

# Whey Protein

## The Protein for Optimum Health and Enhanced Performance

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Written Exclusively for the Whey Protein Institute

Not all proteins are the same in terms of what they contribute to your health and performance. Research shows that high quality whey proteins provide an array of unique benefits to athletes and active people.

Intense or prolonged exercise is now viewed by scientists as a metabolic stress.<sup>11</sup> It taxes the immune system, leaving the athlete predisposed to frequent illness and infections.<sup>11-15</sup> Whey proteins amino acid profile is tailor-made to optimize recovery and speed the results desired from exercise training, as well as promote healthy immune function.

Whey protein is a rich, economical source of naturally occurring branch chain amino acids (BCAAs). These amino acids are used exclusively to stimulate the recovery (protein synthesis) process and manufacture glutamine - the primary fuel that powers immune function.<sup>13,14</sup>

Quality whey protein supplements also contain a high dose of leucine (at least 10gms/100gms),<sup>16</sup> an amino acid that is tremendously important to athletes. Leucine plays a key role in igniting the transcription pathways that accelerate muscle protein synthesis.<sup>17</sup> An abundant supply of leucine to muscle provides greater stimulation of protein synthesis after exercise.<sup>18</sup> This promotes more efficient recovery at the cellular level and speeds the adaptation process of exercise training.

High quality whey protein supplements are a rare, rich source of bioavailable cysteine, the rate-limiting amino acid in glutathione formation.<sup>19</sup> Glutathione is the body's premier antioxidant that defends cells against free radical damage, toxins, infection, UV exposure and cancer-forming compounds. Low glutathione levels are related to many age-related diseases such as cancer, Alzheimer's and

Parkinson's.<sup>19-22</sup> For athletes, low glutathione levels also correlate with poor exercise performance.<sup>21</sup>

High quality whey protein supplements are shown in research to increase cell glutathione concentrations, enhance athletic performance and improve body composition (build more lean tissue and help lose the fat).<sup>22-27</sup>



In terms of digestion, high quality whey proteins are absorbed faster and in greater amounts than other proteins<sup>1-3</sup> and deliver more nitrogen and protein peptides to tissues.<sup>4-7</sup> Whey protein's

amino acid profile is most similar to human muscle. An abundant supply of the right material promotes better recovery from exercise and a greater anabolic effect from resistance training.<sup>8-10</sup>

## Supplementation Gets Results!

Recent research demonstrates that no other protein builds muscle and strength like pure whey protein isolates. Supplementation with one particular whey protein product, VP2 100% Hydrolyzed Whey Isolate™, was shown to produce greater contractile force in muscle taken from rodents and increased aerobic energy production rates, all without exercise.<sup>29,30</sup> This whey protein supplement also proved to be over 600% more effective at building muscle and strength during a bodybuilding program than a regular protein supplement.<sup>27,31</sup>

State-of-the-art hydrolysis processing methods selectively 'cleave' whey proteins into small fractions (called oligopeptides) that are very beneficial for active people. These bioactive peptides are directly involved in the formation and optimal functioning of hormones, growth-factors

and antigens that boost the immune system.<sup>32,33</sup> Whey protein oligopeptides are also hypo-allergenic.<sup>34</sup> This makes whey protein oligopeptide supplements highly suitable for people who have allergic reactions to other proteins.

The benefits of whey protein to athletes are clear. High quality whey protein supplements can help active people achieve optimum health and better gains from exercise training.

### References

1. Am J Clin Nutr 63: 546-52, 1996.
2. Am J Physiol 266: G1053-1059, 1994.
3. Gut 26: 907-913, 1985.
4. Clin Sci 71:65-69, 1986.
5. JPEN 4;6:548-553, 1980.
6. JPEN 13;4:382-386, 1983.
7. Elemental Diets in Clinical Situations Ch5. CRC Press 1993.
8. Am J Physiol Endo Metab.273:E122-E129, 1997.
9. Int J Sport Nutri 11(1):109-132, 2001.
10. Am J Physiol Endocrinol Metab 284: E76-E89, 2003.
11. Sports Med 21:280-97, 1996.
12. Exerci Sport Sci Rev.26:287-314,1998.
13. Annu Rev Nutr Jan;20:457-483, 2000.
14. FASEB J 10: 829-837, 1996.
15. Int J Sports Med 1;S2:S122-S128,1990.
16. Energy Yeilding Macronutrients' Ch10, CRC Press 2000.
17. J Nutr 131 856S-860S, 2001.
18. J Nutr Biochem 14:251-258, 2003.
19. Med Hypothesis 53;(4): 347-349.
20. Nutrition and Aging. New York Academic Press. 85-97 1986.
21. Mol Cell Biochem. 196:31-42 1999.
22. Anticancer Res. 23(2B):1411-5, 2003.
23. J Appl Physiol 87;4:1381-5, 1999.
24. J Med Food 5;4:221-8, 2002.
25. Eur J Nutr 41;1:12-8, 2002.
26. Med Sci Sports Exerc 31;7:987-997, 1999.
27. Med Sci Sports Exerc. 34;5: Abstract1688, 2002.
28. Biol Chem 383: 715-721, 2002.
29. Proc Aust Health Med Res Con. Abstract1223, 2002.
30. Proc Aust Health Med Res Con. Abstract1218, 2002.
31. FASEB J. 17;5:abstract592.20.
32. Agri Food Sci Finland 7: 283-96, 1998.
33. Crit Rev Food Sci Nutr 42;4:353-375, 2002.
34. J Food Prot 57;7:619-625,1994.
35. J Dairy Sci 82:2238-2244, 1999.

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