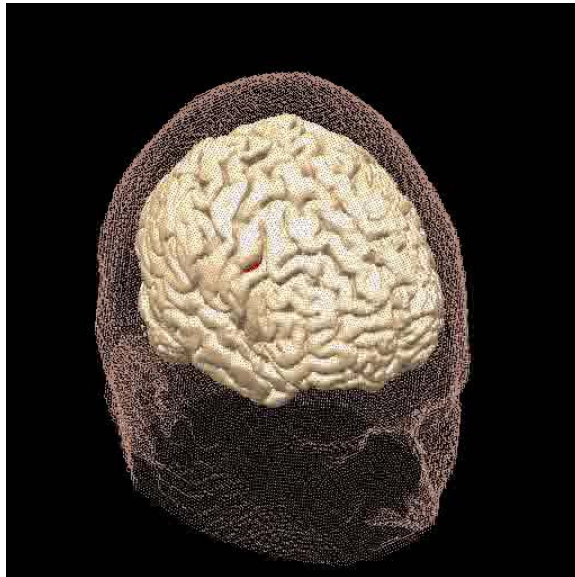


Behavioral modifications in the elderly and driving



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Psychiatric Disorders and Driving

Psychiatric Disorders and Driving

- There is little evidence that psychiatric illness results in dangerous driving (Raffle, 1985)

Psychiatric Disorders and Driving

- 25% of drivers in accidents are impaired
 - Alcohol
 - Drugs
 - Emotional disorder

Cremona, 1996

Psychiatric Disorders and Driving

- Little evidence that schizophrenics are more dangerous than controls
