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Abstract:

Titel: Effect on muscle building associated with alcohol intake after exercise

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Background: Drinking alcohol is often used as something to spice up weekdays as well as more festive occasions. The reverse aspect of alcohol consumption is that the body sees alcohol as toxic and therefore the basis for a number of diseases. Exercise and physical activity have been proven to be good for several welfare diseases such as diabetes and cardiovascular disease. Among people in general, opinion is divided as to how exercise combined with alcohol affects muscle building, but what do science say?

Objective: The purpose of this review article is to analyze and summarize the existing scientific data about how the structure of muscles is affected in relation to alcohol intake after exercise.

Search strategy: A systematic literature search was conducted in PubMed and Scopus with the keywords alcohol drinking, exercise, muscle strength, free testosterone, ethanol.

Selection criteria: Inclusion criteria: RCT or crossover study design, written in English or Swedish, healthy adult (18 +) people. Exclusion criteria: Review articles, articles that are not available in full text, studies done on people with alcohol dependence. Studies that do not include measures outcomes for muscle building.

Data collection and analysis: Seven studies remained after the selection. The study quality was graded according to quality assessment of randomized trials. Outcome was evidence graded according to the GRADE system.

Main Results: In these studies, alcohol doses varied between 0.5 g alcohol/kg body weight - 1g alcohol/kg body weight. The larger the volume of alcohol consumed the greater the reduction in muscle strength the succeeding hours. Regarding testosterone results show heterogeneity, where the testosterone level provides three different results from three studies. Creatinokinase increases after exercise independently of alcohol. Cortisol appears to increase in the intervention groups. The evidence for all outcomes are low (++) to moderate (+++) besides strength having low evidence (+++).

Conclusions: Today's evidence is highly ambiguous about alcohol effects on muscle building after exercise, since all outcomes, except for creatine kinase are heterogeneous. The future needs to provide more research, where larger doses are tested and where blinding occurs in whenever it is possible.