Raising healthy kids: Strategies for the whole community

By Dennis F. Embry, Ph.D.

A Simple Gift[™] is a small, proven strategy to influence behavior.¹² For more information, please check out <u>www.paxis.org</u>, <u>www.GiveSimpleGifts.com</u> (launching soon!) or see www.youtube.com/drdennisembry. Here are five Simple Gifts you can give to your child. These Simple Gifts can help protect your child's and your child's friends' futures. Please give these Simple Gifts.

1. Give the Simple Gift of a Future Goal Map...





Your grandmother probably uttered something like, "People fail without a vision." She was right. Young people who have a clearer motivational map of their future are more likely to live a better life.³⁻⁸ And, if the map is done with gentleness and clarity about helping your child find their authentic passions, the future map can reduce your child's use of alcohol, drugs and tobacco. Here are the basic steps for doing a Future Goal Map:

Future Goal Maps need to be done every now and then with gentleness and love, not with lecturing or force.

- 1) <u>Ask</u> your child about something they would really, really like to do months or years from now. Focus on a heartfelt goal of the child, not just something important to you. Write that goal down on the map.
- 2) Probe what the heartfelt reason is that the child really wants to achieve the goal. The first answers are often superficial such as "make money." So ask something like, "so why is making money important to you?" You might then get something deeper like, "I'll have more friends or have respect." Those answers are more authentic.
- 3) <u>Inquire</u> about what supports the child might have to get to the goal. Again, the answers will be initially superficial. Give the child choices of other support options such as meeting a couple of people who are doing what the child is interested in or visiting a college teacher who helps people learn about it.
- 4) <u>Boost</u> the child's ability to pick an immediate action—such as making a telephone call—and then move through specific actions to be taken later that would move the child forward. Be sure to praise the child as he or she does those steps.
- 5) <u>Clarify</u> what problems or barriers the child might encounter. Every goal has barriers—some external and some internal to

the person. The child will quickly identify external barriers, and those need to be honored. The child will be slower to identify internal barriers to the goal. You may gently address those harder issues with such questions as:

- a. "How is watching so much TV helping you with your goal of wanting to get all A's?"
- b. "How is hanging out with the kids who are drinking and using drugs helping you with your goal of getting into the Marine Corp?"
- c. "How does cursing at the security staff help you stay in school?"

It is important NOT to shame or guilt the child here but to ask gentle yet pointed questions. It is always useful to consider asking how alcohol, drugs or tobacco use fit into the child's goals.

6) <u>Coach</u> your child to choose ways to resolve the barriers with specific actions and real choices. Ask who or what might resolve that barrier or problem. If the child has no idea, ask if the child would like to have some ideas presented.

Find out more about this Simple Gift at the upcoming website, <u>www.GiveSimpleGifts.com</u>. Search for "Goal Map."

2. Give the Simple Gift of Recognition & Rewards for Doing the Right Thing...



The more you notice your child doing the right thing, the more right things they will do. And your child—like all children—craves being noticed. Without being noticed for the right things, children tend to seek out being noticed for doing the wrong things—often in the wrong places, with the wrong people, at the wrong times. It is the *being noticed* that counts, and you have complete control over what you notice in your child—for the good or the bad.

Teens need more than praise because of their brain wiring. So, every so often-every 3 to seven days-offer a Mystery Motivator reward to your child for doing the right thing immediately after you have recognized them for it. The Mystery Motivator is a proven way to strengthen the behavior of children, youth and adults alike.9-19 Your teen gets to draw from a jar or box containing slips of paper. The paper slips name Mystery Motivators, which can range from hugs, praise, silly things, candy, an extra hour up at night, a pass on chores, a friend over, a special meal, some money, movie passes, or special fun.



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When your child draws their Mystery Motivator, praise them like this or similarly: "When you do good things, you never know exactly when, where, or how it will pay off—but it will. And, the more good you do, the more good you get back. It's a Law of the Universe. And the reverse is true. When you do bad, you never know when, where or how it will come back to hurt vou—but it will. And, and the more bad you do, the more bad you get back. Thank you for creating good in your life."

Find out more about this Simple Gift at the upcoming website, www.GiveSimpleGifts.com. Search for "Mystery Motivator."

