References

1. Helms, E.R., A.A. Aragon, and P.J. Fitschen, *Evidence-based recommendations for natural bodybuilding contest preparation: nutrition and supplementation.* J Int Soc Sports Nutr, 2014. **11**: p. 20.

2. Halliday, T.M., J.P. Loenneke, and B.M. Davy, *Dietary Intake, Body Composition, and Menstrual Cycle Changes during Competition Preparation and Recovery in a Drug-Free Figure Competitor: A Case Study.* Nutrients, 2016. **8**(11).

3. Fagerberg, P., *Negative consequences of low energy availability in natural male bodybuilding: a review.* Int J Sport Nutr Exerc Metab, 2018. **28**(4): p. 385–402.

4. Hulmi, J.J., et al., The effects of intensive weight reduction on body composition and serum hormones in female fitness competitors. Frontiers in Physiology, 2017. **10**(7): p. 689.

5. Rohrig, B.J., et al., *Psychophysiological Tracking of a Female Physique Competitor through Competition Preparation.* Int J Exerc Sci, 2017. **10**(2): p. 301–311.

6. Petrizzo, J., et al., *Case Study: The Effect of 32 Weeks of Figure-Contest Preparation on a Self-Proclaimed Drug-free Female's Lean Body and Bone Mass.* Int J Sport Nutr Exerc Metab, 2017. **27**(6): p. 543–9.

7. Rossow, L.M., et al., *Natural bodybuilding competition preparation and recovery: a 12-month case study.* Int J Sports Physiol Perform, 2013. **8**(5): p. 582–92.

8. van der Ploeg, G.E., et al., *Body composition changes in female bodybuilders during preparation for competition.* Eur J Clin Nutr, 2001. **55**(4): p. 268–77.

9. Maestu, J., et al., *Anabolic and catabolic hormones and energy balance of the male bodybuilders during the preparation for the competition.* J Strength Cond Res, 2010. **24**(4): p. 1074–81.

10. Sundgot-Borgen, J., Garthe, I., *Elite athletes in aesthetic and Olympic weight-class sports and the challenge of body weight and body compositions.* Journal of Sports Sciences, 2011. **1**(29 sup1): p. S101–14.

11. Romano, K.A., et al., *Helpful or harmful? The comparative value of self-weighing and calorie counting versus intuitive eating on the eating disorder symptomology of college students.* Eat Weight Disord, 2018. **[Epub ahead of print]**.

12. Stewart, T.M., D.A. Williamson, and M.A. White, *Rigid vs. flexible dieting: association with eating disorder symptoms in nonobese women.* Appetite, 2002. **38**(1): p. 39–44.

13. Palascha, A., E. van Kleef, and H.C. van Trijp, *How does thinking in Black and*

White terms relate to eating behavior and weight regain? J Health Psychol, 2015. **20**(5): p. 638–48.

14. Sho, H., *History and characteristics of Okinawan longevity food.* Asia Pac J Clin Nutr, 2001. **10**(2): p. 159–64.
15. Tylka, T.L., Calogero, R.M., Daníelsdóttir, S., *Is intuitive eating the same as flexible dietary control? Their links to each other and well-being could provide an answer.* Appetite, 2015. **1**(95): p. 166–75.
16. Ogden, J., Whyman, C., *The effect of repeated weighing on psychological state.* Eur Eat Disord Rev, 1997. **5**(2): p. 121–30.

References

1. Hall, K.D., *What is the required energy deficit per unit weight loss?* Int J Obes, 2007. **32**(3): p. 573–6.
2. Hall, K.D. and C.C. Chow, *Why is the 3500 kcal per pound weight loss rule wrong?* Int J Obes (2005), 2013. **37**(12): p. 10.1038/ijo.2013.112.
3. Carpentier, A.C., *Acute Adaptation of Energy Expenditure Predicts Diet-Induced Weight Loss: Revisiting the Thrifty Phenotype.* Diabetes, 2015. **64**(8): p. 2714–2716.
4. Beaulieu, K., et al., *Homeostatic and non-homeostatic appetite control along the spectrum of physical activity levels: An updated perspective.* Physiol Behav, 2018. **1**(192): p. 23-29.
5. Forbes, G.B., *Body fat content influences the body composition response to nutrition and exercise.* Ann N Y Acad Sci, 2000. **904**(1): p. 359–65.
6. Kondo, M., et al., *Upper limit of fat-free mass in humans: A study on Japanese Sumo wrestlers.* Am J Hum Biol, 1994. **6**(5): p. 613–8.
7. Helms, E.R., A.A. Aragon, and P.J. Fitschen, *Evidence-based recommendations for natural bodybuilding contest preparation: nutrition and supplementation.* J Int Soc Sports Nutr, 2014. **11**: p. 20.
8. Ainsworth, B.E., et al., *Compendium of physical activities: classification of energy costs of human physical activities.* Med Sci Sports Exerc, 1993. **25**(1): p. 71–80.
9. Wilson, J.M., et al., *Concurrent training: a meta-analysis examining interference of aerobic and resistance exercises.* J Strength Cond Res, 2012. **26**(8): p. 2293–307.
10. Hawley, J.A., *Molecular responses to strength and endurance training: are they incompatible?* Appl Physiol Nutr Metab, 2009. **34**(3): p. 355–61.
11. Gergley, J.C., *Comparison of two lower-body modes of endurance training on lower- body strength development while concurrently training*. JJ Strength Cond Res, 2009. **23**(3): p. 979–87.
12. Burgomaster, K.A., et al., *Similar metabolic adaptations during exercise after low volume sprint interval and traditional endurance training in humans.* Journal of Physiology, 2008. **586**(1): p. 151–60.
13. Balabinis, C.P., et al., *Early phase changes by concurrent endurance and strength training.* J Strength Cond Res, 2003. **17**(2): p. 393–401.
14. Borsheim, E. and R. Bahr, *Effect of exercise intensity, duration and mode on post-exercise oxygen consumption.* Sports Med, 2003. **33**(14): p. 1037–60.

15. Lysholm, J. and J. Wiklander, *Injuries in runners.* Am J Sports Med, 1987. **15**(2): p. 168–171.

16. Garthe, I., et al., Effect of nutritional intervention on body composition and performance in elite athletes. Eur J Sport Sci, 2013. 13(3): p. 295–303.

17. Williams, M.H., Nutrition for health, fitness, and sport. 2005: McGraw-Hill Science Engineering.

18. Levine, J.A., N.L. Eberhardt, and M.D. Jensen, *Role of Nonexercise Activity Thermogenesis in Resistance to Fat Gain in Humans.* Science, 1999. **283**(5399):p. 212–214.

19. Maltais, M.L., et al., *Effect of Resistance Training and Various Sources of Protein Supplementation on Body Fat Mass and Metabolic Profile in Sarcopenic Overweight Elderly Men: A Pilot Study.* Int J Sport Nutr Exerc Metab, 2015.

20. Peterson, M.D., M.R. Rhea, and B.A. Alvar, *Applications of the dose-response for muscular strength development: a review of meta-analytic efficacy and reliability for designing training prescription.* J Strength Cond Res, 2005. **19**(4): p. 950–8.

21. Ogasawara, R., et al., *Effects of periodic and continued resistance training on muscle CSA and strength in previously untrained men.* Clin Physiol Funct Imaging, 2011. **31**(5): p. 399–404.

22. Mountjoy, M., et al., *International Olympic Committee (IOC) Consensus Statement on Relative Energy Deficiency in Sport (RED-S): 2018 Update.* Int J Sport Nutr Exerc Metab, 2018. **28**(4): p. 316–331.

23. Loucks, A.B., Callister R., *Induction and prevention of low-T3 syndrome in exercising women.* Am J Physiol, 1993. **264**(5 Pt 2): p. R924–30.

24. Hulmi, J.J., et al., *The effects of intensive weight reduction on body composition and serum hormones in female fitness competitors.* Frontiers in Physiology, 2017. **10**(7): p. 689.

25. Halliday, T.M., J.P. Loenneke, and B.M. Davy, *Dietary Intake, Body Composition, and Menstrual Cycle Changes during Competition Preparation and Recovery in a Drug-Free Figure Competitor: A Case Study.* Nutrients, 2016. **8**(11).

26. Fagerberg, P., *Negative consequences of low energy availability in natural male bodybuilding: a review.* Int J Sport Nutr Exerc Metab, 2018. **28**(4): p. 385–402.

27. Burke, L.M., et al., *Pitfalls of Conducting and Interpreting Estimates of Energy Availability in Free-Living Athletes.* Int J Sport Nutr Exerc Metab, 2018. **28**(4): p. 350–63.

References

1. Bilsborough, S. and N. Mann, *A review of issues of dietary protein intake in humans.* Int J Sport Nutr Exerc Metab, 2006. **16**(2): p. 129.

