trans fats and partially hydrogenated oils.

Eat at least one source of omega-3 fats each day. Fatty fish (such as salmon and tuna), walnuts, and canola oil all offer these essential fats that our bodies cannot produce

Limit red meat and dairy foods. Replace red meat with beans, nuts, poultry, and fish. Reduce portion sizes of dairy products.

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

Phares, E. H. (2014). *How to choose healthy fats*. Retrieved September 2, 2014, from http://www.hsph.harvard.edu/nutritionsource/nutrition-news/

Hanover Wellness Education News

February, 2015 http://www.hanoverschools.org

Healthy Eating

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

The healthy eating plate from the Harvard School of Public Health (2014) was designed to address issues in the U.S. Department of Agriculture (USDA)'s dietary guidelines. Visit the URL below to see Harvard's healthy plate.

http://www.hsph.harvard.edu/wp-content/uploads/sites/30/2013/04/HEPApr2013.jpg

Here are the major recommendations from the Healthy Eating Plate:

Make most of your meal vegetables and fruits – ½ of your plate.
Go for color and variety; potatoes don't count as vegetables on the Healthy Eating Plate because of their negative impact on blood sugar.

Try to include whole grains – ¼ of your plate.
Whole grains—whole wheat, barley, wheat berries, quinoa, oats, brown rice, and foods made with them have a milder effect on blood sugar and insulin than white bread, white rice, and other refined grains.

Protein – ¼ of your plate.
Fish, chicken, beans, and nuts are all healthy, protein source; Limit red meat, and avoid processed meats such as bacon and sausage.

Healthy plant oils – in moderation.
Choose vegetable oils like olive, canola, soy, corn, sunflower, peanut, and others. Avoid partially hydrogenated oils, which contain unhealthy trans fatty acids.

Drink water, coffee, or tea.
Avoid sugary drinks, limit milk and dairy products to one to two servings per day, and limit juice to a small glass per day.

Participate in regular physical activity.
This is important for achieving and maintaining a healthy weight.

The form of carbohydrate in the diet is more important than the *amount of carbohydrate* in the diet. Some sources of carbohydrate—vegetables, fruits, whole grains, and beans—are healthier than others.

The Healthy Eating Plate us to stay away from sugary drinks, a large source of calories—usually with little nutritional value.

The Healthy Eating Plate encourages us to include healthy oils. It does not set a maximum on the percentage of calories people should get each day from healthy sources of fat.

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. (2014). *Healthy eating plate & healthy eating pyramid*. Retrieved September 2, 2014, from http://www.hsph.harvard.edu/nutritionsource/healthy-eating-plate/

Hanover Wellness Education News

March, 2015 http://www.hanoverschools.org

Considering Motivation

"The most important attitude that can be formed is that of
the desire to go on learning."

John Dewey (1938, p. 48)

Kohn (2001) stated that many people (e.g., educators, employers, parents) motivate others by providing rewards for (temporary) compliance (Skinner, 1953). In educational settings this hidden curriculum uses choices of favorite activities, prizes, grades, food, and other incentives to teach and reward compliant behavior. The ideas behind this practice are seldom analyzed. We only question what the "doer" will receive and the process of promising and delivering the reward.

Kohn (2001) noted that our society is deeply committed to this way of thinking and behaving. Kohn and others (Deci & Flaste, 1996; Deci & Ryan, 2002; Dweck, 2000) maintain that rewards lead to poor quality work and an eventual loss of interest in performing at high levels on a given task or learning experience. Further, they believe that when rewards go away we lose interest in the rewarded activity, perform that activity in minimally acceptable ways, and return to behaving the way we did before the reward program started. The rewards and punishments also undermine intrinsic motivation and contact with our inner selves (Deci & Flaste, 1996).

Deci and Flaste (1996) stated that the hidden message behind behaviorism is that people are passive and will respond only when the environment tempts them with the opportunity to earn rewards or avoid punishments.

