
Abstract
Oral application of elevated dosages of vitamin B1, B6 and B12 have been found to improve target shooting in marksmen, recruited from a local pentathlon association, in two different studies. Study 1 was performed in an open controlled design, whereas in study 2 the group treated with B-vitamins was compared in a double-blind fashion with a placebo control group including 8 by 8 volunteers and 10 by 9 volunteers, respectively. The volunteers were randomly assigned to the groups. Performance quality was followed in both studies over a period of 8 weeks, while participants were continuously supplied with a combination of vitamins B1, B6 and B12 (Neurobion or Neurobion forte; E. Merck, Darmstadt, and Cascan, Wiesbaden, Germany). In both studies, marksmen in the vitamin-treated groups showed statistically significant, considerably improved firing accuracy as measured by the number of points achieved within a series of 20 shots at each examination. In study 2 the degree of improvement was linearly dependent on the duration of vitamin treatment, whereas the placebo-treated group, similar to the untreated control group in study 1, did not show any prominent change. Performance quality in marksmenship closely correlates with the magnitude of physiological tremor. Tremor can also be involved in the regulation quality of sensory-motor control systems. Thus, an improvement in firing accuracy as found in both studies is by the same token an improvement of fine motor control of slow movements, involving, for example, basal ganglia. (ABSTRACT TRUNCATED AT 250 WORDS)