2. Lemon, P.W., *Beyond the zone: Protein needs of active individuals.* JJ Am Coll Nutr, 2000. **19**(suppl 5): p. 513S–21S.

3. Millward, D.J., *Macronutrient intakes as determinants of dietary protein and amino acid adequacy.* Journal of Nutrition, 2004. **134**(6): p. 1588S–96S.

4. Elia, M., R.J. Stubbs, and C.J. Henry, *Differences in fat, carbohydrate, and protein metabolism between lean and obese subjects undergoing total starvation.* Obes Res, 1999. **7**(6): p. 597–604.

5. Saudek, C.D. and P. Felig, *The metabolic events of starvation.* Am J Med, 1976. **60**(1): p. 117–26.

6. Helms, E.R., et al., *A Systematic Review of Dietary Protein During Caloric Restriction in Resistance Trained Lean Athletes: A Case for Higher Intakes.* Int J Sport Nutr Exerc Metab, 2014. **24**(2).

7. Hector, A.J., et al., *Pronounced energy restriction with elevated protein intake results in no change in proteolysis and reductions in skeletal muscle protein synthesis that are mitigated by resistance exercise.* The FASEB Journal, 2018. **32**(1): p. 265–275.

8. Carbone, J.W., et al., *Effects of short-term energy deficit on muscle protein breakdown and intramuscular proteolysis in normal-weight young adults.* Appl Physiol Nutr Metab, 2014. **39**(8): p. 960–8.

9. Pasiakos, S.M., et al., *Acute energy deprivation affects skeletal muscle protein synthesis and associated intracellular signaling proteins in physically active adults.* J Nutr, 2010. **140**(4): p. 745–51.

10. Heymsfield, S.B., et al., *Voluntary weight loss: systematic review of early phase body composition changes.* Obes Rev, 2011. **12**(5): p. e348–61.

11. Murphy, C.H., A.J. Hector, and S.M. Phillips, *Considerations for protein intake in managing weight loss in athletes.* Eur J Sport Sci,, 2015. **15**(1): p. 21–28.

12. Phillips, S.M. and L.J. Van Loon, *Dietary protein for athletes: from requirements to optimum adaptation.* J Sports Sci, 2011. **29 Suppl 1**: p. S29–38.

13. Jager, R., et al., *International Society of Sports Nutrition Position Stand: protein and exercise.* J Int Soc Sports Nutr, 2017. **14**: p. 20.

14. Hector, A. and S.M. Phillips, *Protein Recommendations for Weight Loss in Elite Athletes: A Focus on Body Composition and Performance.* Int J

Sport Nutr Exerc Metab, 2018. **28**(2): p. 170–7:

15. Walberg, J.L., et al., *Macronutrient content of a hypoenergy diet affects nitrogen retention and muscle function in weight lifters.* Int J Sports Med, 1988. **9**(4): p. 261–6.

16. Mettler, S., N. Mitchell, and K.D. Tipton, *Increased protein intake reduces lean body mass loss during weight loss in athletes.* Med Sci Sports Exerc, 2010. **42**(2): p. 326–37.

17. Longland, T.M., et al., *Higher compared with lower dietary protein during an energy deficit combined with intense exercise promotes greater lean mass gain and fat mass loss: a randomized trial.* Am J Clin Nutr, 2016. **103**(3): p. 738–46.

18. Helms, E.R., et al., *High-protein, low-fat, short-term diet results in less stress and fatigue than moderate-protein moderate-fat diet during weight loss in male weightlifters: a pilot study.* Int J Sport Nutr Exerc Metab, 2015. **25**(2): p. 163–70.

19. Pasiakos, S.M., et al., *Effects of high-protein diets on fat-free mass and muscle protein synthesis following weight loss: a randomized controlled trial.* FASEB Journal, 2013. **27**(9): p. 3837–47.

20. Dudgeon, W.D., Kelley, E.P., Scheett, T.P., *Effect of Whey Protein in Conjunction with a Caloric-Restricted Diet and Resistance Training*. J Strength Cond Res, 2017. **31**(5): p. 1353–61.

21. Tipton, K.D. and R.R. Wolfe, *Protein and amino acids for athletes.* Journal of Sports Sciences, 2004. **22**(1): p. 65–79.

22. Antonio, J., et al., *A high protein diet (3.4 g/kg/d) combined with a heavy resistance training program improves body composition in healthy trained men and women--a follow-up investigation.* J Int Soc Sports Nutr, 2015. **12**: p. 39.

23. Antonio, J., et al., *The effects of consuming a high protein diet (4.4 g/kg/d) on body composition in resistance-trained individuals.* J Int Soc Sports Nutr, 2014. **11**: p. 19.

24. Horswill, C.A., et al., *Weight loss, dietary carbohydrate modifications, and high intensity, physical performance.* Med Sci Sports Exerc, 1990. **22**(4): p. 470–6.

25. Jacobs, I., P. Kaiser, and P. Tesch, *Muscle strength and fatigue after selective glycogen depletion in human skeletal muscle fibers.* European Journal of Applied Physiology and Occupational Physiology, 1981. **46**(1): p. 47–53.

26. Leveritt, M. and P.J. Abernethy, *Effects of Carbohydrate Restriction on*

Strength Performance. J Strength Cond Res, 1999. **13**(1): p. 52–7.

27. Morton, R.W., et al., *A systematic review, meta-analysis and meta-regression of the effect of protein supplementation on resistance training-induced gains in muscle mass and strength in healthy adults.* Br J Sports Med, 2018. **52**(6): p. 376.

28. Willoughby, D.S., J.R. Stout, and C.D. Wilborn, *Effects of resistance training and protein plus amino acid supplementation on muscle anabolism, mass, and strength.* Amino Acids, 2007. **32**(4): p. 467–77.

29. Candow, D.G., et al., *Effect of whey and soy protein supplementation combined with resistance training in young adults.* Int J Sport Nutr Exerc Metab, 2006. **16**(3): p. 233–44.

30. Cribb, P.J., et al., *Effects of whey isolate, creatine, and resistance training on muscle hypertrophy.* Med Sci Sports Exerc, 2007. **39**(2): p. 298–307.

31. Hoffman, J.R., et al., *Effect of a proprietary protein supplement on recovery indices following resistance exercise in strength/power athletes.* Amino Acids, 2010. **38**(3): p. 771–8.

32. Hoffman, J.R., et al., *Effect of protein-supplement timing on strength, power, and body-composition changes in resistance-trained men.* Int J Sport Nutr Exerc Metab, 2009. **19**(2): p. 172–85.

33. Hoffman, J.R., et al., *Effect of Protein Intake on Strength, Body Composition and Endocrine Changes in Strength/Power Athletes*. J Int Soc Sports Nutr, 2006. **3**(2): p. 12–18.

34. Paolisso, G., et al., *Advancing age and insulin resistance: new facts about an ancient history.* Eur J Clin Invest, 1999. **29**(9): p. 758–69.

35. Kumar, V., et al., *Age-related differences in the dose–response relationship of muscle protein synthesis to resistance exercise in young and old men.* The Journal of Physiology, 2009. **587**(1): p. 211–217.

36. Manini, T.M., *Energy Expenditure and Aging.* Ageing Research Reviews, 2010. **9**(1): p. 1.

37. Franz, M.J., *So Many Nutrition Recommendations — Contradictory or Compatible?* Diabetes Spectrum, 2003. **16**(1): p. 56–63.

38. Feinman, R.D., et al., *Dietary carbohydrate restriction as the first approach in diabetes management: Critical review and evidence base.* Nutrition, 2015. **31**(1): p. 1–13.

39. Hall, Kevin D., et al., *Calorie for Calorie, Dietary Fat Restriction Results in More Body Fat Loss than Carbohydrate Restriction in People with Obesity.* Cell Metabolism, 2015. **22**(3): p. 427–436.

40. Chatterton, S., Zinn, C., Storey, A.G., Helms, E.R., *The effect of an 8-week LCHF diet in sub-elite Olympic weightlifters and powerlifters on strength and power performance: A pilot case-study.* Journal of Australian Strength and Conditioning, 2017. **25**(2).

41. Vargas, S., et al., *Efficacy of ketogenic diet on body composition during resistance training in trained men: a randomized controlled trial.* J Int Soc Sports Nutr, 2018. **15**(1): p. 31.

42. Gibson, A., et al., *Do ketogenic diets really suppress appetite? a systematic review and meta-analysis*. Obes Rev, 2015. **16**(1): p. 64–76.

43. Kephart, W.C., et al., *The Three-Month Effects of a Ketogenic Diet on Body Composition, Blood Parameters, and Performance Metrics in CrossFit Trainees: A Pilot Study.* Sports, 2018. **6**(1): p. 1.

44. Escobar, K.A., Morales, J., Vandusseldorp, T.A., *The Effect of a Moderately Low and High Carbohydrate Intake on Crossfit Performance.* Int J Exerc Sci, 2016. **9**(4): p. 460.