When students are driven by interest (e.g., inquiry-based learning), the desire to meet challenges, and the need to become competent they will be motivated to sustain effort, use creativity, achieve goals, and learn (Deci & Flaste, 1996). Such a motivated student can have a deeper learning experience, gain greater conceptual understanding, develop creativity, and improve problem solving ability (White, 1959; Deci & Ryan, 2002). Here the learning and achievement that students experience is their reward.

References

Deci, E. L. & Flaste, R. (1996). *Why we do what we do: Understanding self motivation*. New York: Penguin Books.

Deci, E.L. & Ryan, R.M. (2002). *Handbook of self-determination research*. Rochester, NY: University of Rochester Press.

Dewey, J. (1938). *Experience and education*. New York: Touchstone.

Dweck, C.S. (2000). *Self theories: Their role in motivation, personality and development* Philadelphia, PA: Psychology Press.

Kohn, A. (2001). *Punished by Rewards: the trouble with gold stars, incentive plans, A's, praise and other bribes*. (2nd ed.). New York: Replica Books.

Skinner, B.F. (1953). *Science and Human Behavior*. New York: Macmillan.

White, R. (1959). *Motivation reconsidered: The concept of competence. Psychological Review, 66*(5), 297-333.

Hanover Wellness Education News

April, 2015

Physical Activity, Development and Brain Development

Physical activity may influence academic performance. Research on brain development indicates that cognitive development occurs with motor ability. Studies have shown a relationship between increased physical fitness levels and academic achievement as well as fitness levels and measures of cognitive skills and attitudes. Other studies have shown that improved motor skill levels are related to academic achievement. Research has shown that physical movement can affect the brain's physiology 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
- Brain tissue volume

These changes may be associated with:

- Improved attention
- Improved information processing, storage, and retrieval
- Enhanced coping
- Enhanced positive affect
- Reduced sensations of cravings and pain

Reference

United States Department of Health and Human Services. (2010). *The*

association between school-based physical activity, including physical education and academic performance. Washington, DC: Author. Retrieved January 4, 2015 from http://www.cdc.gov/healthyyouth/health_and_academics/pdf/pape_paper.pdf

Hanover Wellness Education News

May, 2015 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).

References

Aberg, M.A.I., Pedersen, N.L., Toren, K., Svartengren, M., Backstrandg, B., Johnsson, T… Georg Kuhn, H. (2009). Cardiovascular fitness is associated with cognition in young adulthood. *Proceedings of the National Academy of Science of the USA, 106*(49), 20906–20911. doi:10.1073/pnas.0905307106

Bass, R. Brown, D.D., Laurson, K. (2010). Relationships between Physical Fitness and Academic Achievement in Middle School Students. *Medicine and Science in Sports and Exercise. 42*(5): (abstract #1665).

Best, J.R. (2010). Effects of physical activity on children's executive function: Contributions of experimental research on aerobic exercise. *Developmental Review, 30*(4), 331-351.

Budde, H., Voelcker-Rehage, C., Pietrabyk-Kendziorra, S., Ribeiro, P., & Tidow, G. (2008). Acute coordinative exercise improves attentional performance in adolescents. *Neuroscience Letters, 441*(2), 219-223.

Carlson, S.A., Fulton, J.E., Lee, S.M., Maynard, L.M., Brown, D.R., Kohl III, H.R., Dietz, W.H. (2008). Physical education and academic achievement in elementary school: Data from the early childhood longitudinal study. *American Journal of Public Health, 98*(4), 721-727. doi:10.2105/AJPH.2007.117176

Castelli, D.M., Hillman, C.H., Buck, S.E., & Erwin, H.E. (2007). Physical fitness and academic achievement in 3rd and 5th grade students. *Journal of Sport & Exercise Psychology, 29*(2), 239-252.

Centers for Disease Control and Prevention [CDC]. (2010). The association between school based physical activity, including physical education, and academic performance. Atlanta, GA: U.S. Department of Health and Human Services.