- 10% of accident drivers have suicidal ideation
- Patients with anxiety disorders have 50% more accidents
- After dementia the most dangerous disorders are mania and hypomania, severe depression, personality disorders

Silverstone, 1988

Personality disorders

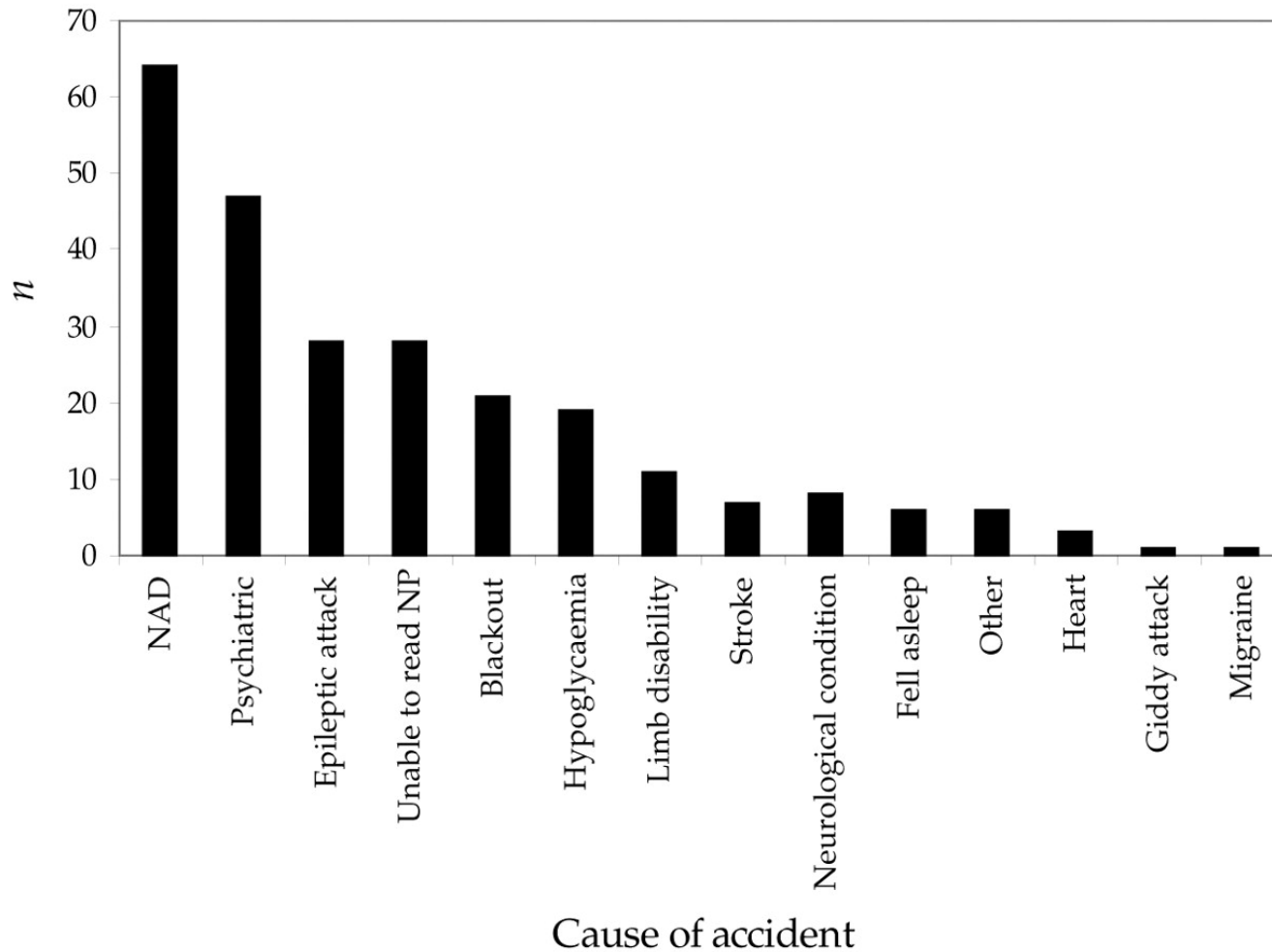
- Male patients have 6 times as many car accidents as controls (Elkema, 1970)
- The most dangerous drivers are patients with
 - Aggression
 - Impulsiveness
 - Intolerance
 - Feel alienation from the societyGibbons, 1976
Gulliver, 2007