45. Hall, K.D., Guo, J., *Obesity energetics: body weight regulation and the effects of diet composition.* Gastroenterology, 2017. **152**(7): p. 1718–27.

46. Cholewa, J.M., Newmire, D.E., Zanchi, N.E., *Carbohydrate Restriction: Friend or Foe of Resistance-Based Exercise Performance?* Nutrition, 2018. **[Epub ahead of print]**.

47. Johnstone, A.M., et al., *Effects of a high-protein ketogenic diet on hunger, appetite, and weight loss in obese men feeding ad libitum.* Am J Clin Nutr, 2008. **87**(1): p. 44–55.

48. Green, D.A., et al., *A Low-Carbohydrate Ketogenic Diet Reduces Body Weight Without Compromising Performance in Powerlifting and Olympic Weightlifting Athletes.* J Strength Cond Res, 2018. **[Epub ahead of print]**.

49. Sawyer, J.C., et al., *Effects of a short-term carbohydrate-restricted diet on strength and power performance.* J Strength Cond Res, 2013. **27**(8): p. 2255–62.

50. Paoli, A., et al., *Ketogenic diet does not affect strength performance in elite artistic gymnasts.* J Int Soc Sports Nutr, 2012. **9**(1): p. 34.

51. Chappell, A.J., Simper, T., Barker, M.E., *Nutritional strategies of high level natural bodybuilders during competition preparation.* J Int Soc Sports Nutr, 2018. **15**(1): p. 4.

52. Pittas AG, Das SK, Hajduk CL, Golden J, Saltzman E, Stark PC, et al. *A low-glycemic load diet facilitates greater weight loss in overweight adults with high insulin secretion but not in overweight adults with low insulin secretion in the CALERIE Trial.* Diabetes Care. 2005;**28**(12):2939–41.

53. Cornier, M.A., et al., *Insulin sensitivity determines the effectiveness of dietary macronutrient composition on weight loss in obese women.* Obes Res, 2005. **13**(4): p. 703–9.

54. Ebbeling, C.B., et al., *Effects of a low-glycemic load vs low-fat diet in obese young adults: a randomized trial.* JAMA, 2007. **297**(19):2092-102.

55. Le, T., et al., *Effects of Diet Composition and Insulin Resistance Status on Plasma Lipid Levels in a Weight Loss Intervention in Women.* J Am Heart Assoc, 2016. **5**(1).

56. Gardner, C.D., et al., *Weight loss on low-fat vs. low-carbohydrate diets by insulin resistance status among overweight adults and adults with obesity: A randomized pilot trial.* Obesity, 2016. **24**(1): p. 79–86

57. Gardner, C.D., et al., *Effect of low-fat vs low-carbohydrate diet on 12-month weight loss in overweight adults and the association with genotype pattern or insulin secretion: The DIETFITS randomized clinical trial.* JAMA, 2018. **319**(7): p. 667–79.

58. Danadian, K., et al., *Insulin sensitivity in African-American children with and without family history of type 2 diabetes.* Diabetes Care, 1999. **22**(8): p. 1325–9.

59. Arslanian, S.A., et al., *Family history of type 2 diabetes is associated with decreased insulin sensitivity and an impaired balance between insulin sensitivity and insulin secretion in white youth.* Diabetes Care, 2005. **28**(1): p. 115–9.

60. Svendsen, P.F., et al., *Obesity, body composition and metabolic disturbances in polycystic ovary syndrome.* Hum Reprod, 2008. **23**(9): p. 2113–21.

61. Awdishu, S., et al., *Oligomenorrhoea in exercising women: a polycystic ovarian syndrome phenotype or distinct entity?* Sports Med, 2009. **39**(12): p. 1055–69.

62. Bermon, S., et al., *Serum Androgen Levels in Elite Female Athletes.* The Journal of Clinical Endocrinology and Metabolism, 2014. **99**(11): p. 4328–4335.

63. Rickenlund, A., et al., *Hyperandrogenicity is an alternative mechanism underlying oligomenorrhea or amenorrhea in female athletes and may improve physical performance.* Fertil Steril, 2003. **79**(4): p. 947–55.

64. Mavropoulos, J.C., et al., *The effects of a low-carbohydrate, ketogenic diet on the polycystic ovary syndrome: A pilot study.* Nutrition and Metabolism, 2005. **2**: p. 35–35.

65. Galletly, C., et al., *Psychological benefits of a high-protein, low-*

carbohydrate diet in obese women with polycystic ovary syndrome--a pilot study. Appetite, 2007. **49**(3): p. 590–3.

66. Sorensen, L.B., et al., *Effects of increased dietary protein-to-carbohydrate ratios in women with polycystic ovary syndrome.* Am J Clin Nutr, 2012. **95**(1): p. 39–48.

67. Kristensen, M. and M.G. Jensen, *Dietary fibres in the regulation of appetite and food intake. Importance of viscosity.* Appetite, 2011. **56**(1): p. 65–70.

68. Shah, M., et al., *Effect of a High-Fiber Diet Compared With a Moderate-Fiber Diet on Calcium and Other Mineral Balances in Subjects With Type 2 Diabetes.* Diabetes Care, 2009. **32**(6): p. 990–995.

69. Turner, N.D. and J.R. Lupton, *Dietary Fiber.* Advances in Nutrition: An International Review Journal, 2011. **2**(2): p. 151–152.

References

1. Calton, J., *Prevalence of micronutrient deficiency in popular diet plans.* J Int Soc Sports Nutr, 2010. **7**(1): p. 24.

2. Sandoval, W.M. and V.H. Heyward, *Food selection patterns of bodybuilders.* Int J Sport Nutr, 1991. **1**(1): p. 61–8.

3. Sandoval, W.M., V.H. Heyward, and T.M. Lyons, *Comparison of body composition, exercise and nutritional profiles of female and male bodybuilders at competition.* J Sports Med Phys Fitness, 1989. **29**(1): p. 63–70.

4. Walberg-Rankin, J., C.E. Edmonds, and F.C. Gwazdauskas, *Diet and weight changes of female bodybuilders before and after competition.* Int J Sport Nutr, 1993. **3**(1): p. 87–102.

5. Bazzarre, T.L., S.M. Kleiner, and M.D. Litchford, *Nutrient intake, body fat, and lipid profiles of competitive male and female bodybuilders.* J Am Coll Nutr, 1990. **9**(2): p. 136–42.

6. Kleiner, S.M., T.L. Bazzarre, and B.E. Ainsworth, *Nutritional status of nationally ranked elite bodybuilders.* Int J Sport Nutr, 1994. **4**(1): p. 54–69.

7. Helms, E.R., A.A. Aragon, and P.J. Fitschen, *Evidence-based recommendations for natural bodybuilding contest preparation: nutrition and supplementation.* J Int Soc Sports Nutr, 2014. **11**(1): p. 20.

8. Maxwell, C. and S.L. Volpe, *Effect of zinc supplementation on thyroid hormone function. A case study of two college females.* Ann Nutr Metab, 2007. **51**(2): p. 188–94.

9. Mielgo-Ayuso, J., et al., *Iron supplementation prevents a decline in iron stores and enhances strength performance in elite female volleyball players during the competitive season.* Appl Physiol Nutr Metab, 2015. **40**(6): p. 615–622.

10. Godar, D.E., R.J. Landry, and A.D. Lucas, *Increased UVA exposures and decreased cutaneous Vitamin D(3) levels may be responsible for the increasing incidence of melanoma.* Med Hypotheses, 2009. **72**(4): p. 434–43.

11. Ismaeel, A., Weems, S., Willoughby, D.S., *A Comparison of the Nutrient Intakes of Macronutrient-Based Dieting and Strict Dieting Bodybuilders.* Int J Sport Nutr Exerc Metab, 2018. **28**(5): p. 502–8.

12. Wang, X., et al., *Fruit and vegetable consumption and mortality from all causes, cardiovascular disease, and cancer: systematic review and dose-response meta-analysis of prospective cohort studies*. The BMJ, 2014. **349**: p. g4490.

13. Aune, D., et al., *Fruit and vegetable intake and the risk of cardiovascular disease, total cancer and all-cause mortality — a systematic review and dose-response meta-analysis of prospective studies.* International Journal of Epidemiology, 2017. **46**(3): p.1029–56.

14. Slavin, J.L. and B. Lloyd, *Health Benefits of Fruits and Vegetables.* Advances in Nutrition: An International Review Journal, 2012. **3**(4): p. 506–516.

15. Killer, S.C., A.K. Blannin, and A.E. Jeukendrup, *No evidence of dehydration with moderate daily coffee intake: a counterbalanced cross-over study in a free-living population.* PLoS One, 2014. **9**(1): p. e84154.