Centers for Disease Control and Prevention [CDC]. (2011, Dec 1). How much physical activity do adults need? Retrieved from http://www.cdc.gov/physicalactivity/everyone/guidelines/adults.html#Aerobic

Chaddock, L., Erickson, K.I., Prakash, R.S., Vabpatter, M., Voss, M.W., Pontifex, M.B.…Kramer, A.F. (2010a). Basal ganglia volume is associated with aerobic fitness in preadolescent children. *Developmental Neuroscience*. *32*(3), 249-256.

Chaddock, L., Erickson, K.I., Prakash, R.S.,Kim, J.S., Voss, M.W., Vanpattar, M.…Kramer, A.F. (2010b). A neuroimaging investigation of the association between aerobic fitness, Illinois Enhance PE Task Force Research Summary: Exploring the Link Between Physical Activity, Fitness, and Cognitive Function

Prepared by the Illinois Public Health Institute 9

hippocampal volume, and memory performance in preadolescent children. *Brain Research*. 1358: 172–183. doi: 10.1016/j.brainres.2010.08.049
Chih, C.H., Chen, J.F. (2011). The relationship between physical education performance, fitness tests, and academic achievement in elementary school. *International Journal of Sport & Society, 2*(1), 65-75.
Chomitz, V.R., Slining, M.M., McGowan, R.J., Mitchell, S.E., Dawson, G.F., & Hacker, K.A. (2009). Is there a relationship between physical fitness and academic achievement? Positive results from public school children in the northeastern United States. *Journal of School Health, 79*(1), 30-37. doi:10.1111/j.1746-1561.2008.00371.x
Cottrell, L.A., Northrup, K., & Wittberg, R. (2007). The extended relationship between child cardiovascular risks and academic performance measures. *Obesity (Silver Spring), 15*(12), 3170 – 3177. doi: 10.1038/oby.2007.377
Davis, C.L., Tomporowski, P.D., Boyle, C.A., Waller, J.L., Miller, P.H., Naglieri, J.A., Gregoski, M. (2007). Effects of aerobic exercise on overweight children's cognitive functioning: A randomized controlled trial. *Research Quarterly for Exercise and Sport 78*(5): 510-19.
Davis, C. L., Tomporowski, P. D., McDowell, J. E., Austin, B. P., Miller, P. H., Yanasak, N. E., Naglieri, J. A. (2011). Exercise improves executive function and achievement and alters brain activation in overweight children: a randomized, controlled trial. *Health Psychology, 30*(1), 91-98. doi: 10.1037/a0021766
Donnelly, J. E., Greene, J. L., Gibson, C. A., Smith, B. K., Washburn, R. A., Sullivan, D. K. … Williams, S. L. (2009). Physical activity across the curriculum (PAAC): A randomized controlled trial to promote physical activity and diminish overweight and obesity in elementary children. *Preventative Medicine, 49*(4), 336-341. doi:10.1016/j.ypmed.2009.07.022
Ellemberg, D., & St. Louis-Deschênes, M. (2010). The effect of acute physical activity on cognitive function during development. *Psychology of Sport and Exercise, 11*(2), 122–126. doi: 10.1016/j.psychsport.2009.09.006
Gallotta, M.C., Guidetti, L., Franciosi, E., Emerenziani, G.P., Bonavolontà, V., Baldari, C. (2012). Effects of varying type of exertion on children's attention capacity. *Medicine and Science in Sport and Exercise. 44*(3): 550-555. doi: 10.1249/MSS.0b013e3182305552
Grissom, J.B. (2005). Physical fitness and academic achievement. *Journal of Exercise Physiology Online,* 8(1), 11-25. Illinois Enhance PE Task Force Research Summary: Exploring the Link Between Physical Activity, Fitness, and Cognitive Function
Prepared by the Illinois Public Health Institute 10