3. Give the Simple Gift of Good Sleep to Your Child...



Our children today sleep a lot less than children just 10-20 years ago. The lack of sleep, even as a young child, significantly predicts getting drunk, stoned, or in trouble with the law, being violent, and doing poorly in school.²⁰⁻²⁴ The reason is not more homework or family stress. The reason is simple: Children's bedrooms today are like electronic super-stores-often with a TV, a computer, electronic games, and now cell phones.^{23 25-32} These electronic things are a lot more exciting and sleep depriving than reading a book under the covers with a flashlight.³³ When parents significantly reduce use of these things—especially in children's bedrooms—children and teens are healthier, less irritable, do better in school and are less likely to get into all manner of trouble.^{34 35} Here are some strategies to slim your child's media diet if you are unsure what to do:36

- Remove the TV from your child's bedroom. There are no studies that show a TV in a child's bedroom is beneficial-only studies that show varying degrees of harm in some form.
- Cellphones, gameboys, etc. have a *curfew*. Your child turns in their cell phone to you before bedtime. That way your child won't be texting and calling late at night. Remember to turn off the machine or take the battery out



so that the beeping doesn't disturb your rest.

Use Time-Lock software or devices on bedroom or child accessible computers. Computers have very engaging, addictive activities that will keep your child up too late or get them involved in things that can lead to problems such as depression, aggression or self-destructive acts. The timelock devices or software—some of which are free—can help make sure your child is not staying awake playing games, using instant messaging, glued to social networks (or worse) at night or other times.

Find out more about this Simple Gift at the upcoming website, www.GiveSimpleGifts.com, search for "Good Sleep."

4. Give the Simple Gift of Brain Food to Your Child...

Yes, your child needs brain food to work properly. Children in America are increasingly having less and less good brain food compared to wealthy countries like ours in Europe and Asia.37 Here are two essential brain foods for your child.

- Good Fats. Remember how parents and grandparents used to tell children to take cod-liver oil? Yes, it tasted yucky, but they were on to something important.³⁸⁻⁴¹ The human brain is composed of 60% fat, and one-half of that is supposed to be omega-3—an essential brain "food" essential for human brain development.^{42 43} Today's diet—especially for teens has too little omega-3 (fish oil) and too much omega-6 (found in cotton seed oil, soybean oil, and cottonseed oil and most processed foods).^{37 44-46} This imbalance hurts the healthy brain development and functioning of many children. A mountain of research suggests that by simply increasing your child's weekly diet to include 2 servings of oily fish (salmon, trout, etc.) or by giving your child 2 full grams per day of omega-3 supplement, your child is less likely to have mental illnesses, behavior problems, or criminal or violent behavior.^{37 47-54} It will also reduce your child's risk of asthma, obesity, and lifetime illnesses, as shown in controlled studies.⁵⁵⁻⁵⁷ If your child already has an emotional-mental or behavioral disorder, it is now recommended that your child take omega-3 every day to reduce those symptoms. 53 54
- Physical Activity. Remember how mothers and grandmothers used to say to children every day, "Hey kids, go out and play, and don't come back until dinner"? It turns out that exercise is an essential "brain fertilizer." Without extensive physical activity (running and playing outside, active sports, etc.) every day, humans do not generate enough Brain Derived Neuro-Factor-BNDF for shortessential for sleep, positive mood, memory and learning.58 59 BNDF helps brains learn to avoid harm as well as how to get the good things in life.⁶⁰⁻⁷⁵ With low physical activity, the result is increased risk of depression, memory problems, and poor decision-making skills; but when exercise levels increase, depression decreases (just as much as it would with medication), and thinking skills are improved—among both children and adults. 76-80

Find out more about this Simple Gift at the upcoming website, www.GiveSimpleGifts.com, search "Brain Food."

5. Share These Simple Gifts with **Other Parents and Adults...**



The future of our own children depends on the safety and wellbeing of other people's children. So, please talk to the parents of your child's friends about these Simple Gifts. In the next week, speak to five other parents. Together, we can change all our futures.

Find out more about this Simple Gift at the upcoming website, www.GiveSimpleGifts.com, search for "Our Futures."

References Cited

- 1. Embry DD. Community-Based Prevention Using Simple, Low-Cost, Evidence-Based Kernels and Behavior Vaccines. Journal of Community Psychology 2004;32(5):575
- 2. Embry DD, Biglan A. Evidence-Based Kernels: Fundamental Units of Behavioral Influence. Clinical Child & Family Psychology Review 2008;11(3):75-113.
- 3. McCambridge J, Strang J. The efficacy of single-session motivational interviewing in reducing drug consumption and perceptions of drug-related risk and harm among young people: results from a multi-site cluster randomized trial. Addiction 2004;99(1):39-52.