16. O'Brien, C. and F. Lyons, *Alcohol and the Athlete.* Sports Med, 2000. **29**(5): p. 295–300.

17. Armstrong, L.E., et al., *Urinary indices of hydration status.* Int J Sport Nutr, 1994. **4**(3): p. 265–79.

18. Kraft, J.A., et al., *The influence of hydration on anaerobic performance: a review.* Res Q Exerc Sport, 2012. **83**(2): p. 282–92.

References

1. Wing, R.R. and R.W. Jeffery, *Prescribed "breaks" as a means to disrupt weight control efforts*. Obes Res, 2003. **11**(2): p. 287–291.

2. Doucet, E., et al., *Evidence for the existence of adaptive thermogenesis during weight loss.* Br J Nutr, 2001. **85**(6): p. 715–23.

3. Rosenbaum, M., et al., *Long-term persistence of adaptive thermogenesis in subjects who have maintained a reduced body weight.* Am J Clin Nutr, 2008. **88**(4): p. 906–12.

4. Levine, J.A., N.L. Eberhardt, and M.D. Jensen, *Role of Nonexercise Activity Thermogenesis in Resistance to Fat Gain in Humans.* Science, 1999. **283**(5399): p. 212–214.

5. Byrne, N.M., et al., *Intermittent energy restriction improves weight loss efficiency in obese men: the MATADOR study.* Int J Obes, 2018. **42**(2): p. 129.

6. Trexler, E.T., A.E. Smith-Ryan, and L.E. Norton, *Metabolic adaptation to weight loss: implications for the athlete.* J Int Soc Sports Nutr, 2014. **11**(1): p. 7.

7. Coelho do Vale, R., R. Pieters, and M. Zeelenberg, *The benefits of behaving badly on occasion: Successful regulation by planned hedonic deviations.* Journal of Consumer Psychology, 2016. **26**(1): p. 17–28.

8. Bussau, V.A., et al., *Carbohydrate loading in human muscle: an improved 1 day protocol.* Eur J Appl Physiol, 2002. **87**(3): p. 290–5.

9. Loucks, A.B. and M. Verdun, *Slow restoration of LH pulsatility by refeeding in energetically disrupted women.* Am J Physiol, 1998. **275**(4 Pt 2): p. R1218–26.

10. Olson, B.R., et al., *Short-term fasting affects luteinizing hormone secretory dynamics but not reproductive function in normal-weight sedentary women.* J Clin Endocrinol Metab, 1995. **80**(4): p. 1187–93.

11. Seimon, R.V., et al., Do intermittent diets provide physiological benefits over continuous diets for weight loss? A systematic review of clinical trials. Molecular and Cellular Endocrinology, 2015. 15(418): p. 153–72.

12. Harris, L., et al., *Intermittent fasting interventions for treatment of overweight and obesity in adults: a systematic review and meta-analysis.* JBI Database of Systematic Reviews and Implementation Reports, 2018. **16**(2): p. 507–47.

13. Harvie, M., et al., *The effect of intermittent energy and carbohydrate restriction v. daily energy restriction on weight loss and metabolic disease risk markers in overweight women.* Br J Nutr, 2013. **110**(8): p. 1534–47.

14. Varady, K.A., *Intermittent versus daily calorie restriction: which diet*

regimen is more effective for weight loss? Obes Rev, 2011. **12**(7): p. e593–601.

15. Campbell, B.I., et al., *The effects of intermittent carbohydrate re-feeds vs. continuous dieting on body composition in resistance trained individuals: A flexible dieting study.* 15th International Society of Sports Nutrition (ISSN) Conference and Expo; Clearwater Beach FL, USA 2018.

16. Campbell, B.I., et al., *The effects of intermittent carbohydrate re-feeds vs. continuous dieting on resting metabolic rate in resistance trained individuals: A flexible dieting study.* 15th International Society of Sports Nutrition (ISSN) Conference and Expo; Clearwater Beach FL, USA 2018.

17. Friedman, J., P.D. Neufer, and G.L. Dohm, *Regulation of Glycogen Resynthesis Following Exercise.* Sports Med, 1991. **11**(4): p. 232–243.

18. Ballor, D.L., et al., *Resistance weight training during caloric restriction enhances lean body weight maintenance.* Am J Clin Nutr, 1988. **47**(1): p. 19–25.

19. Helms, E.R., A.A. Aragon, and P.J. Fitschen, *Evidence-based recommendations for natural bodybuilding contest preparation: nutrition and supplementation.* J Int Soc Sports Nutr, 2014. **11**(1): p. 20.

20. Schoenfeld, B.J., A.A. Aragon, and J.W. Krieger, *Effects of meal frequency on weight loss and body composition: a meta-analysis*. Nutr Rev, 2015. **73**(2): p. 69–82.

21. Stote, K.S., et al., *A controlled trial of reduced meal frequency without caloric restriction in healthy, normal-weight, middle-aged adults.* Am J Clin Nutr, 2007. **85**(4): p. 981–8.

22. Leidy, H.J., et al., *The influence of higher protein intake and greater eating frequency on appetite control in overweight and obese men*. Obesity (Silver Spring), 2010. **18**(9): p. 1725–32.

23. Arciero, P.J., et al., *Increased protein intake and meal frequency reduces abdominal fat during energy balance and energy deficit*. Obesity (Silver Spring), 2013. **21**(7): p. 1357–66.

24. Farshchi, H.R., M.A. Taylor, and I.A. Macdonald, *Regular meal frequency creates more appropriate insulin sensitivity and lipid profiles compared with irregular meal frequency in healthy lean women.* Eur J Clin Nutr, 2004. **58**(7): p. 1071–7.

25. Iwao, S., K. Mori, and Y. Sato, *Effects of meal frequency on body composition during weight control in boxers.* Scand J Med Sci Sports, 1996. **6**(5): p. 265–72.

26. Munsters, M.J. and W.H. Saris, *Effects of meal frequency on metabolic profiles and substrate partitioning in lean healthy males.* PLoS One, 2012.

7(6): p. e38632.

27. Taylor, M.A. and J.S. Garrow, *Compared with nibbling, neither gorging nor a morning fast affect short-term energy balance in obese patients in a chamber calorimeter.* Int J Obes Relat Metab Disord, 2001. 25(4): p. 519–28.

28. Verboeket-van de Venne, W.P. and K.R. Westerterp, *Influence of the feeding frequency on nutrient utilization in man: consequences for energy metabolism.* Eur J Clin Nutr, 1991. 45(3): p. 161–9.

29. Farshchi, H.R., M.A. Taylor, and I.A. Macdonald, *Decreased thermic effect of food after an irregular compared with a regular meal pattern in healthy lean women.* Int J Obes Relat Metab Disord, 2004. **28**(5): p. 653–60.

30. Aragon, A.A. and B.J. Schoenfeld, *Nutrient timing revisited: is there a post-exercise anabolic window?* J Int Soc Sports Nutr, 2013. **10**(1): p. 5.

31. Conley, M.S. and M.H. Stone, *Carbohydrate ingestion/supplementation for resistance exercise and training.* Sports Med, 1996. **21**(1): p. 7–17.

32. Ha , G.G., et al., Carbohydrate supplementation attenuates muscle glycogen loss during acute bouts of resistance exercise. Int J Sport Nutr Exerc Metab, 2000. **10**(3): p. 326–39.

33. Ha , G.G., et al., Carbohydrate supplementation and resistance training. J Strength Cond Res, 2003. **17**(1): p. 187–96.

34. Roy, B.D. and M.A. Tarnopolsky, *Influence of differing macronutrient intakes on muscle glycogen resynthesis after resistance exercise.* J Appl Physiol, 1998. **84**(3): p. 890–6.

35. Snyder, A.C., et al., *Carbohydrate consumption prior to repeated bouts of high- intensity exercise.* European Journal of Applied Physiology and Occupational Physiology, 1993. **66**(2): p. 141–5.

36. Tsintzas, K., et al., *Carbohydrate ingestion prior to exercise augments the exercise-induced activation of the pyruvate dehydrogenase complex in human skeletal muscle.* Exp Physiol, 2000. **85**(5): p. 581–6.

37. Kulik, J.R., et al., *Supplemental carbohydrate ingestion does not improve performance of high-intensity resistance exercise.* J Strength Cond Res, 2008. **22**(4): p. 1101–7.

38. Miller, S.L. and R.R. Wolfe, *Physical exercise as a modulator of adaptation to low and high carbohydrate and low and high fat intakes.* Eur J Clin Nutr, 1999. **53 Suppl 1**: p. S112–9.

39. Dudgeon, W.D., E.P. Kelley, and T.P. Scheett, *Effect of Whey Protein in Conjunction with a Caloric-Restricted Diet and Resistance Training.* J

Strength Cond Res, 2015. **[Epub ahead of print]**.

40. Pennings, B., et al., *Minced beef is more rapidly digested and absorbed than beef steak, resulting in greater postprandial protein retention in older men.* American J Clin Nutr, 2013. **98**(1): p. 121-128.

