

## Practitioner Dietary Supplement Reference Guide -3<sup>rd</sup> Edition

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### Introduction to dotFIT Weight Loss Products

DiETING to lose weight without financial motivation is challenging for most everyone and generally ends with much of the weight regained within the first year.<sup>1,2,3,4,5</sup> Therefore, for weight/body fat reduction, dotFIT recommends exercise (some sort of significant physical activity) and calorie restricted meal planning based on a safe desired rate of loss. Participants should avoid loss of lean body mass and fill unavoidable nutrient gaps caused by the restricted food intake and necessary calorie deficit for weight loss by using appropriate supplementation including at a minimum, a daily multivitamin and mineral formula (MVM). See the dotFIT MVM section for MVMs and weight loss. This section will take you through the goal and rationale, including mechanisms of actions, for the use of the very few dietary supplements that have demonstrated safety and success in assisting in weight/body fat reduction and maintenance.

DiETING (calorie restriction) for weight loss and maintenance is difficult at best.<sup>6</sup> During normal energy restriction 25% of weight loss is from lean body mass/fat free mass (LBM)<sup>7,8</sup> and more depending on the magnitude of the deficit.<sup>9,10,11</sup> Although exercise helps protect LBM losses, by itself exercise is not a weight loss solution.<sup>12</sup> Weight regain is all but inevitable for most dieters as the body launches its evolutionary based natural weight loss defenses. Primary reasons for difficulties in reaching and maintaining weight loss include: 1) a need to continuously decrease calorie intake to overcome obligatory plateaus caused by overall weight/LBM reduction and exercise induced fitness improvements (both conditions can lead to a slower metabolism)<sup>13,14,15,16</sup> 2) energy level decreases (e.g. daily fatigue); 3) increases in appetite/cravings;<sup>17</sup> 4) environmental obstacles/influences (e.g. easy access to palatable foods, advertising,<sup>10,18</sup> time constraints, inability to increase daily/exercise activities, etc.) driving people back to old habits<sup>10,18</sup> 5) and finally as mentioned above, due to the amount of exercise needed to achieve and sustain weight loss, exercise has been consistently shown to be an ineffective weight loss solution by itself.<sup>19,20,21</sup>

Dietary supplements effectively addressing any or all the problems described above may be helpful in assisting users in avoiding or overcoming typical plateaus related to early weight loss without the otherwise normal obligatory increase in activity and/or decreased in food intake to continue desired weight/fat reduction. With weight loss prescription drugs being deemed to have too many negative side effects (including being pulled off the market<sup>22</sup>) with minimal results,<sup>4,23</sup> there is high interest in safe, natural and effective alternatives for assisting in weight management.<sup>4,24,25,26,27,28,29,30,31</sup>

The goal of supplements in this category is to assist the participant in complying with the daily routine that leads to weight reduction. The dietary supplements described in this section are currently used by thousands of practitioners for their clients in over 1,000 facilities in the U.S. All supplement ingredients listed here have safely demonstrated the potential to act in one or more of the following ways:

- Help create and maintain a calorie deficit by increasing daily calorie expenditure when compared to a non-supplemented state
- Protect lean body mass loss during energy restriction
- Raise energy levels that may make one more active throughout the day
- Reduce the drive to consume food
- Decrease calorie absorption

Other than the regular use of meal replacements, which can be used successfully throughout life as an adjunct to traditional daily food planning, the dieter would cease supplementation once the weight goal is achieved.