- 4. Colby SM, Monti PM, Barnett NP, Rohsenow DL, Weissman K, Spirito A, et al. Brief motivational interviewing in a hospital setting for adolescent smoking: A preliminary study. Journal of Consulting & Clinical Psychology 1998;66(3):574-78.
- Bailey KA, Baker AL, Webster RA, Lewin TJ. Pilot randomized controlled trial of a brief alcohol intervention group for adolescents. *Drug and Alcohol Review* 2004;23(2):157-66.
- 6. John RK, Lon S, Shari Van H, Elizabeth CG, Sharon L, Grace C. Motivational interviewing for adolescent substance use: A pilot study. The Journal of adolescent health : official publication of the Society for Adolescent Medicine 2005;37(2):167-69.
- 7. Peterson PL, Baer JS, Wells EA, Ginzler JA, Garrett SB. Short-term effects of a brief motivational intervention to reduce alcohol and drug risk among homeless adolescents. Psychology of Addictive Behaviors 2006;20(3):254-64.
- 8. Stern SA, Meredith LS, Gholson J, Gore P, D'Amico EJ. Project CHAT: A brief motivational substance abuse intervention for teens in primary care. Journal of Substance Abuse Treatment 2007;32(2):153-65.
- 9. Bennett MM, B. An interdependent group contingency with mystery motivators to increase spelling performance. ProQuest Information & Learning: US, 2007.
- 10. Diane De Martini-Scully MABTJK. A packaged intervention to reduce disruptive behaviors in
- general education students. *Psychology in the Schools* 2000;37(2):149-56.
 Lasecki KL, B. Normalizing blood glucose levels in children with type I diabetes: Mystery motivators used within the context of behavioral consultation models. ProQuest Information & Learning: US, 2001.
- 12. Leblanc DM. B. Mystery motivator versus reward menu: An investigation of the effects of homebased reinforcement delivery systems used with home-school notes on disruptive/disengaged classroom behavior. ProQuest Information & Learning: US, 1999.
- Madaus MMR, A. Effectiveness of the mystery motivator intervention in improving math homework completion and accuracy percentages. ProQuest Information & Learning: US, 2000.
- Madaus MMR, Kehle TJ, Madaus J, Bray MA. Mystery Motivator as an Intervention to Promote Homework Completion and Accuracy. School Psychology International 2003;24(4):369-77.
- 15. Maus M, B. Independent group contingencies for reducing disruptive behavior in preschoolers with PDD-NOS. ProQuest Information & Learning: US, 2007. 16. Moore LA, Waguespack AM, Wickstrom KF, Witt JC, et al. Mystery motivator: An effective and time
- efficient intervention. School Psychology Review 1994;23(1):106-18.
- Robinson KE, B. Using the mystery motivator to improve child bedtime compliance. ProQuest Information & Learning: US, 1998.
 Robinson KE, Sheridan SM. Using the Mystery Motivator to improve child bedtime compliance.
- Child & Family Behavior Therapy 2000;22(1):29-49. 19. Valum JL. Student-Managed Study Skills Teams: Academic survival for adolescents at risk of school
- failure. ProQuest Information & Learning: US, 1996. 20. Chervin RD, Dillon JE, Archbold KH, Ruzicka DL. Conduct problems and symptoms of sleep
- disorders in children. Journal of the American Academy of Child & Adolescent Psychiatry 2003;42(2):201-08.
- 21. Wong MM, Brower KJ, Fitzgerald HE, Zucker RA. Sleep problems in early childhood and early onset of alcohol and other drug use in adolescence. Alcoholism: Clinical & Experimental Research 2004;28(4):578-87.
- 22. Owens J, Maxim R, McGuinn M, Nobile C, Msall M, Alario A. Television-viewing habits and sleep disturbance in school children. Pediatrics 1999:104(3):e27.
- 23. Dworak M, Schierl T, Bruns T, Str, der HK. Impact of singular excessive computer game and television exposure on sleep patterns and memory performance of school-aged children. *Pediatrics* 2007;120(5):978-85.
