ALCOHOL ON PERFORMANCE

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The Basic School

ALCOHOL ON PERFORMANCE

- Depressant
  - Alcohol is a well-known depressant and thus acts to reduce central nervous system excitability and cerebral activity (Vella et al., 2010)
- Sleep
  - Alcohol may help individuals fall asleep faster, but causes fragmented REM sleep - disrupts deep sleep (UCSD)
  - Initial depression and CNS shut down but sympathetic stimulation occurs
- Aerobic
  - Serum alcohol concentrations over 100 mg/dl weaken the pumping force of the heart (O'Brien et al., 2000)
    - >80 mg/dL is considered positive for driving under the influence in most states
  - 5-mile treadmill run showed that the average running time was 28 seconds longer after alcohol consumption (O'Brien et al., 2000)
  - Aerobic performance is affected after an intoxication threshold of 20 mmol/L of ethanol (Vella et al., 2010)
    - Lower limit of detection is at 10mmol/L
- Overall Performance
  - Low amounts of alcohol (20-50 mg/dL) can improve balance, accuracy, and decrease hand tremors but will also: decrease hand-eye coordination, decrease grip strength, decrease jump height, and impair 200, 400, 800, and 1500 meter run times due to quicker fatigue (Kozir, American College of Sports Medicine)

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- Muscle "gains"
  - Acute alcohol ingestion decreases muscle protein synthesis…and is associated with increased proteolysis (Vella et al., 2010)
  - Reduce muscle glycogen uptake and storage. Reactive hypoglycemia by exacerbating insulin secretion in the presence of a high carbohydrate meal (Vella et al., 2010)
- Injury
  - The injury prevalence in football players who habitually drink alcohol is higher (55%; $p<0.005$) than in nondrinkers (24%) (Shirreffs et al., 2006)
  - Athletes who consumed alcohol at least once per week had more than double the chance of injury rate than nondrinkers (O'Brien et al., 2000)
  - Prolonged alcoholism is associated with high circulating levels of pro-inflammatory mediators (Vella et al., 2010)
- Dehydration
  - Alcohol has further shown to act as a peripheral vasodilator. Further exacerbates the dehydration that is already present (Vella et al., 2010)

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