Suicidal ideation and driving

- 5.9% of fatal driver accidents are suicides
- In 4% of cases the crash led to death of another person

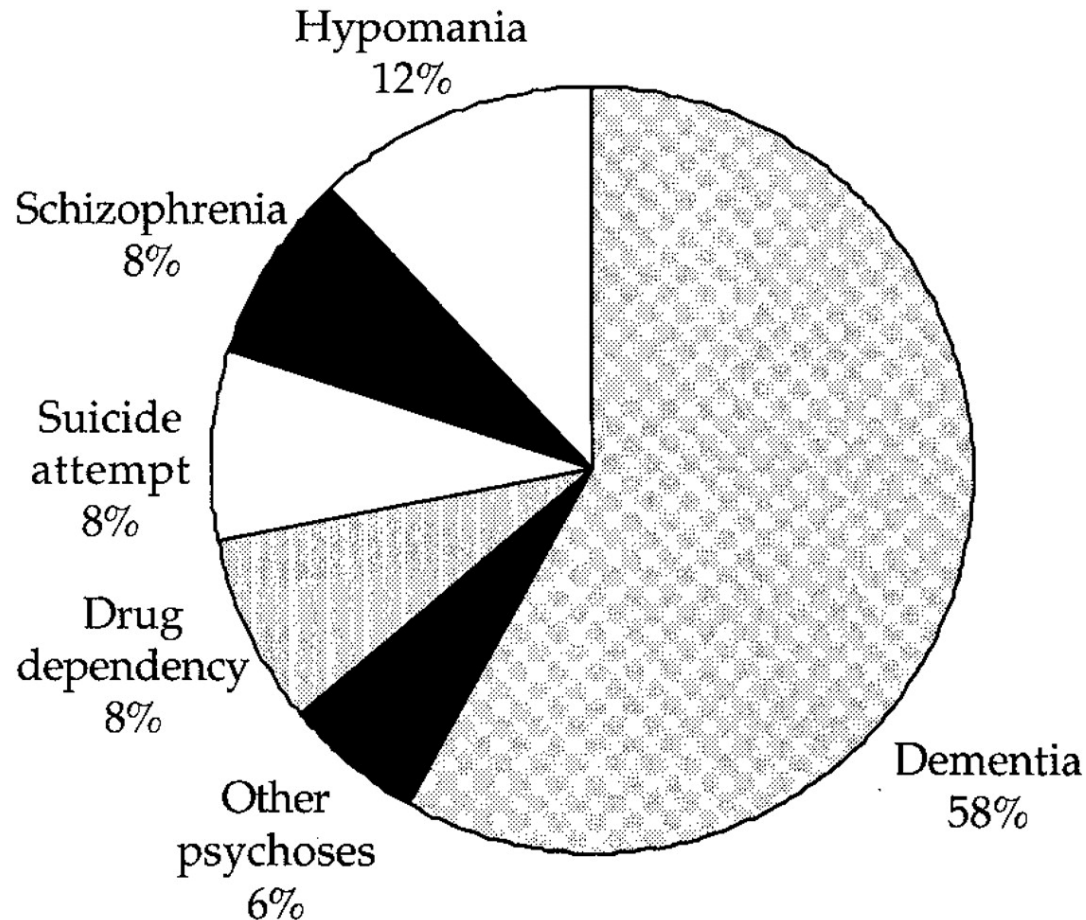
Ohberg, 1997

Analysis of about 25% of police notifications in 1995. *n*, number of reports (total = 250).



Harris M APT 2000;6:261-269

Psychiatric disorders identified on police reports as the cause of road traffic accidents.



Harris M APT 2000;6:261-269

ADHD and driving

- ADHD sufferers have
 - 2-4 times more car accidents than controls
 - 3 times more injuries
 - 6-8 times more likely to have their licenses suspended
- ADHD affects 10.3% of young children (population studies)
- The prevalence decreases with age (4.4% in adults)
- Many ADHD patients through adulthood manifest
 - Anxiety disorders
 - Bipolar disorder
 - Drug and alcohol misuse
 - Anti-social behavior
- Kessler, 2006
- Faraone, 2003

Alcohol and other drugs in Driving

- 41% of fatally injured persons were in alcohol related car accidents
- 46% of male traffic deaths are alcohol related and 29% for females
- Only 15% of traffic deaths among adults age 65 and over

Hingson R., 2003, NIAAA

- Cannabis is the most common drug detected in drivers involved in accidents

Psychotropic medication

- Benzodiazepines are over represented in car accidents drivers
- Other drugs
 - Anti-psychotics
 - Anti-depressants (mostly the first period of use)
 - Lithium

There is considerable idiosyncratic variability profile on side effects of medication

