

# **Biomarkers for the Identification of Alcohol Use/Abuse: A Critical Review**

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**REFERENCE:** Bortolotti F, Tagliaro F: Biomarkers for the identification of alcohol use/abuse: A critical review; *Forensic Sci Rev* 23:55; 2011.

**ABSTRACT:** Alcohol abuse represents a highly relevant medical, social, and economic problem all over the world. The diagnosis of conditions of alcohol use or abuse is complex, requiring different and integrated methodologies; among them the use of biomarkers is a very helpful and objective tool. This review article discusses the currently available biomarkers of alcohol abuse, showing their positive and negative characteristics in terms of detection window, diagnostic sensitivity, diagnostic specificity, and analytical feasibility. Particular attention is dedicated to the most used biomarkers, represented by liver enzymes (AST, ALT, and GGT), MCV, CDT, EtG and EtS, FAEE, and PEth. A critical analysis of the different biomarkers showed wide variability in terms of detection window, sensitivity, and specificity. On this basis, the choice of any indicator should depend on the aim and context for which the diagnosis of alcohol abuse is required (e.g., clinical, fitness for driver's license, fitness to work, child custody). Moreover, this study showed that the diagnosis of alcohol abuse cannot be based only on the use of biomarkers, but it must also consider the integration of anamnestic, clinical, instrumental, and laboratory data.

**KEY WORDS:** Alcohol abuse, alcohol use, biomarkers.

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