

# Caffeine Levels in Energy Drinks and the Implication on Cardiovascular and Neurological Health Systems in Children and Young Adults.

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## Abstract

Caffeine has negative impacts on pediatric health, specifically in cardiovascular and neurological health and the use of energy drinks poses a threat to them. Energy drinks are desirable in ways that it can improve physical and mental stimulation in consumers. Energy drinks lack regulation on the levels of caffeine that are added, including the caffeine substitutes, the Food and Drug Administration allows for this little to no regulation on caffeine. Through further investigation it should be noted that caffeine is the largest contributor to the overall negative health effects. However, further analysis shows that the coupled effects of caffeine and its coupled ingredients, in this critical review we analyze primarily coupled effects of caffeine and taurine, an amino acid often found in energy drinks. Through the analysis of caffeine's cardiovascular effects, we found that the implications include increases in blood pressure and heart rate. Further analysis on the effects on the neurological system found that caffeine has impacts on inhibiting dendritic growth and leads to a reduction in cerebral blood flow, this can lead to further brain damage. Caffeine alters blood pressure, regardless of whether an individual is predetermined hypertensive, normotensive, or hypotensive. Taurine has implications for the growth of oligodendrocytes which are crucial for the development of neuronal networks. The primary impact comes from prolonged consumption of energy drinks at young ages. Through further analysis on the regulation of the consumption of energy drinks there is also no warning labels for the limit that someone should consume, some have labels that recommend that consumers are above the age of 18 years old. In conclusion, it was found that there are blood pressure and dendritic growth inhibitions due to prolonged use of energy drinks.