

DEFINITIONS

What is Sleeplessness?

Insomnia is the inability to sleep for a duration or at a quality that meets the body's biological needs. It is not limited to "not being able to fall asleep"; interrupted sleep or non-restorative sleep also fall under this category. For drivers, insomnia means a decrease in the brain's data processing capacity.



What is Fatigue?

Unlike insomnia, fatigue is a feeling of exhaustion resulting from physical or mental effort. It can also be triggered by "monotony" (road hypnosis) during driving. Even if a person has had enough sleep, driving for long periods causes mental fatigue and distracts attention.

REACTION TIME

Driving is a continuous cycle of Perceive - Decide - Act. In a fatigued brain, this cycle slows down significantly.

Perception Blindness: A fatigued driver's brain requires more time to process visual data. The duration between seeing the brake lights of the vehicle ahead and the brain issuing the "I must brake" command increases.

TUNNEL VISION

To conserve energy, a fatigued brain stops processing data it deems "unnecessary."

Tunnel Vision: The driver focuses only on what is directly in front of them. They stop checking mirrors and fail to notice vehicles coming from side roads or activity at pedestrian crossings.

Lack of Eye Scanning: While an alert driver constantly scans the road, a fatigued driver locks onto a fixed point (usually the license plate of the car ahead or road markings). This leads to detecting hazards only at the last possible moment.

IMPAIRED MOTOR SKILLS

Coordination between hands, eyes, and feet weakens.

Steering movements become either too sharp or delayed.

Precision in shifting gears, signaling, or operating pedals is lost (e.g., braking harder than necessary or losing control over acceleration).

MAKING AND JUDGMENT

Fatigue disrupts the brain's "executive functions."

Risk Perception: The driver perceives risks as less dangerous than they actually are. They make faulty decisions such as "I can take this corner at this speed" or "I have enough time to overtake that vehicle."

Mood Changes: Fatigue leads to intolerance and aggression. The likelihood of overreacting to other drivers' mistakes increases.