Hillman, C.H., Snook, E.M., Jerome, G.J. (2003). Acute cardiovascular exercise and executive control function. *International Journal of Psychophysiology, 48*(3), 307–314.
Hillman, C.H., Castelli, D.M., Buck, S.M. (2005) Aerobic fitness and neurocognitive function in healthy preadolescent children. *Medicine and Science in Sports and Exercise 37*(11), 1967–1974.
Hillman, C.H., Erickson, K.I., Kramer, A.F. (2008). Be smart, exercise your heart: exercise effects on brain and cognition. *Nature Reviews Neuroscience 9*(1), 58-65. doi: 10.1038/nrn2298
Hillman, C.H., Pontifex, M.B., Raine, L.B., Castelli, D.M., Hall, E.E., Kramer, A.F. (2009). The effect of acute treadmill walking on cognitive control and academic achievement in preadolescent children. *Neuroscience. 159*(3):1044-54. doi: 10.1016/j.neuroscience.2009.01.057
Joyce, J., Graydon, J., McMorris, T., Davranche, K. (2009). The time course effect of moderate intensity exercise on response execution and response inhibition. *Brain and Cognition. 71*(1)14-19. doi: 10.1016/j.bandc.2009.03.004
Kamijo, K., Pontifex, M.B., O'Leary, K.C., Scudder, M.R. Chien-Ting, W., Castelli, D.M., Hillman, C.H. (2011). The effects of an afterschool physical activity program on working memory in preadolescent children. *Developmental Science, 14*(5):1046-1058. doi: 10.1111/j.1467-7687.2011.01054.x
Kubesch, S., Walk, L., Spritzer, M., Kammer, T., Lainburg, A., Heim, R. (2009). A 30- minute physical education program proves students' executive attention. *Mind, Brain, and Education. 3*(4) 235-242.
London, R.A., & Castrechini, S. (2011). A longitudinal examination of the link between youth physical fitness and academic achievement. *Journal of School Health, 81*(7), 400-408. doi: 10.1111/j.1746-1561.2011.00608.x
Pontifex, M.B., Saliba, B.J., Raine, L.B., Picchietti, D.L., Hillman, C.H. (in press). Exercise improves behavioral, neurocognitive, and scholastic performance in children with attention-deficit/hyperactivity disorder. *The Journal of Pediatrics.*
Pontifex, M.B., Raine, L.B., Johnson, C.R., Chaddock, L., Voss, M.W., Cohen, N.J….Hillman, C.H. (2011). Cardiorespiratory Fitness and the Flexible Modulation of Cognitive Control in Preadolescent Children. *Journal of Cognitive Neuroscience, 23*(6):1332–1345. doi: 10.1162/jocn.2010.21528 Illinois Enhance PE Task Force Research Summary: Exploring the Link Between Physical Activity, Fitness, and Cognitive Function

Raviv, S., Low, M. (1990). Influence of physical activity on concentration among junior high-school students. *Perceptual and Motor Skills, 70*(1), 67–74.
Ratey, J.J., Loehr, J.E. (2011). The positive impact of physical activity on cognition during adulthood: a review of underlying mechanisms, evidence and recommendations. *Reviews in the Neurosciences, 22*(2), 171-185. doi: 10.1515/RNS.2011.017
Roberts, C.K., Freed, B., McCarthy, W.J. (2010). Low aerobic fitness and obesity are associated with lower standardized test scores in children. *The Journal of Pediatrics, 156*(5), 711-718. doi: 10.1016/j.jpeds.2009.11.039
Rosenbaum, D.A., Carlson, R.A., Gilmore, R.O. (2001) Acquisition of intellectual and perceptual-motor skills. *Annual Review of Psychology 52*(1), 453–470. doi: 10.1146/annurev.psych.52.1.453
Srikanth, S., Petrie, T., Greenleaf, C., & Martin, S. (August, 2012). *Physical fitness and academic performance: A longitudinal investigation*. Paper presented at the American Psychological Association annual conference, Orlando, FL.
Trudeau, F., Shephard, R.J. (2008) Physical education, school physical activity, school sports and academic performance. *International Journal of Behavioral Nutrition and Physical Activity, 5*(10). doi: 10.1186/1479-5868-5-10
Van Dusen, D.P., Kelder, S.H., Kohl, H.W. III, Ranjit, N., Perry, C.L. (2011). Associations of physical fitness and academic performance among school children. *The Journal of School Health, 81*(12):733-740. doi: 10.1111/j.1746-1561.2011.00652.x
Willis, J. (2007). The neuroscience of joyful education. The neuroscience of joyful education. *Educational Leadership: Engaging the Whole Child (online only).* Retrieved from http://www.ascd.org/publications/educational-leadership/summer07/vol64/num09/The-Neuroscience-of-Joyful-Education.aspx

