

HOSPITAL PHYSICIAN®

EMERGENCY MEDICINE BOARD REVIEW MANUAL

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Alcohol-Related Emergencies

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INTRODUCTION

Toxic conditions from ethanol, methanol, isopropanol (isopropyl alcohol), or ethylene glycol ingestion are routinely encountered by emergency physicians. Although these alcohols are related in terms of chemical structure, they produce different clinical effects when ingested. Emergency physicians should be familiar with the pathophysiology and clinical features of alcohol toxicity and know how to manage toxic ingestions of each alcohol. In addition, they should be able to recognize and treat conditions associated with chronic ethanol use.

ETHANOL INGESTION

Ethanol is the most commonly abused substance in the United States. It is reportedly involved in 30% of all

motor vehicle crashes and 47% of all fatal crashes.¹ Ethanol is associated with 50% of all accidental deaths, and it has been calculated that ethanol use reduces an individual's life expectancy by 12 years when all factors are considered. One study showed that 33% of all evening emergency department patients were intoxicated.² It has been estimated that there are at least 10 million alcohol abusers or dependent drinkers in the United States. Although it may have limited use in the management of alcohol-related emergencies, the CAGE questionnaire (Appendix) may be used to screen for alcohol problems.

ACUTE ETHANOL INTOXICATION

Metabolism

Ethanol is absorbed primarily from the stomach and small intestines. The rate of absorption depends on the concentration of ethanol in the beverage ingested and the presence or absence of food in the gastrointestinal