- 24. Meijer AM. Chronic sleep reduction, functioning at school and school achievement in preadolescents. *Journal of Sleep Research* 2008;17(4):395-405. 25. Van den Bulck J. Text messaging as a cause of sleep interruption in adolescents, evidence from a
- cross-sectional study. Journal of Sleep Research 2003;12(3):263-63.
- Tazawa Y, Okada K. Physical signs associated with excessive television-game playing and sleep deprivation. *Pediatrics International* 2001;43(6):647-50.
- 27. Johnson JG, Cohen P, Kasen S, First MB, Brook JS. Association between television viewing and sleep problems during adolescence and early adulthood.[see comment]. Archives of Pediatrics & Adolescent Medicine 2004;158(6):562-8.
- 28. Paavonen EJ, Pennonen M, Roine M, Valkonen S, Lahikainen AR. TV exposure associated with sleep disturbances in 5- to 6-year-old children. *Journal of Sleep Research* 2006;15(2):154-61. 29. Thompson DA, Christakis DA. The association between television viewing and irregular sleep
- schedules among children less than 3 years of age. Pediatrics 2005;116(4):851-6.
- Toyran M, Ozmert E, Yurdakok K. Television viewing and its effect on physical health of schoolage children. Turkish Journal of Pediatrics 2002;44(3):194-203. 31. Van den Bulck J. Television viewing, computer game playing, and Internet use and self-reported
- time to bed and time out of bed in secondary-school children.[see comment]. Sleep 2004:27(1):101-4. 32. Borzekowski DLG, Robinson TN. The Remote, the Mouse, and the No. 2 Pencil: The Household
- Media Environment and Academic Achievement Among Third Grade Students. Arch Pediatr Adolesc Med 2005;159(7):607-13.
- 33. Suganuma N, Kikuchi T, Yanagi K, Yamamura S, Morishima H, Adachi H, et al. Using electronic media before sleep can curtail sleep time and result in self-perceived insufficient sleep. Sleep and Biological Rhythms 2007;5(3):204-14.
- 34. Barkin SL, Finch SA, Ip EH, Scheindlin B, Craig JA, Steffes J, et al. Is Office-Based Counseling About Media Use, Timeouts, and Firearm Storage Effective? Results From a Cluster-Randomized, Controlled Trial. Pediatrics 2008;122(1):e15-25.
- 35. Gorin A, Raynor H, Chula-Maguire K, Wing R. Decreasing household television time: A pilot study of a combined behavioral and environmental intervention. Behavioral Interventions 2006;21(4):273-80.
- 36. Jordan AB, Hersey JC, McDivitt JA, Heitzler CD. Reducing Children's Television-Viewing Time: A Qualitative Study of Parents and Their Children. *Pediatrics* 2006;118(5):e1303-10. 37. Hibbeln JR, Nieminen LR, Blasbalg TL, Riggs JA, Lands WE. Healthy intakes of n-3 and n-6 fatty
- acids: estimations considering worldwide diversity. American Journal of Clinical Nutrition 2006;83(6 Suppl):1483S-93S
- 38. Griffing GT. Mother was right about cod liver oil. Medscape J Med 2008;10(1):8.
- 39. Raeder MB, Steen VM, Vollset SE, Bjelland I. Associations between cod liver oil use and symptoms of depression: The Hordaland Health Study. Journal of Affective Disorders 2007;101(1-3):245-49. 40. Cannell JJ, Vieth R, Umhau JC, Holick MF, Grant WB, Madronich S, et al. Epidemic influenza and vitamin D. Epidemiology & Infection 2006;134(6):1129-40.
- Bristow A, Qureshi S, Rona RJ, Chinn S. The use of nutritional supplements by 4-12 year olds in England and Scotland. European Journal of Clinical Nutrition 1997;51(6):366-9.
- 42. Bourre JM. Roles of unsaturated fatty acids (especially omega-3 fatty acids) in the brain at various ages and during ageing. Journal of Nutrition, Health & Aging 2004;8(3):163-74. 43. Broadhurst CL, Wang Y, Crawford MA, Cunnane SC, Parkington JE, Schmidt WF. Brain-specific lipids
- from marine, lacustrine, or terrestrial food resources: potential impact on early African Homo sapiens. Comparative Biochemistry & Physiology 2002;Part B, Biochemistry & Molecular Biology. 131(4):653-73.