Hanover Wellness Education News

June, 2015 http://www.hanoverschools.org

What is Antibiotic Resistance?

The information in this newsletter comes from the Centers for Disease control and prevention (2015). Antibiotic resistance is a problem, both in the United States and across the world. The main factors behind antibiotic resistance are the overuse and misuse of antibiotics. Learn more below about when antibiotics are needed for common infections, and the potential dangers of using antibiotics.

Colds, influenza, most sore throats, bronchitis, and many sinus and ear infections are caused by viruses. Antibiotics do not help fight viruses. For the majority of common respiratory infections, antibiotics are not helpful. Antibiotics are used for illnesses caused by bacteria such as whooping cough, strep throat, and urinary tract infections.

Antibiotics cure bacterial infections, not viral infections such as

- Colds or flu
- Most coughs and bronchitis
- Most sore throats
- Runny noses

Taking antibiotics for viral infections will not

- Cure the infection
- Keep other individuals from catching the illness
- Help you feel better

Taking antibiotics when you have a virus may do more harm than good:

- Taking antibiotics increases your risk of getting an antibiotic-resistant infection later.
- Antibiotics kill the healthy bacteria in the gut, allowing more harmful bacteria to grow in its place.
- Antibiotics cause 1 out of 5 emergency department visits for adverse drug events.
  - Antibiotics are the most common cause of emergency department visits for adverse drug events in children under 18 years of age.

Reference

Centers for Disease Control and Prevention. (2015). *Antibiotics: What everyone should know*. Retrieved from http://www.cdc.gov/getsmart/community/about/should-know.html

Hanover Wellness Education News

July, 2015 http://www.hanoverschools.org

What is Sucralose?

Sucralose is made by a multi-step process that starts with ordinary table sugar (sucrose) and replaces three hydrogen-oxygen groups on the sugar molecule with three chlorine atoms. This results in a stable sweetener that tastes like sugar, but is calorie-free (Calorie Control Council, 2014).

Sucralose (the key ingredient in Splenda) is made by reacting sugar with chlorine (CSPINET, 2014). It is about 600 times sweeter than sugar and widely used, often together with aspartame or acesulfame potassium, in foods and beverages.

References

The Calorie Control Council. (2014). *All about sucralose*. Retrieved from http://sucralose.org/sucralose-facts/

The Center for Science in the Public Interest. (2014). *It's sweet . . . but, is it safe*? Retrieved from http://cspinet.org/new/201312311.html

Hanover Wellness Education News

August, 2015 http://www.hanoverschools.org

What is Acesulfame Potassium?

Acesulfame Potassium (also known as Acesulfame K or Ace-K) is a calorie-free sweetener used in more than 5,000 food, beverage and pharmaceutical products in over 100 countries (Calorie Control Council, 2014).

Ace K is about 200 times sweeter than sugar and is often used with aspartame in cola beverages. It is also found in foods (CSPINET, 2014). The safety of acesulfame potassium has been questioned (National Institutes of Health, 2006).

