

# What Does It Take To Drive Safely?

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**Vision:** 90% of information used by drivers to make safety decisions when operating a vehicle depends on vision. Vision skills include the following:

1. **Near vision** is needed to see gauges and controls, read maps inside the car.
2. **Far vision** is needed to read signs, see pedestrians, roadways, turn lanes, traffic lights, etc.
3. **Visual field** is needed to see cars, pedestrians, traffic signs, potential obstructions or hazards presenting from all sides and angles.
4. **Contrast Sensitivity** is the ability to detect the foreground from the background such as knowing the difference between the highway and a curb, differentiating a sign from a person, etc. Contrast sensitivity is especially important at low light conditions such as dusk, dawn, stormy or poor weather conditions when you have to be able to see objects against a dim or poorly lit background.
5. **Accommodation** is the eye's ability to adjust to changing light conditions. This skill is especially important when eyes must adjust to sudden bright lights such as a rising or setting sun, or high beams or going into or leaving a tunnel. Glare is also a concern here.

**Cognition:** Driving requires a high level of cognitive skills that include the following:

- A. **Memory:** A driver must remember how to operate the vehicle, while remembering traffic rules, the meaning of signs and signals, destinations and directions to get to and from destinations.
- B. **Attention:** Focused and continued attention to changing action, climates, road conditions, rules, driving challenges, diversions, etc.
- C. **High level thinking skills including the** ability to recognize, interpret, and then correctly make decisions about all the visual information the driver sees; the ability to make split second decisions on how to prioritize attention and exactly what must be attended to and what could be disregarded. Higher level skills must be used when special life threatening situations happen or almost happen.

**Motor Function:** Driving is a very physical activity that requires the following abilities:

A. **Coordination:** Large gross motor coordination skills are needed to use arms and legs for steering and acceleration, getting into and out of the car, maintaining sitting balance while driving, etc. Fine coordination is needed to hold a key, turn dials, make small control adjustments, etc.

B. **Physical strength:** Physical strength is required to maintain sitting posture, control the steering wheel, turn to look in either directions and in the back, use the brakes and other foot pedals, and sustain the physical effort of driving short and long distances.

C. **Range of motion (ROM):** ROM is necessary to complete all driving tasks, including holding the head up, reaching for the steering wheel or emergency brake, adjusting mirrors, handling controls on the dashboard, etc.

D. **Endurance:** Ability to physically and mentally handle the entire driving activity without a loss of ability, decline in endurance or energy or ability to make prompt life saving decisions.

F. **Flexibility:** Helps to assure speed of response, vital elements of driving.

G. **Combined skills** are essential to assure speed of reaction time, when it is necessary to rapidly respond to split second decisions in order to prevent accidents or injuries from occurring. Because not all highway factors can be controlled by the driver, this ability must be constant.

### **TIP Good Driving Habits:**

1. Always wear a seat and shoulder belt.
2. Keep the vehicle well maintained
3. Never drive while under the influence of drugs, some over the counter products, chemicals or alcohol
4. Know and understand the rules of the road
5. Drive in the best of weather conditions

## **SUMMARY**

Driving is a very complex activity. 95% of the information used by drivers to make safety decisions when operating a vehicle depends on vision. Driving requires a combination of, physical, sensory and mental skills, along with an ability to make smooth and easy transitions from one skill to another, or many different skills all at once.

Driving requires memory, executive thinking and working knowledge. Full and undivided attention is required to interpret and evaluate continually changing conditions to decide the best and safest driving actions.

A combination of skills and good driving habits are needed when driving to assure speed of reaction time and good life saving judgment. A decline or loss of ability in any physical, sensory or cognitive skill will have a direct affect on driving skills and abilities.

### ***Internet resource for this article***

**<http://www.icoph.org/standards/driving.html>**