- 44. Hibbeln JR. Seafood consumption and homicide mortality. A cross-national ecological analysis. World Review of Nutrition & Dietetics 2001;88:41-6.
- 45. Zhao Y-T, Chen Q, Sun Y-X, Li X-B, Zhang P, Xu Y, et al. Prevention of sudden cardiac death with omega-3 fatty acids in patients with coronary heart disease: A meta-analysis of randomized controlled trials. Annals of Medicine 2009;99999(1):1 - 10.
- 46. Simopoulos AP. The importance of the omega-6/omega-3 fatty acid ratio in cardiovascular disease and other chronic diseases. Experimental Biology & Medicine 2008;233(6):674-88. 47. Sublette ME, Hibbeln JR, Galfalvy H, Oquendo MA, Mann JJ. Omega-3 polyunsaturated essential fatty
- acid status as a predictor of future suicide risk. American Journal of Psychiatry 2006;163(6):1100-
- 48. Hibbeln JR. From homicide to happiness--a commentary on omega-3 fatty acids in human society.
- Cleave Award Lecture. Nutrition & Health 2007;19(1-2):9-19.
 Hibbeln J, Davis JM, Steer C, Emmett P, Rogers I, Williams C, et al. Maternal seafood consumption in pregnancy and neurodevelopmental outcomes in childhood (ALSPAC study): an observational cohort study. The Lancet 2007;369(9561):578-85.
- 50. Conklin SM, Manuck SB, Yao JK, Flory JD, Hibbeln JR, Muldoon MF. High omega-6 and low omega-3 fatty acids are associated with depressive symptoms and neuroticism. *Psychosomatic Medicine* 2007;69(9):932-4. 51. Conklin SM, Harris JI, Manuck SB, Yao JK, Hibbeln JR, Muldoon MF. Serum omega-3 fatty acids are
- associated with variation in mood, personality and behavior in hypercholesterolemic community
- volunteers. Psychiatry Research 2007;152(1):1-10.
 52. Hibbeln JR, Ferguson TA, Blasbalg TL. Omega-3 fatty acid deficiencies in neurodevelopment, aggression and autonomic dysregulation: opportunities for intervention. International Review of Psychiatry 2006;18(2):107-18.
- 53, Freeman MP, Hibbeln IR, Wisner KL, Davis IM, Mischoulon D, Peet M, et al. Omega-3 fatty acids: evidence basis for treatment and future research in psychiatry. Journal of Clinical Psychiatry 2006;67(12):1954-67.
- 54. Forum TAPFaH. The Links Between Diet and Behaviour: The influence of nutrition on mental health. In: Forum FH, editor. London, UK, 2008:43.
- 55. Biltagi MA, Baset AA, Bassiouny M, Kasrawi MA, Attia M. Omega-3 fatty acids, vitamin C and Zn supplementation in asthmatic children: a randomized self-controlled study. Acta Paediatr 2009.
- 56. Parra D, Ramel A, Bandarra N, Kiely M, Martlnez JA, Thorsdottir I. A diet rich in long chain omega-3 fatty acids modulates satiety in overweight and obese volunteers during weight loss. Appetite 2008;51(3):676-80.
- 57. Mozaffarian D, Stein PK, Prineas RJ, Siscovick DS. Dietary fish and omega-3 fatty acid consumption
- and heart rate variability in US adults. *Circulation* 2008;117(9):1130-7.
 58. Huber R, Tononi G, Cirelli C. Exploratory behavior, cortical BDNF expression, and sleep homeostasis. *Sleep: Journal of Sleep and Sleep Disorders Research* 2007;30(2):129-39.
- 59. Sei H, Saitoh D, Yamaroto K, Morita K, Morita Y. Differential effect of short-term REM sleep deprivation on NGF and BDNF protein levels in the rat brain. *Brain Research* 2000;877(2):387-90.
- 60. Bekinschtein P, Cammarota M, Katche C, Slipczuk L, Rossato JI, Goldin A, et al. BDNF is essential to promote persistence of long-term memory storage. PNAS Proceedings of the National Academy of Sciences of the United States of America 2008;105(7):2711-16.
- 61. Berglind WJ, See RE, Fuchs RA, Ghee SM, Whitfield Jr TW, Miller SW, et al. A BDNF infusion into the medial prefrontal cortex suppresses cocaine seeking in rats. European Journal of Neuroscience 2007;26(3):757-66. 62. Bilbo SD, Barrientos RM, Eads AS, Northcutt A, Watkins LR, Rudy JW, et al. Early-life infection leads