Psychiatric disorders in Third Age

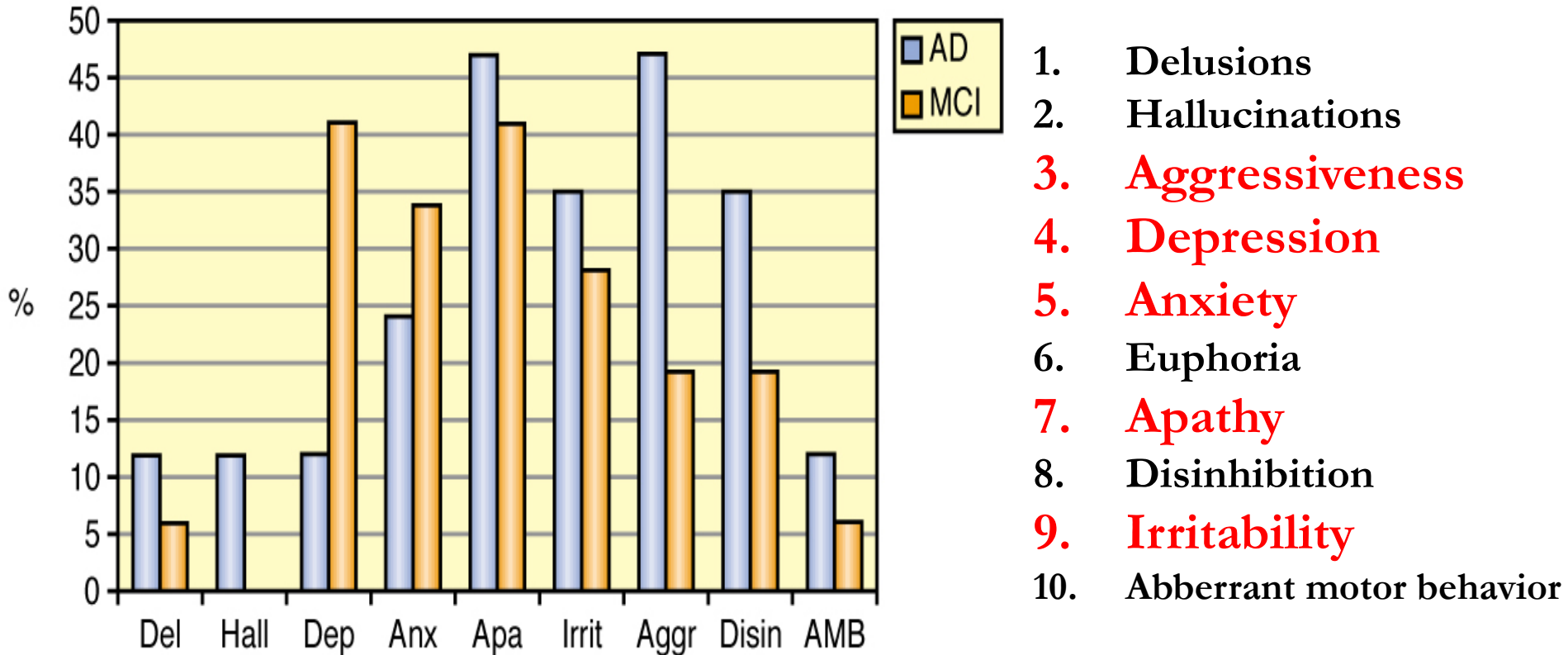
- Patients with psychiatric disorders drive fewer miles /year
 - But they have 2ice the number of accidents /mile
- Many schizophrenic and bipolar patients quit driving before the age of 65 years