41. Schoenfeld, B.J., A.A. Aragon, and J.W. Krieger, *The effect of protein timing on muscle strength and hypertrophy: a meta-analysis.* J Int Soc Sports Nutr, 2013. **10**(1): p. 53.

References

1. Albert, B.B., et al., *Fish oil supplements in New Zealand are highly oxidised and do not meet label content of n-3 PUFA.* Sci. Rep., 2015. **5**.

2. Kleiner, A.C., D.P. Cladis, and C.R. Santerre, *A comparison of actual versus stated label amounts of EPA and DHA in commercial omega-3 dietary supplements in the United States.* J Sci Food Agric, 2015. **95**(6): p. 1260–7.

3. Haller, C.A., et al., *Concentrations of ephedra alkaloids and caffeine in commercial dietary supplements.* J Anal Toxicol, 2004. **28**(3): p. 145–51.

4. Geyer, H., et al., *Nutritional supplements cross-contaminated and faked with doping substances.* J Mass Spectrom, 2008. 43(7): p. 892–902.

5. Cohen, P.A., et al., Presence of banned drugs in dietary supplements following FDA recalls. JAMA, 2014. **312**(16): p. 1691–1693.

6. Rehman, S., et al., *Calcium supplements: an additional source of lead contamination.* Biol Trace Elem Res, 2011. **143**(1): p. 178–87.

7. Maughan, R.J., *Contamination of dietary supplements and positive drug tests in sport.* J Sports Sci, 2005. **23**(9): p. 883–9.

8. Topo, E., et al., *The role and molecular mechanism of D-aspartic acid in the release and synthesis of LH and testosterone in humans and rats.* Reprod Biol Endocrinol, 2009. **7**: p. 120.

9. Willoughby, D.S. and B. Leutholtz, *D-aspartic acid supplementation combined with 28 days of heavy resistance training has no effect on body composition, muscle strength, and serum hormones associated with the hypothalamo-pituitary-gonadal axis in resistance-trained men.* Nutr Res, 2013. **33**(10): p. 803–10.

10. Melville, G.W., J.C. Siegler, and P.W. Marshall, *Three and six grams supplementation of d-aspartic acid in resistance trained men.* J Int Soc Sports Nutr, 2015. **12**: p. 15.

11. Alexander, D.D., et al., *A Systematic Review of Multivitamin–Multimineral Use and Cardiovascular Disease and Cancer Incidence and Total Mortality.* J Am Coll Nutr, 2013. **32**(5): p. 339–354.

12. Calton, J., *Prevalence of micronutrient deficiency in popular diet plans.* J Int Soc Sports Nutr, 2010. **7**(1): p. 24.

13. Lorente-Cebrian, S., et al., *Role of omega-3 fatty acids in obesity, metabolic syndrome, and cardiovascular diseases: a review of the evidence.* J Physiol Biochem, 2013. **69**(3): p. 633–51.

14. Mocking, R.J., et al., *Meta-analysis and meta-regression of omega-3 polyunsaturated fatty acid supplementation for major depressive disorder.*

Transl Psychiatry, 2016. **6**: p. e756.

15. Maki, K.C., et al., *Use of supplemental long-chain omega-3 fatty acids and risk for cardiac death: An updated meta-analysis and review of research gaps.* J Clin Lipidol, 2017.
16. Miller, P.E., M. Van Elswyk, and D.D. Alexander, *Long-Chain Omega-3 Fatty Acids Eicosapentaenoic Acid and Docosahexaenoic Acid and Blood Pressure: A Meta-Analysis of Randomized Controlled Trials.* Am J Hypertens, 2014. **27**(7): p. 885–96.
17. Du, S., et al., *Does Fish Oil Have an Anti-Obesity Effect in Overweight/Obese Adults? A Meta-Analysis of Randomized Controlled Trials.* PLoS ONE, 2015. **10**(11): p. e0142652.
18. Di Girolamo, F.G., et al., *Omega-3 fatty acids and protein metabolism: enhancement of anabolic interventions for sarcopenia.* Curr Opin Clin Nutr Metab Care, 2014. **17**(2): p. 145–150.
19. McGlory, C., et al., *Fish oil supplementation suppresses resistance exercise and feeding-induced increases in anabolic signaling without affecting myofibrillar protein synthesis in young men.* Physiol Rep, 2016. **4**(6): p. e12715.
20. Lewis, E.J.H., et al., *21 days of mammalian omega-3 fatty acid supplementation improves aspects of neuromuscular function and performance in male athletes compared to olive oil placebo.* J Int Soc Sports Nutr, 2015. **12**(1): p. 28.
21. Lembke, P., et al., *Influence of omega-3 (n3) index on performance and wellbeing in young adults after heavy eccentric exercise.* J Sports Sci Med, 2014. **13**(1): p. 151.
22. Crestani, D.M., et al., *Chronic supplementation of omega-3 can improve body composition and maximal strength, but does not change the resistance to neuromuscular fatigue.* Sport Sci Health, 2017. **13**(2): p. 259–65.
23. Bendik, I., et al., *Vitamin D: a critical and essential micronutrient for human health.* Front Physiol, 2014. **5**: p. 248.
24. Holick, M.F., et al., *Evaluation, treatment, and prevention of vitamin D deficiency: an Endocrine Society clinical practice guideline.* J Clin Endocrinol Metab, 2011. **96**(7): p. 1911–30.
25. Jung, H.C., et al., *Correcting Vitamin D Insufficiency Improves Some, But Not All Aspects of Physical Performance during Winter Training in Taekwondo Athletes.* Int J Sport Nutr Exerc Metab, 2018 **[Epub ahead of print]**: p. 1–25.

26. Farrokhyar, F., et al., *Prevalence of vitamin D inadequacy in athletes: a systematic review and meta-analysis.* Sports Med, 2015. **45**(3): p. 365–78.

27. He, C.S., et al., *The effect of 14 weeks of vitamin D3 supplementation on antimicrobial peptides and proteins in athletes.* J Sports Sci, 2016. **34**(1): p. 67–74.

28. He, C.S., et al., *Influence of vitamin D status on respiratory infection incidence and immune function during 4 months of winter training in endurance sport athletes.* Exerc Immunol Rev, 2013. **19**: p. 86–101.

29. Wyon, M.A., et al., *Acute Effects of Vitamin D3 Supplementation on Muscle Strength in Judoka Athletes: A Randomized Placebo-Controlled, Double-Blind Trial.* Clin J Sport Med, 2016. **26**(4): p. 279–84.

30. Tomlinson, P.B., et al.,. *Effects of vitamin D supplementation on upper and lower body muscle strength levels in healthy individuals. A systematic review with meta-analysis.* J Sci Med Sport, 2015. **18**(5): p. 575–80.

31. Farrokhyar, F., et al., *Effects of Vitamin D Supplementation on Serum 25-Hydroxyvitamin D Concentrations and Physical Performance in Athletes: A Systematic Review and Meta-analysis of Randomized Controlled Trials.* Sports Med, 2017. **47**(11): p. 2323–39.

32. Godar, D.E., R.J. Landry, and A.D. Lucas, *Increased UVA exposures and decreased cutaneous Vitamin D(3) levels may be responsible for the increasing incidence of melanoma.* Med Hypotheses, 2009. **72**(4): p. 434–43.

33. Owens, D.J., R. Allison, and G.L. Close, *Vitamin D and the Athlete: Current Perspectives and New Challenges.* Sports Med, 2018. **48(Suppl 1**): p. 3–16.

34. Buford, T.W., et al., *International Society of Sports Nutrition position stand: creatine supplementation and exercise.* J Int Soc Sports Nutr, 2007. **4**: p. 6.

35. Spillane, M., et al., *The effects of creatine ethyl ester supplementation combined with heavy resistance training on body composition, muscle performance, and serum and muscle creatine levels.* J Int Soc Sports Nutr, 2009. **6**: p. 6.

36. Jagim, A.R., et al., *A buffered form of creatine does not promote greater changes in muscle creatine content, body composition, or training adaptations than creatine monohydrate.* J Int Soc Sports Nutr, 2012. **9**(1): p. 43.

37. Mora, L., M.A. Sentandreu, and F. Toldra, *Effect of cooking conditions on creatinine formation in cooked ham.* J Agric Food Chem, 2008. **56**(23): p. 11279–84.

38. Childs, E. and H. de Wit, *Subjective, Behavioral, and physiological effects of acute caffeine in light, nondependent caffeine users.* Psychopharmacology (Berl), 2006. **185**(4): p. 514–23.

39. Astorino, T.A. and D.W. Roberson, *Efficacy of acute caffeine ingestion for short- term high-intensity exercise performance: a systematic review.* J Strength Cond Res, 2010. **24**(1): p. 257–65.