References

Calorie Control Council (2014). *The facts about acesulfame potassium*. Retrieved from http://www.acesulfamek.org/

The Center for Science in the Public Interest. (2014). *It's sweet . . . but, is it safe*? Retrieved from http://cspinet.org/new/201312311.html

National Institutes of Health (2006). *Testing needed for acesulfame potassium, an artificial sweetener*. Retrieved from http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1570055/

Hanover Wellness Education News

September, 2015 http://www.hanoverschools.org

What is Stevia?

Studies revealed that Stevia has been used throughout the world since ancient times for various purposes; for example, as a sweetener and a medicine (National Institutes of Health, 2010). Stevia leaf extract is a natural and potent sweetener (about 200 times sweeter than sugar). It is extracted from the South American stevia plant (also grown in the American west and in Southeast Asia). The purified sweetening agents are called rebiana, rebaudioside, reb A or D, or simply stevia leaf extract (CSPINET, 2014).

References

The Center for Science in the Public Interest. (2014). *It's sweet . . . but, is it safe*? Retrieved from http://cspinet.org/new/201312311.html

National institutes of health (2010). *Stevia: A bio-sweetener.* Retrieved from http://www.ncbi.nlm.nih.gov/pubmed/19961353

Hanover Wellness Education News

October, 2015 http://www.hanoverschools.org

What is Aspartame?

Aspartame is unique among low-calorie sweeteners in that it is completely broken down by the body into its components – the amino acids, aspartic acid and phenylalanine, and a small amount of methanol (Calorie Control Council, 2015). These components are found in much greater amounts in common foods, such as meat, milk, fruits, and vegetables, and are used by the body in the same ways whether they come from aspartame or common foods.

Aspartame is a widely used artificial sweetener that is about 200 times sweeter than sugar and sometimes labeled with the brand name NutraSweet (CSPINET, 2014). Aspartame is the sole sweetener in many cola beverages.

References

Calorie Control Council (2015). *Aspartame*. Retrieved from http://www.aspartame.org/

The Center for Science in the Public Interest. (2014). *It's sweet . . . but, is it safe?* Retrieved from http://cspinet.org/new/201312311.html

Hanover Wellness Education News

November, 2015 http://www.hanoverschools.org

What is interval training?

Interval training is an aerobic or anaerobic workout that contains three portions:

- A workout interval (a distance
- A target time for the interval
- A predetermined recovery period before the next exercise period (Plowman, & Smith, 2008, p. 156)

For example, if your exercise is walking — if you're in good shape, you could incorporate short bursts of jogging into your regular brisk walks. If you're less fit, you might alternate leisurely walking with periods of faster walking. If you're walking outdoors, you could walk faster between certain mailboxes, trees or other landmarks.

Interval training isn't appropriate for everyone. If you have a chronic health condition or haven't been exercising regularly, consult your doctor before trying any type of interval training. If you jump into a strenuous workout before your body is ready, it could result in injury.

Reference

Plowman, S. A., & Smith, D. L. (2008). *Exercise physiology for health, fitness, and performance (2nd ed)*. Philadelphia, PA: Wolters Kluwer Health/Lippincott Williams & Wilkins.

Hanover Wellness Education News

December, 2015 http://www.hanoverschools.org

What is Ibuprofen?

Ibuprofen is an NSAID (non-steroidal anti-inflammatory drug) that is commonly used for the relief of symptoms such as fever, arthritis, and primary dysmenorrhea (menstrual pains), and as an analgesic (a medication given to reduce pain without resulting in loss of consciousness). Ibuprofen also has an antiplatelet effect (protects from blood clots) (Medical News Today, 2015).

Non-steroidal anti-inflammatory drugs, or NSAIDs, also known as non-steroidal anti-inflammatory agents/analgesics (NSAIAs) or non-steroidal anti-inflammatory medicines (NSAIMs), are medications with analgesic, antipyretic (something that reduces a fever), and in higher doses anti-inflammatory effects.

Reference

Medical News Today. (2015). *Ibuprofen*. Retrieved from http://www.medicalnewstoday.com/articles/161071.php