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### References

- <sup>1</sup> Lien LF, Haqq AM, Arlotto M, Slentz CA, Muehlbauer MJ, McMahon RL, Rochon J, Gallup D, Bain JR, Ilkayeva O, Wenner BR, Stevens RD, Millington DS, Muoio DM, Butler MD, Newgard CB, Svetkey LP. The STEDMAN project: biophysical, biochemical and metabolic effects of a behavioral weight loss intervention during weight loss, maintenance, and regain. *OMICS*. 2009 Feb;13(1):21-35.
- <sup>2</sup> McGuire MT, Wing RR, Klem ML, Lang W, Hill JO. What predicts weight regain in a group of successful weight losers? *J Consult Clin Psychol* 1999;67:177–85.
- <sup>3</sup> Phelan S, Hill JO, Lang W, Dibello JR, Wing RR. Recovery from relapse among successful weight maintainers. *Am J Clin Nutr*. 2003 Dec;78(6):1079-84.
- <sup>4</sup> Johansson K1, Neovius M, Hemmingsson E. Effects of anti-obesity drugs, diet, and exercise on weight-loss maintenance after a very-low-calorie diet or low-calorie diet: a systematic review and meta-analysis of randomized controlled trials. *Am J Clin Nutr*. 2014 Jan;99(1):14-23. doi: 10.3945/ajcn.113.070052. Epub 2013 Oct 30.
- <sup>5</sup> Kouvelioti R1, Vagenas G, Langley-Evans S. The effects of exercise and diet on weight loss maintenance in overweight and obese adults: a systematic review. *J Sports Med Phys Fitness*. 2014 Apr 16. [Epub ahead of print]
- <sup>6</sup> Kraschnewski JL, Boan J, Esposito J et al. Long-term weight loss maintenance in the United States. *Int J bes (Lond)* 2010; 34: 1644–1654
- <sup>7</sup> John W. Carbone, James P. McClung, and Stefan M. Pasiakos. Skeletal Muscle Responses to Negative Energy Balance: Effects of Dietary Protein. 2012 American Society for Nutrition. *Adv. Nutr.* 3: 119–126, 2012; doi:10.3945/an.111.001792. 119
- <sup>8</sup> Weinheimer EM, Sands LP, Campbell WW. A systematic review of the separate and combined effects of energy restriction and exercise on fat free mass in middle-aged and older adults: implications for sarcopenic obesity. *Nutr Rev*. 2010;68:375–88
- <sup>9</sup> Stiegler P, Cunliffe A. The role of diet and exercise for the maintenance of fat-free mass and resting metabolic rate during weight loss. *Sports Med*. 2006;36(3):239-62
- <sup>10</sup> Eric T Trexler<sup>1</sup>, Abbie E Smith-Ryan<sup>1\*</sup> and Layne E Norton . Metabolic adaptation to weight loss: implications for the athlete. Trexler et al. *Journal of the International Society of Sports Nutrition* 2014, 11:7 <http://www.jissn.com/content/11/1/7>
- <sup>11</sup> Garthe I, Raastad T, Refsnes PE, Koivisto A, Sundgot-Borgen J: Effect of two different weight-loss rates on body composition and strength and power-related performance in elite athletes. *Int J Sport Nutr Exerc Metab* 2011, 21:97–104
- <sup>12</sup> John M. Jakicic, Ph.D., Amy D. Otto, Ph.D., RD, LDN, Wei Lang, Ph.D., Linda Semler, MS, RD, LDN, Carena Winters, Ph.D., MPH, Kristen Polzien, Ph.D., and Kara I. Mohr, Ph.D. The Effect of Physical Activity on 18-Month Weight Change in Overweight Adults. *Obesity (Silver Spring)*. 2011 January; 19(1): 100–109. doi:10.1038/oby.2010.122.
- <sup>13</sup> Thomas DM, Ivanescu AE , Martin CK , Heymsfield SB , Marshall K , Bodrato VE , Williamson DA , Anton SD , Sacks FM , Ryan D , Bray GA. Predicting successful long-term weight loss from short-term weight-loss outcomes: new insights from a dynamic energy balance model (the POUNDS Lost study). *Am J Clin Nutr*. 2015 Mar;101(3):449-54. doi: 10.3945/ajcn.114.091520. Epub 2014 Dec 24
- <sup>14</sup> Hall KD. Predicting metabolic adaptation, body weight change, and energy intake in humans. *Am J Physiol Endocrinol Metab*. 2010; 298(3): E449-66.
- <sup>15</sup> Jastroch M, Divakaruni AS, Mookerjee S, Treberg JR, Brand MD: Mitochondrial proton and electron leaks. *Essays Biochem* 2010, 47:53–67.
- <sup>16</sup> Kim B: Thyroid hormone as a determinant of energy expenditure and the basal metabolic rate. *Thyroid* 2008, 18:141–144.
- <sup>17</sup> Strohacker K, McCaffery JM, Maclean PS, Wing RR: Adaptations of leptin, ghrelin or insulin during weight loss as predictors of weight regain: a review of current literature. *Int J Obes* 2013:1–9. <http://www.nature.com/ijo/journal/vaop/ncurrent/full/ijo2013118a.html>.
- <sup>18</sup> Himanshu Gupta. Barriers to and Facilitators of Long Term Weight Loss Maintenance in Adult UK People: A Thematic Analysis. *Int J Prev Med*. 2014 Dec; 5(12): 1512–1520
- <sup>19</sup> I-Min Lee, MBBS, ScD; Luc Djoussé, MD, DSc; Howard D. Sesso, ScD; Lu Wang, MD, PhD; Julie E. Buring, ScD. Physical Activity and Weight Gain Prevention *JAMA*. 2010;303(12):1173-1179. doi:10.1001/jama.2010.312
- <sup>20</sup> Fredrik Bertz, Hilde K Brekke, Lars Ellegård, Kathleen M Rasmussen, Margareta Wennergren, and Anna Winkvist. Diet and exercise weight-loss trial in lactating overweight and obese women. *Am J Clin Nutr* 2012;96:698–705. Printed in USA. \_ 2012 American Society for Nutrition