40. Panek-Shirley, L.M., et al., *Caffeine Transiently Affects Food Intake at Breakfast*. J Acad Nutr Diet, 2018 **[Epub ahead of print].**

41. Schubert, M.M., et al., *Caffeine, coffee, and appetite control: a review.* Int J Food Sci Nutr, 2017. **68**(8): p. 901–12.

42. Gavrieli, A., et al., *Effect of different amounts of coffee on dietary intake and appetite of normal-weight and overweight/obese individuals.* Obesity (Silver Spring), 2013. **21**(6): p. 1127–32.

43. Schubert, M.M., et al., *Coffee for morning hunger pangs. An examination of coffee and caffeine on appetite, gastric emptying, and energy intake.* Appetite, 2014. **83**: p. 317-26.

44. Tremblay, A., et al., *Caffeine reduces spontaneous energy intake in men but not in women.* Nutrition Research, 1988. **8**(5): p. 553–8.

45. Gavrieli, A., et al., *Caffeinated coffee does not acutely affect energy intake, appetite, or inflammation but prevents serum cortisol concentrations from falling in healthy men.* J Nutr, 2011. **141**(4): p. 703–7.

46. Astrup, A., et al., *The effect and safety of an ephedrine/caffeine compound compared to ephedrine, caffeine and placebo in obese subjects on an energy restricted diet. A double-blind trial*. Int J Obes Relat Metab Disord, 1992. **16**(4): p. 269–77.

47. Gliottoni, R.C., et al., *Effect of caffeine on quadriceps muscle pain during acute cycling exercise in low versus high caffeine consumers.* Int J Sport Nutr Exerc Metab, 2009. **19**(2): p. 150–61.

48. Tarnopolsky, M. and C. Cupido, *Caffeine potentiates low frequency skeletal muscle force in habitual and nonhabitual caffeine consumers.* J Appl Physiol, 2000. **89**(5): p. 1719–24.

49. Bell, D.G. and T.M. McLellan, *Exercise endurance 1, 3, and 6 h after caffeine ingestion in caffeine users and nonusers.* J Appl Physiol, 2002. **93**(4): p. 1227–34.

50. Beaumont, R., et al., *Chronic ingestion of a low dose of caffeine induces tolerance to the performance benefits of caffeine.* J Sports Sci, 2017. **35**(19): p. 1920–7.

51. Gonçalves, L.d.S., et al., *Dispelling the myth that habitual caffeine consumption influences the performance response to acute caffeine supplementation.* J Appl Physiol, 2017. **123**(1): p. 213–20.

52. Hobson, R.M., et al., *Effects of beta-alanine supplementation on exercise performance: a meta-analysis.* Amino Acids, 2012. **43**(1): p. 25–37.

53. Saunders, B., et al., *β-alanine supplementation to improve exercise capacity and performance: a systematic review and meta-analysis.* Br J Sports Med, 2017. **51**(8): p. 658–69.

54. Schoenfeld, B.J., et al., *Effects of different volume-equated resistance training loading strategies on muscular adaptations in well-trained men.* J Strength Cond Res, 2014. **28**(10): p. 2909–18.

55. Schwedhelm, E., et al., *Pharmacokinetic and pharmacodynamic properties of oral L-citrulline and L-arginine: impact on nitric oxide metabolism*. Br J Clin Pharmacol, 2008. **65**(1): p. 51–9.

56. Callis, A., et al., *Activity of citrulline malate on acid-base balance and blood ammonia and amino acid levels. Study in the animal and in man.* Arzneimittelforschung, 1991. **41**(6): p. 660–3.

57. Bendahan, D., et al., *Citrulline/malate promotes aerobic energy production in human exercising muscle.* Br J Sports Med, 2002. **36**(4): p. 282–9.

58. Perez-Guisado, J. and P.M. Jakeman, *Citrulline malate enhances athletic anaerobic performance and relieves muscle soreness.* J Strength Cond Res, 2010. **24**(5): p. 1215–22.

59. Wax, B., A.N. Kavazis, and W. Luckett, *Effects of Supplemental Citrulline-Malate Ingestion on Blood Lactate, Cardiovascular Dynamics, and Resistance Exercise Performance in Trained Males.* J Diet Suppl, 2016. **13**(3): p. 269–82.

60. Glenn, J.M., et al., *Acute citrulline malate supplementation improves upper- and lower-body submaximal weightlifting exercise performance in resistance-trained females.* Eur J Nutr, 2017. **56**(2): p. 775–84.

61. Glenn, J.M., et al., *Acute citrulline-malate supplementation improves maximal strength and anaerobic power in female, masters athletes tennis players*. Eur J Sport Sci, 2016. **16**(8): p. 1095–103.

62. Wax, B., et al., *Effects of supplemental citrulline malate ingestion during repeated bouts of lower-body exercise in advanced weightlifters.* J Strength Cond Res, 2015. **29**(3): p. 786–92.

63. Gonzalez, A.M., et al., *Acute effect of citrulline malate supplementation on upper-body resistance exercise performance in recreationally resistance-trained men.* J Strength Cond Res, 2017. **[Epub ahead of print]**.

64. Farney, T.M., et al., *The Effect of Citrulline Malate Supplementation On Muscle Fatigue Among Healthy Participants.* J Strength Cond Res, 2017. **[Epub ahead of print]**.

65. Hwang, P., et al., *Eight weeks of resistance training in conjunction with glutathione and L-Citrulline supplementation increases lean mass and has no adverse effects on blood clinical safety markers in resistance-trained males.* J Int Soc Sports Nutr, 2018. **15**(1): p. 30.

66. Chappell, A.J., et al., *Citrulline malate supplementation does not improve German Volume Training performance or reduce muscle soreness in moderately trained males and females.* J Int Soc Sports Nutr, 2018. **15**(1): p. 42.

67. da Silva, D.K., et al., *Citrulline malate does not improve muscle recovery after resistance exercise in untrained young adult men.* Nutrients, 2017. **9**(10): p. 1132.

68. McRae, M.P., *Therapeutic benefits of glutamine: An umbrella review of meta-analyses.* Biom Rep, 2017. **6**(5): p. 576–84.

69. Helms, E.R., A.A. Aragon, and P.J. Fitschen, *Evidence-based recommendations for natural bodybuilding contest preparation: nutrition and supplementation.* J Int Soc Sports Nutr, 2014. **11**(1): p. 20.

70. Ahmadi, A.R., Rayyani, E., Bahreini, M., Mansoori, A., *The effect of glutamine supplementation on athletic performance, body composition, and immune function: A systematic review and a meta-analysis of clinical trials.* Clin Nutr, 2018. **[Epub ahead of print]**.

71. Stoppani, J., Scheett, T., Pena, J., Rudolph, C., Charlebois, D., *Consuming a supplement containing branched-chain amino acids during a resistance-training program increases lean mass, muscle strength, and fat loss.* J Int Soc Sports Nutr, 2009. **6(Suppl 1)**: p. P1.

72. Dudgeon, W.D., Kelley, E.P., Scheett, T.P., *In a single-blind, matched group design: branched-chain amino acid supplementation and resistance training maintains lean body mass during a caloric restricted diet.* J Int Soc Sports Nutr, 2016. **13**(1): p. 1.

73. Dieter, B.P., Schoenfeld, B.J., Aragon, A.A., *The data do not seem to support a benefit to BCAA supplementation during periods of caloric restriction*. J Int Soc Sports Nutr, 2016. **13**(1): p. 21.

74. Rahimi, M.H., Shab-Bidar, S., Mollahosseini, M., Djafarian, K., *Branched-chain amino acid supplementation and exercise-induced muscle damage in exercise recovery: A meta-analysis of randomized clinical trials.* Nutrition, 2017. **42**: p. 30–6.

75. Chang, C.K., et al., Branched-chain amino acids and arginine improve performance in two consecutive days of simulated handball games in male and female athletes: a randomized trial. PLoS One, 2015. **10**(3): p. e0121866.

76. Jang, T.R., et al., *Effects of carbohydrate, branched-chain amino acids, and arginine in recovery period on the subsequent performance in wrestlers.* J Int Soc Sports Nutr, 2011. **8**: p. 21.

77. Mourier, A., et al., *Combined effects of caloric restriction and branched-chain amino acid supplementation on body composition and exercise performance in elite wrestlers.* Int J Sports Med, 1997. **18**(1): p. 47–55.

78. Gualano, A.B., et al., *Branched-chain amino acids supplementation enhances exercise capacity and lipid oxidation during endurance exercise after muscle glycogen depletion.* J Sports Med Phys Fitness, 2011. **51**(1): p. 82–8.

79. Greer, B.K., et al., *Branched-chain amino acid supplementation lowers perceived exertion but does not affect performance in untrained males.* J Strength Cond Res, 2011. **25**(2): p. 539–44.