- to altered BDNF and IL-1fl mRNA expression in rat hippocampus following learning in adulthood. Brain, Behavior, and Immunity 2008;22(4):451-55.
- 63. Castillo DV, Figueroa-Guzm·n Y, Escobar ML. Brain-derived neurotrophic factor enhances conditioned taste aversion retention. *Brain Research* 2006;1067(1):250-55. 64. Dong C, Upadhya SC, Ding L, Smith TK, Hegde AN. Proteasome inhibition enhances the induction
- and impairs the maintenance of late-phase long-term potentiation. Learning & Memory 2008;15(5):335-47. 65. Eisenstein SA, Holmes PV. Chronic and voluntary exercise enhances learning of conditioned place
- preference to morphine in rats. Pharmacology, Biochemistry and Behavior 2007;86(4):607-15.
- 66. Fernandes CC, Pinto-Duarte A, Ribeiro JA, Sebasti, o AM. Postsynaptic action of brain-derived neurotrophic factor attenuates a7 nicotinic acetylcholine receptor-mediated responses in hippocampal interneurons. Journal of Neuroscience 2008;28(21):5611-18.
- G'n, I AS. The Concept of Synaptic Plasticity in Major Depression. Yeni Symposium: psikiyatri, n'roloji ve davranis bilimleri dergisi 2003;41(2):107-08.
- 68. Garoflos E, Panagiotaropoulos T, Pondiki S, Stamatakis A, Philippidis E, Stylianopoulou F. Cellular mechanisms underlying the effects of an early experience on cognitive abilities and affective states. Annals of General Psychiatry 2005;4.
- 69. Gomez-Pinilla F, Vaynman S, Ying Z. Brain-derived neurotrophic factor functions as a metabotrophin to mediate the effects of exercise on cognition. European Journal of Neuroscience 2008:28(11):2278-87.
- 70. Hall J, Thomas KL, Everitt BJ. Rapid and selective induction of BDNF expression in the hippocampus
- during contextual learning. Nature Neuroscience 2000;3(6):533-35.
 71. Johnson AW, Chen X, Crombag HS, Zhang C, Smith DR, Shokat KM, et al. The brain-derived neurotrophic factor receptor TrkB is critical for the acquisition but not expression of conditioned
- incentive value. European Journal of Neuroscience 2008;28(5):997-1002.
 12. Liu Y-F, Chen H-i, Yu L, Kuo Y-M, Wu F-S, Chuang J-I, et al. Upregulation of hippocampal TrkB and synaptotagmin is involved in treadmill exercise-enhanced aversive memory in mice. Neurobiology of Learning and Memory 2008;90(1):81-89. 73. Nottebohm F, Zeigler HP, Marler P. The Road We Travelled: Discovery, Choreography, and
- Significance of Brain Replaceable Neurons. Behavioral neurobiology of birdsong .: New York Academy of Sciences: New York, 2004:628-58. 74. Vaynman S, Ying Z, Gomez-Pinilla F. Hippocampal BDNF mediates the efficacy of exercise on
- synaptic plasticity and cognition. European Journal of Neuroscience 2004;20(10):2580-90.
- Wang J-W, Dranovsky A, Hen R. The when and where of BDNF and the antidepressant response. Biological Psychiatry 2008;63(7):640-41.
- 76. Cechetti F, Fochesatto C, Scopel D, Nardin P, GonÁalves CA, Netto CA, et al. Effect of a neuroprotective exercise protocol on oxidative state and BDNF levels in the rat hippocampus. Brain Research 2008;1188:182-88.
- 77. Chytrova G, Ying Z, Gomez-Pinilla F. Exercise normalizes levels of MAG and Nogo-A growth inhibitors after brain trauma. European Journal of Neuroscience 2008;27(1):1-11. 78. Duman CH, Schlesinger L, Russell DS, Duman RS. Voluntary exercise produces antidepressant and
- anxiolytic behavioral effects in mice. Brain Research 2008;1199:148-58.
- 79. Holmes PV, Poon LW, Chodzko-Zajko W, Tomporowski PD. Current Findings in Neurobiological Systems' Response to Exercise. Active living, cognitive functioning, and aging .: Human Kinetics: Champaign, 2006:75-89.
- 80. Winter B, Breitenstein C, Mooren FC, Voelker K, Fobker M, Lechtermann A, et al. High impact running improves learning. Neurobiology of Learning and Memory 2007;87(4):597-609