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- <sup>21</sup> Nicklas BJ, Chmelo E, Delbono O, Carr JJ, Lyles MF, Marsh AP. Effects of resistance training with and without caloric restriction on physical function and mobility in overweight and obese older adults: a randomized controlled trial. *Am J Clin Nutr.* 2015 May;101(5):991-9. doi: 10.3945/ajcn.114.105270. Epub 2015 Mar 11
- <sup>22</sup> Williams G. Withdrawal of sibutramine in Europe. *Br J Med* 2010;340:c824.
- <sup>23</sup> Rodgers RJ, Tsch€op MH, Wilding JPH. Anti-obesity drugs: past present and future. *Dis Model Mech* 2012;5:621–626
- <sup>24</sup> Jordan Outlaw, Colin Wilborn, Abbie Smith, et al. Effects of ingestion of a commercially available thermogenic dietary supplement on resting energy expenditure, mood state and cardiovascular measures. *Journal of the International Society of Sports Nutrition* 2013, 10:25 Page 2 of 8 <http://www.jissn.com/content/10/1/25>
- <sup>25</sup> Jeukendrup AE, Randell R. Fat burners: nutrition supplements that increase fat metabolism. *Obes Rev.* 2011 Oct;12(10):841-51. doi: 10.1111/j.1467-789X.2011.00908.x.
- <sup>26</sup> Janssens PL, Hursel R, Westerterp-Plantenga MS. Capsaicin increases sensation of fullness in energy balance, and decreases desire to eat after dinner in negative energy balance. *Appetite.* 2014 Jun;77:44-9. doi: 10.1016/j.appet.2014.02.018. Epub 2014 Mar 12
- <sup>27</sup> Saito M, Yoneshiro T. Capsinoids and related food ingredients activating brown fat Thermogenesis and reducing body fat in humans. *Curr Opin Lipidol.* 2013 Feb;24(1):71-7. doi: 10.1097/MOL.0b013e32835a4f40
- <sup>28</sup> Dieudonne Kuate, Blanche CO Etoundi, Boris KG Azantsa, Anne-Pascale N Kengne, Judith L Ngondi, Julius E Oben. The use of LeptiCore® in reducing fat gain and managing weight loss in patients with metabolic Syndrome. Kuate et al. *Lipids in Health and Disease* 2010, 9:20
- <sup>29</sup> Marilyn L Barrett, Jay K Udani, A proprietary alpha-amylase inhibitor from white bean (*Phaseolus vulgaris*): A review of clinical studies on weight loss and glycemic control. Barrett and Udani *Nutrition Journal* 2011, 10:24
- <sup>30</sup> Heymsfield SB, van Mierlo CA, van der Knaap HC, Heo M, Frier HI. Weight management using a meal replacement strategy: meta and pooling analysis from six studies. *Int J Obes Relat Metab Disord.* 2003 May;27(5):537-49
- <sup>31</sup> Yun JW. Possible anti-obesity therapeutics from nature—A review. *Phytochemistry* 2010;71:1625–1641