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The causes of motor vehicle crashes are varied. It has been estimated that up to 90 percent of highway crashes are due to human error. However, it is difficult to determine the relationship between medical conditions and crash risk. There is little doubt that medical conditions that affect functional capabilities such as sensory, motor, or cognitive functioning may impair driving ability and contribute to the occurrence of crashes.

Guidelines for assessing driver fitness have evolved over the past 50 years based mainly on a combination of legislation, administrative rule, and best medical judgment. The result has been a patchwork of standards lacking in uniformity and, for the most part, with limited scientific basis. The National Highway Traffic Safety Administration in cooperation with the Association for the Advancement of Automotive Medicine sponsored an international review of the scientific literature on medical conditions that may affect driving skills, which has resulted in a comprehensive document on this topic. In addition, a meeting of medical and research specialists developed preliminary guidelines for physicians based on the literature review.

Medical Conditions and Driving

The report provides a comprehensive and integrative review of the medical, epidemiological, and gerontological research on the effects of medical conditions and functional limitations on driving performance. Literature spans 40 years and includes over 500 citations. It is divided into 15 sections (Introduction, Vision, Hearing, Cardiovascular Diseases, Cerebrovascular Diseases, Peripheral Vascular Diseases, Diseases of the Nervous System, Respiratory Diseases, Metabolic Diseases, Renal Diseases, Musculoskeletal Disabilities, Psychiatric Diseases, Drugs, The Aging Driver, and The Effects of Anesthesia and Surgery). Each section provides a brief overview of the condition or illness, prevalence information, a review of the driving literature relevant to the condition, followed by current fitness-to-drive guidelines from Canada and Australia.

The report is a scholarly but practical compendium that is a valuable resource for physicians, rehabilitation practitioners, other allied health care professionals, Department of Motor Vehicles personnel, road and traffic safety personnel, transportation planners, hospital discharge planners, researchers, and educators.

The report brings together a vast and diversified literature, which should serve as a departure point for those who want to further quantify the relationship between medical conditions and safe driving. It also points out some of the limitations of the existing literature in this field, such as the absence of appropriate exposure measures and the differences in the population samples, which make cross study comparisons difficult.

Preliminary Guidelines for Physicians

The report also contains preliminary guidelines for physicians that are the result of a collaborative effort by a group of individuals with expertise in medical conditions and driving. The preliminary guidelines were developed to assist physicians in determining when patients have medical conditions that can affect their fitness-to-drive. The guidelines deal with recommendations for drivers of private motor vehicles.

In North America, as elsewhere, driving is legally a privilege. In instances where medical conditions affect fitness-to-drive, and the physician has informed the individual that the condition may affect driving, the primary onus is usually on the individual to adhere to the physician's recommendation about driving. Moreover, it is the responsibility of the individual to report any change in condition or in a treatment that may negatively affect his or her driving to the physician and to the driver-licensing agency.

There is considerable variation in policy among jurisdictions about physician responsibilities in evaluating and counseling patients about fitness-to-drive. Physicians are encouraged to contact their State or provincial Department of Motor Vehicles to obtain legal or voluntary requirements for reporting medically unsafe drivers. In December 1999, the American Medical Association released a policy statement articulating physicians' responsibility for physical and mental impairments that might adversely affect driving (see *Current Opinions of the Council on Ethical and Judicial Affairs (CEJA), Rep1, 1-99*).

The preliminary physician guidelines in this report are based on the scientific literature review on medical conditions and driving, consideration of medical fitness-to-drive guidelines from Australia and Canada, and input from a meeting of experts in medical conditions and driving. The resulting preliminary guidelines are contained in an appendix to the report, and address the issues of driving with different types of medical conditions and functional capabilities. While many conditions have the potential to impair driving, no one illness or condition suggests absolute cessation of driving. Rather, the presence of one or more illnesses should serve as a "red flag" that driving may be compromised and that further evaluation may be warranted.

The preliminary guidelines of this report formed the basis for the September 2003 recommendations set forth in Chapter 9, titled "Medical Conditions and Medications That May Impair Driving," of the American Medical Association's *Physician's Guide to Assessing and Counseling Older Drivers* (Wang, Kosinski, Schwartzberg, and Shaklin. Washington, DC: National Highway Traffic Safety Administration, 2003).

How To Order

For a copy of *Medical Conditions and Driving: A Review of the Scientific Literature*, write to the Office of Research and Technology, NHTSA, NTI-132, 400 Seventh Street, SW, Washington, DC 20590 or send a fax to 202-366-7096.

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