

# Alcohol-related aggression-social and neurobiological factors

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## **Abstract**

**SUMMARY**  
**Background:** Alcohol-related aggression and violence are a widespread cause of personal suffering with high socio-economic costs. In 2011, nearly one in three violent acts in Germany was committed under the influence of alcohol (31.8%). The link between alcohol consumption and aggression is promoted by various interacting factors.  
**Methods:** In this review, based on a selective search for pertinent literature in PubMed, we analyze and summarize information from original articles, reviews, and book chapters about alcohol and aggression and discuss the neurobiological basis of aggressive behavior.  
**Results:** Aggression is promoted both by the cognitive deficits arising in connection with acute or chronic alcohol use and by prior experience of violence in particular situations where alcohol was drunk. Only a minority of persons who drink alcohol become aggressive. On the other hand, alcohol abuse and dependence together constitute the second most commonly diagnosed cause of suicide (15-43%). Current research indicates that the individual tendency toward alcohol-induced aggression depends not just on neurobiological factors, but also on personal expectations of the effects of alcohol, on prior experience of violent conflicts, and on the environmental conditions of early childhood, especially social exclusion and discrimination. Gene-environment interactions affecting the serotonergic and other neurotransmitter systems play an important role. Potential (but not yet adequately validated) therapeutic approaches involve reinforcing cognitive processes or pharmacologically modulating serotonergic neurotransmission (and other target processes).  
**Conclusion:** Alcohol-related aggression has manifold social and neurobiological causes. Specific treatments must be tested in controlled trials.

Web link

<http://www.aerzteblatt.de/pdf/di/110/42/m711.pdf>

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