80. Wolfe RR. *Branched-chain amino acids and muscle protein synthesis in humans: myth or reality?* J Int Soc Sports Nutr, 2017. **14**(1): p. 30.

81. Nissen, S., et al., *Effect of leucine metabolite β-hydroxy-β-methylbutyrate on muscle metabolism during resistance-exercise training.* J Appl Physiol, 1996. **81**(5): p. 2095–2104.

82. Nissen, S.L. and R.L. Sharp, *Effect of dietary supplements on lean mass and strength gains with resistance exercise: a meta-analysis.* J Appl Physiol (1985), 2003. **94**(2): p. 651–9.

83. Rowlands, D.S. and J.S. Thomson, *Effects of beta-hydroxy-beta-methylbutyrate supplementation during resistance training on strength, body composition, and muscle damage in trained and untrained young men: a meta-analysis.* J Strength Cond Res, 2009. **23**(3): p. 836–46.

84. Fitschen, P.J., et al., *Efficacy of beta-hydroxy-beta-methylbutyrate supplementation in elderly and clinical populations.* Nutrition, 2013. **29**(1): p. 29–36.

85. Fuller, J.C., Jr., et al., *Free acid gel form of beta-hydroxy-beta-methylbutyrate (HMB) improves HMB clearance from plasma in human subjects compared with the calcium HMB salt.* Br J Nutr, 2011. **105**(3): p. 367–72.

86. Hyde, P.N., Kendall, K.L., LaFountain, R.A., *Interaction of beta-hydroxy-beta-methylbutyrate free acid and adenosine triphosphate on muscle*

mass, strength, and power in resistance-trained individuals. J Strength Cond Res, 2016. **30**(10): p. e10–11.

87. Phillips, S.M., et al., *Changes in Body Composition and Performance With Supplemental HMB-FA+ATP.* J Strength Cond Res, 2017. **31**(5): p. e71–e72.

88. Gentles, J.A., S.M. Phillips, *Discrepancies in publications related to HMB-FA and ATP supplementation.* Nutr Metab (Lond), 2017. **14**: p. 42.

89. Correia, A.L.M., et al., *Pre-exercise beta-hydroxy-beta-methylbutyrate free-acid supplementation improves work capacity recovery: a randomized, double-blinded, placebo-controlled study.* Appl Physiol Nutr Metab, 2018. **43**(7):691–6.

90. Sanchez-Martinez, J., et al., *Effects of beta-hydroxy-beta-methylbutyrate supplementation on strength and body composition in trained and competitive athletes: A meta-analysis of randomized controlled trials.* J Sci Med Sport, 2018. **21**(7):727–35.

References

1. Hind, K., et al., *Interpretation of Dual Energy X-Ray Absorptiometry-Derived Body Composition Change in Athletes: a Review and Recommendations for Best Practice.* J Clin Densitom, 2018. **21**(3) p. 429–43.

2. Clasey, J.L., et al., *Validity of methods of body composition assessment in young and older men and women.* J Appl Physiol, 1999. 86(5): p. 1728–38.

3. Helms, E.R., et al., *High-protein, low-fat, short-term diet results in less stress and fatigue than moderate-protein moderate-fat diet during weight loss in male weightlifters: a pilot study*. Int J Sport Nutr Exerc Metab, 2015. **25**(2): p. 163–70.

4. Perini, T.A., et al., *Technical error of measurement in anthropometry.* Rev Bras Med Esporte, 2005. **11**(1): p. 81–5.

References

1. Helms, E.R., A.A. Aragon, and P.J. Fitschen, *Evidence-based recommendations for natural bodybuilding contest preparation: nutrition and supplementation.* J Int Soc Sports Nutr, 2014. **11**: p. 20.
2. Fairchild, T.J., et. al., *Rapid carbohydrate loading after a short bout of near maximal-intensity exercise.* Med Sci Sports Exerc, 2002. **34**(6): p. 980–6.
3. Olsson, K.E., Saltin, B., *Variation in total body water with muscle glycogen changes in man.* Acta Physiol Scand, 1970. **80**(1): p. 11–8.
4. Balon TW et. al., *Effects of carbohydrate loading and weight-lifting on muscle girth.* Int J Sport Nutr, 1992. **2**(4): p. 328–34.
5. Bamman, M.M., et. al., *Changes in body composition, diet, and strength of bodybuilders during the 12 weeks prior to competition.* J Sports Med Phys Fitness, 1993. **33**(4): p. 383–91.
6. Sherman, W.M., et. al., *Effect of exercise-diet manipulation on muscle glycogen and its subsequent utilization during performance.* Int J Sports Med, 1981. **2**(2): p. 114–8.
7. Goforth, H.W. Jr, et. al., *Persistence of supercompensated muscle glycogen in trained subjects after carbohydrate loading.* J Appl Physiol (1985), 1997. **82**(1): p. 342–7.
8. Skou, J.C., *Nobel Lecture. The identification of the sodium pump.* Biosci Rep. 1998. **18**(4): p. 155–69.
9. Costill, D.L., et. al., *Muscle water and electrolytes following varied levels of dehydration in man.* J Appl Physiol, 1976. **40**(1): p. 6–11.
10. Rossow, L.M., et. al., *Natural bodybuilding competition preparation and recovery: a 12-month case study.* Int J Sports Physiol Perform, 2013. **8**(5): p. 582–92.
11. Stachenfeld, N.S., *Acute effects of sodium ingestion on thirst and cardiovascular function.* Curr Sports Med Rep. 2008. **7(4 Suppl)**: p. S7–13.
12. Crane, R.K., Miller, D., Bihler, I., *"The restrictions on possible mechanisms of intestinal transport of sugars".* In: Membrane Transport and Metabolism. Proceedings of a Symposium held in Prague, August 22–27, 1960. Edited by A. Kleinzeller and A. Kotyk. Czech Academy of Sciences, Prague, 1961, p. 439–49.
13. Chappell, A., Simper, T., *Nutritional Peak Week and Competition Day Strategies of Competitive Natural Bodybuilders.* Sports, 2018. **6**(4): p. 126.
14. Kerksick, C.M., et al., *International society of sports nutrition position stand: nutrient timing.* J Int Soc Sports Nutr. 2017. **14**(1): p. 33.

15. Boisseau, N., *Consequences of sport-imposed weight restriction in childhood.* Annales Nestlé (English ed.). 2006. **64**(2): p. 77–84.

16. Forbes, G.B., *Body fat content influences the body composition response to nutrition and exercise.* Ann N Y Acad Sci, 2000. **904**(1): p. 359–65.

17. Kondo, M., et al., *Upper limit of fat-free mass in humans: A study on Japanese Sumo wrestlers.* Am J Hum Biol, 1994. **6**(5): p. 613–18.

18. Buford, T.W., et al., *The effect of a competitive wrestling season on body weight, hydration, and muscular performance in collegiate wrestlers.* J Strength Cond Res, 2006. **20**(3): p. 689–92.

19. Garthe, I., et al., *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**(2): p. 97–104.

20. Brechue, W.F., Abe, T., The role of FFM accumulation and skeletal muscle architecture in powerlifting performance. Eur J Appl Physiol, 2002. **86**(4): p. 327–36.

21. Reale, R., Slater, G., Burke, L.M., *Individualised dietary strategies for Olympic combat sports: Acute weight loss, recovery and competition nutrition.* Eur J Sport Sci, 2017. **17**(6): p. 727–40.

22. Fogelholm, M., *Effects of body weight reduction on sports performance.* Sports Med, 1994. **18**(4): p. 249–67.

23. Reale, R., et al., *The Effect of Water Loading on Acute Weight Loss Following Fluid Restriction in Combat Sports Athletes.* Int J Sport Nutr Exerc Metab, 2018. **3**: p. 1–9.

References

1. Rosenbaum, M. and R.L. Leibel, *Adaptive thermogenesis in humans.* Int J Obes (Lond), 2010. **34 Suppl 1**: p. S47–55.

2. Rosenbaum, M., et al., *Long-term persistence of adaptive thermogenesis in subjects who have maintained a reduced body weight*. Am J Clin Nutr, 2008. **88**(4): p. 906–12.

3. Halliday, T.M., J.P. Loenneke, and B.M. Davy, *Dietary Intake, Body Composition, and Menstrual Cycle Changes during Competition Preparation and Recovery in a Drug-Free Figure Competitor: A Case Study.* Nutrients, 2016. **8**(11): p. 740.

4. Rossow, L.M., et al., *Natural bodybuilding competition preparation and recovery: a 12-month case study.* Int J Sports Physiol Perform, 2013. **8**(5): p. 582–92.

5. Hulmi, J.J., et al., *The Effects of Intensive Weight Reduction on Body Composition and Serum Hormones in Female Fitness Competitors.* Front Physiol, 2017. **10**(7): p. 689.

6. Kistler, B.M., et al., *Case Study: Natural Bodybuilding Contest Preparation.* Int J Sport Nutr Exerc Metab, 2014. **24**(6): p. 694-700.