Silverstone, 1988

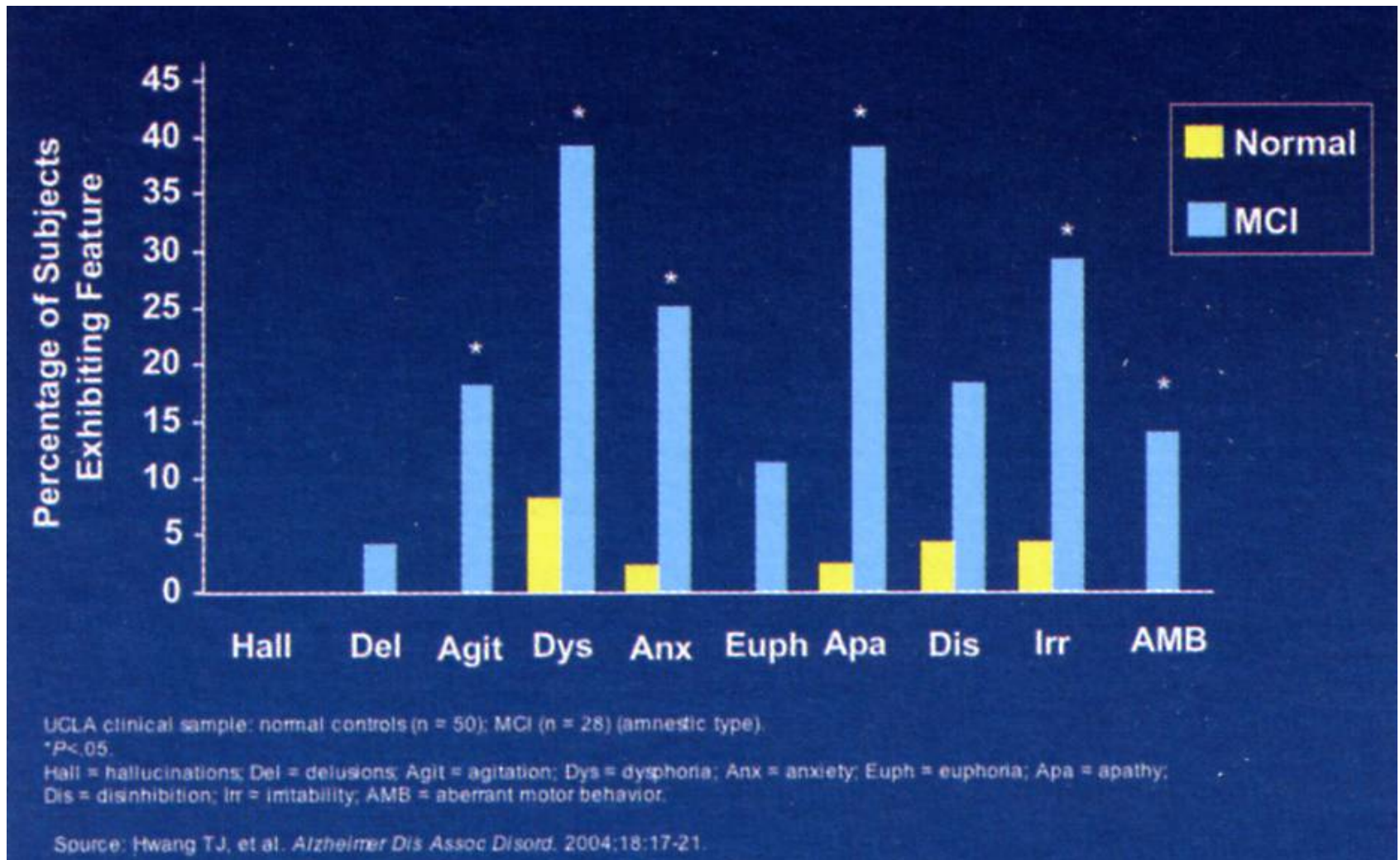
Cremona, 1996

Mild cognitive Impairment (MCI)
Neuropsychiatric symptoms and Driving

Neuro-Psychiatric profile in Alzheimer's disease and MCI



Neuro-Psychiatric profile in Normal aging and MCI



Irritability/Agression

- Aggressive behavior driving and accidents correlate to
 - Driving violations
 - Irritability while driving

Chliaoutakis J., 2002

Disinhibition/impulsivity

- Impulsivity correlates to
 - risky driving behavior

Shaneel B., 2013

Abberant Motor Behavior

- There is a relationship between Aberrant Behavior and self reported Accidents amongst professional bus drivers

Sakineh V., 2013

Anoso-agnosia in MCI and AD

- The diagnosis of anosognosia is frequent in patients with mild AD but not in those with MCI

Orfei MD, 2010

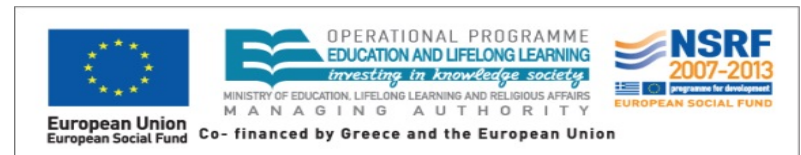
- Anosognosia is a Significant Predictor of Apathy in Alzheimer's Disease

Starkstein S., 2010

Conclusions

- Psychiatric disorders probably affect driving
- Neuro-psychiatric symptoms in MCI and AD correlate to car accidents and risky driving behavior

driver BRAIN



- Thank you