Zusammenfassung für die Forschungsdatenbank ARAMIS

Carboloading und Getränkezufuhr während der sportlichen Belastung nd physische Leistungsfähigkeit - Eine systematische Untersuchung

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Carbohydrates are one of the two main fuels for sport activities and their general relevance for an optimal sport performance is undisputed among experts. Next to being the main dietary energy source of the athletes, carbohydrates are also used specifically as tool to improve the performance during both specific carbohydrate-loading dietary regimes in the days pre-dating a performance bout or during a performance bout itself. The corresponding research has already been summarized several times, but in all of these summaries or reviews also studies were included, whose design did not reflect the real life situation of a sportive competition. A general feature of many laboratory exercise studies is that the subjects are tested in an overnight fasted state, which, however, is the opposite of what the accepted recommendations for athletes is and of what experienced athletes do intuitively. Further, and in particular with older studies, a test mode was used where the subjects had to perform at a constant intensity as long as they were able to do (so called time-to-exhaustion tests). Such a test mode does not correspond to a sport event because in this situation athletes have either to perform as best as possible over a fixed distance (races) or over a fixed time (team sports). In this project we therefore aimed at summarizing all studies in which a setting was used that mimicked the real life situation of a competitive situation. Among others, only studies were included in which the subjects were not fasted and in which a performance test was applied that was of a time trial character (e.g. fixed distance, fixed time). About 16'500 abstracts from the Medline that were identified through a broad key word search were screened one-by-one. For all except 155 of these abstracts it was clear that the corresponding study was not eligible for this review. The full-text scan of these 155 abstracts then led to the identification of 17 studies comprising 22 carbohydrate interventions with tests durations from 26 to 241 min, which were included in this review. In four of five interventions with duration to 68 min and in seven of 17 interventions with durations between 70 and 241 min no significant performance improvement was observed with the carbohydrate intervention. The improvement in performance with the 10 studies in which a performance enhancing effect was reported was between 3 and 13 %. Overall, the performance

enhancing effect of providing carbohydrate in the proximity or during a sports event does not seem to be very clear if only data from studies are considered in which a real life setting was applied.