7. Robinson, S., et al., *A nutrition and conditioning intervention for natural bodybuilding contest preparation: case study.* J Int Soc Sports Nutr, 2015. **12**(1): p. 20.

8. Rohrig, B.J., et al., *Psychophysiological Tracking of a Female Physique Competitor through Competition Preparation.* Int J Exerc Sci, 2017. **10**(2): p. 301–11.

9. Helms, E.R., A.A. Aragon, and P.J. Fitschen, *Evidence-based recommendations for natural bodybuilding contest preparation: nutrition and supplementation*. J Int Soc Sports Nutr, 2014. **11**: p. 20.

10. Petrizzo, J., et al., *Case Study: The Effect of 32 Weeks of Figure-Contest Preparation on a Self-Proclaimed Drug-free Female's Lean Body and Bone Mass.* Int J Sport Nutr Exerc Metab, 2017: p. 1–21.

11. Maestu, J., et al., *Anabolic and catabolic hormones and energy balance of the male bodybuilders during the preparation for the competition.* J Strength Cond Res, 2010. **24**(4): p. 1074–81.

References

1. Elia, M., R.J. Stubbs, and C.J. Henry, *Differences in fat, carbohydrate, and protein metabolism between lean and obese subjects undergoing total starvation.* Obes Res, 1999. **7**(6): p. 597–604.

2. Maestu, J., et al., *Anabolic and catabolic hormones and energy balance of the male bodybuilders during the preparation for the competition.* J Strength Cond Res, 2010. **24**(4): p. 1074–81.

3. Suryanarayana, B.V., et al., *Pituitary-gonadal axis during prolonged total starvation in obese men.* Am J Clin Nutr, 1969. **22**(6): p. 767–70.

4. Forbes, G.B., *Body fat content influences the body composition response to nutrition and exercise.* Ann N Y Acad Sci, 2000. **904**(1): p. 359–65.

5. Roy, B.D. and M.A. Tarnopolsky, *Influence of differing macronutrient intakes on muscle glycogen resynthesis after resistance exercise.* J Appl Physiol, 1998. **84**(3): p. 890–6.

6. Jacobs, I., P. Kaiser, and P. Tesch, *Muscle strength and fatigue after selective glycogen depletion in human skeletal muscle fibers.* Eur J Appl Physiol Occup Physiol, 1981. **46**(1): p. 47–53.

7. Essen-Gustavsson, B. and P.A. Tesch, *Glycogen and triglyceride utilization in relation to muscle metabolic characteristics in men performing heavy-resistance exercise.* Eur J Appl Physiol Occup Physiol, 1990. **61**(1-2): p. 5–10.

8. Boesch, C., et al., *Effect of diet on the replenishment of intramyocellular lipids after exercise.* Eur J Nutr, 2000. **39**(6): p. 244.

9. Mero, A.A., et al., *Moderate energy restriction with high protein diet results in healthier outcome in women*. J Int Soc Sports Nutr, 2010. **7**(1): p. 4.

10. Garthe, I., et al., *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**(2): p. 97–104.

11. Helms, E.R., et al., *High-protein, low-fat, short-term diet results in less stress and fatigue than moderate-protein moderate-fat diet during weight loss in male weightlifters: a pilot study.* Int J Sport Nutr Exerc Metab, 2015. **25**(2): p. 163–70.

12. Rossow, L.M., et al., *Natural bodybuilding competition preparation and recovery: a 12-month case study.* Int J Sports Physiol Perform, 2013. **8**(5): p. 582–92.

13. Plateau, C.R., Petrie, T.A., Papathomas, A., *Learning to eat again: Intuitive eating practices among retired female collegiate athletes.* Eating Disorders,

2017. **25**(1):92–8.

14. Ogden, J., Whyman, C., *The effect of repeated weighing on psychological state.* Eur Eat Disord Rev, 1997. **5**(2): p. 121–30.

15. Levinson, C.A., Fewell, L., Brosof, L.C., *My Fitness Pal calorie tracker usage in the eating disorders,* Eat Behav. 2017. **18**(27): p. 14–6.

16. Helms, E.R., A.A. Aragon, and P.J. Fitschen, *Evidence-based recommendations for natural bodybuilding contest preparation: nutrition and supplementation.* J Int Soc Sports Nutr, 2014. **11**: p. 20.

17. Sundgot-Borgen, J., Garthe, I., *Elite athletes in aesthetic and Olympic weight-class sports and the challenge of body weight and body compositions*. J Sports Sci, 2011. **1(29 sup1**): p. S101–14.

18. Fair JD. Mr. America: The tragic history of a bodybuilding icon. University of Texas Press; 2015 Jan 5.

19. Strother, E., Lemberg, R., Stanford, S.C., Turberville, D., *Eating disorders in men: underdiagnosed, undertreated, and misunderstood.* Eating Disorders, 2012. **20**(5):346–55.

20. Robinson L, et al., *Idealised media images: The effect of fitspiration imagery on body satisfaction and exercise behaviour.* Body Image, 2017. **1**(22): p. 65–71.

21. Westenhoefer, J., Von Falck, B., Stellfeldt, A., Fintelmann, S., *Behavioural correlates of successful weight reduction over 3 y. Results from the Lean Habits Study.* Int J Obes Relat Metab Disord, 2004. **28**(2): p. 334.

22. Oldham-Cooper, R.E., et al., *Playing a computer game during lunch affects fullness, memory for lunch, and later snack intake.* Am J Clin Nutr, 2011. **93**(2): p. 308–13.

23. Daniels, M.C., Popkin B.M., *Impact of water intake on energy intake and weight status: a systematic review.* Nutr Rev, 2010. **68**(9): p. 505–21.

24. Roberts, A., *The safety and regulatory process for low calorie sweeteners in the United States.* Physiol Behav, 2016. **164**(Pt B): p. 439-44.

25. Miller, P.E., Perez, V., *Low-calorie sweeteners and body weight and composition: a meta-analysis of randomized controlled trials and prospective cohort studies.* Am J Clin Nutr, 2014. **100**(3):765–77.

26. Peters, J.C., et al., *The effects of water and non-nutritive sweetened beverages on weight loss and weight maintenance: a randomized clinical trial.* Obesity, 2016. **24**(2): p.297–304.

27. Mytton, O.T., et al., *Systematic review and meta-analysis of the effect of increased vegetable and fruit consumption on body weight and energy*

intake. BMC Public Health, 2014. **14**(1): p. 886.

28. Stote, K.S., et al., *A controlled trial of reduced meal frequency without caloric restriction in healthy, normal-weight, middle-aged adults.* Am J Clin Nutr, 2007. **85**(4): p. 981–8.

29. Leidy, H.J., et al., *The influence of higher protein intake and greater eating frequency on appetite control in overweight and obese men.* Obesity (Silver Spring), 2010. **18**(9): p. 1725–32.

30. Borvornparadorn, M., et al., *Increased chewing reduces energy intake, but not postprandial glucose and insulin, in healthy weight and overweight young adults*. Nutr Diet, 2018. **[Epub ahead of print]**.

31. Forman, E.M., et al., *Acceptance-based versus standard behavioral treatment for obesity: Results from the mind your health randomized controlled trial.* Obesity, 2016. **24**(10): p. 2050–6.

32. Monteyne, A., et al., *Whey protein consumption after resistance exercise reduces energy intake at a post-exercise meal.* Eur J Nutr, 2018. **57**(2): p. 585–92.

33. Bhutani, S., Schoeller, D.A., Walsh, M.C., McWilliams, C., F*requency of eating out at both fast-food and sit-down restaurants was associated with high body mass index in non-large metropolitan communities in midwest.* Am J Health Promot, 2018. **32**(1): p. 75–83.

34. Poelman, M.P., et al., *Behavioural strategies to control the amount of food selected and consumed.* Appetite, 2014. **1**(72): p. 156–65.

35. Zimmerman, R.S. and C. Connor, *Health promotion in context: the effects of significant others on health behavior change.* Health Educ Q, 1989. **16**(1): p. 57–75.

36. King, K.A., J.L. Tergerson, and B.R. Wilson, *Effect of social support on adolescents' perceptions of and engagement in physical activity.* J Phys Act Health, 2008. **5**(3): p. 374–84.

37. Wallace, L.S., et al., *Characteristics of exercise behavior among college students: application of social cognitive theory to predicting stage of change.* Prev Med, 2000. **31**(5): p. 494–505.

38. Wallace, L.S. and J. Buckworth, *Longitudinal shifts in exercise stages of change in college students.* J Sports Med Phys Fitness, 2003. **43**(2): p. 209–12.

39. Petosa, R.L., R. Suminski, and B. Hortz, *Predicting vigorous physical activity using social cognitive theory.* Am J Health Behav, 2003. **27**(4): p. 301–10.