

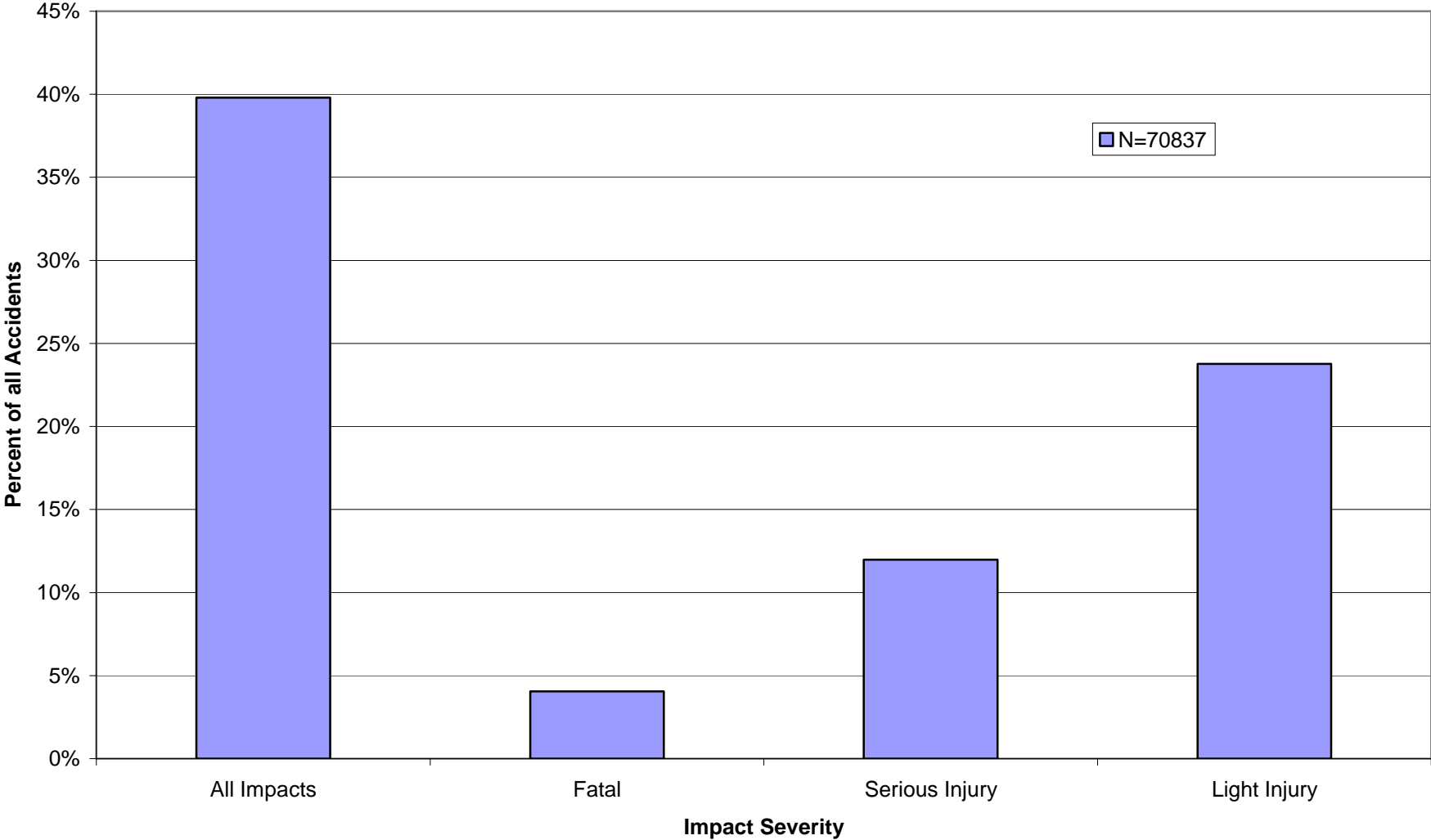
# Single Vehicle Collisions

- Extracts from the RISER project (DG-TREN Growth Project 2003-2005)
  - Database with National Statistics
    - Subset of data with explicit coding the damaged portion of the vehicle (70837 cases from 4 countries)
  - Detailed Reconstruction Database
    - Impact Speed and Speed Change for different objects

# National Statistics

- Extracted Damage to vehicle front most common type of impact (40%) of collected impacts
  - Impact severity (EES,  $\Delta V$ ) not reported
- Only 4% of all fatalities associated with this impact type

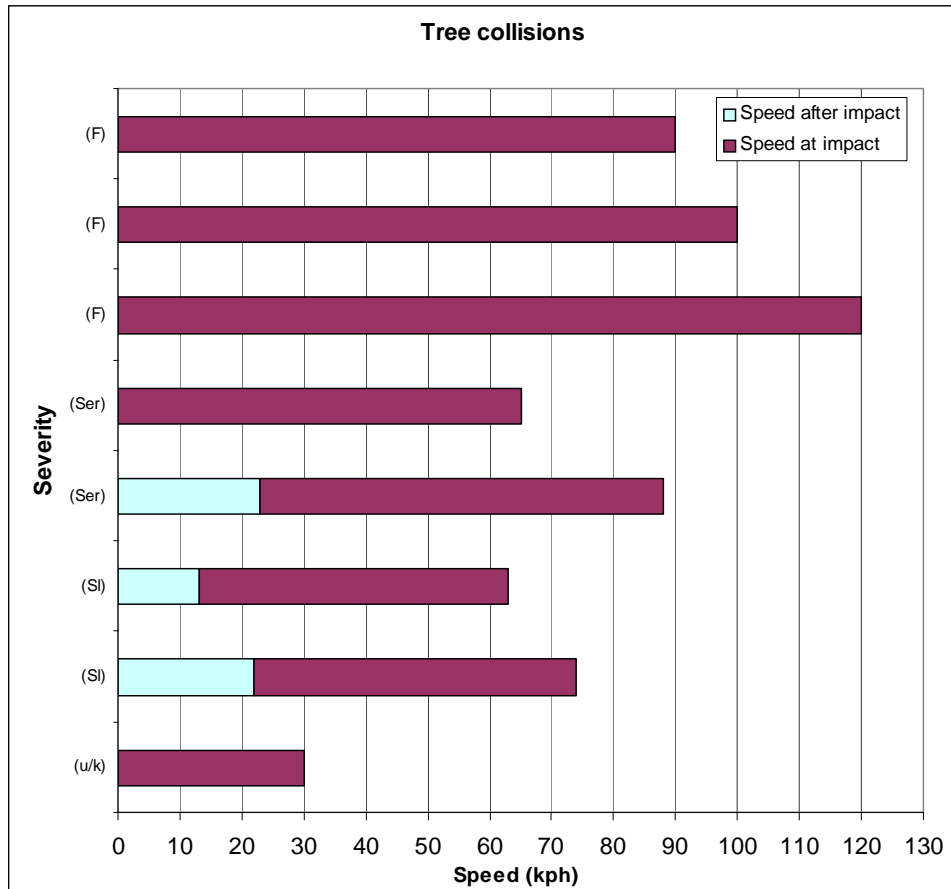
# Single Vehicle Accidents 1999-2003



# Detailed Database

- Most detailed reconstructions involved more severe collisions
  - 211 cases in database, 55 reconstructed with collision severity

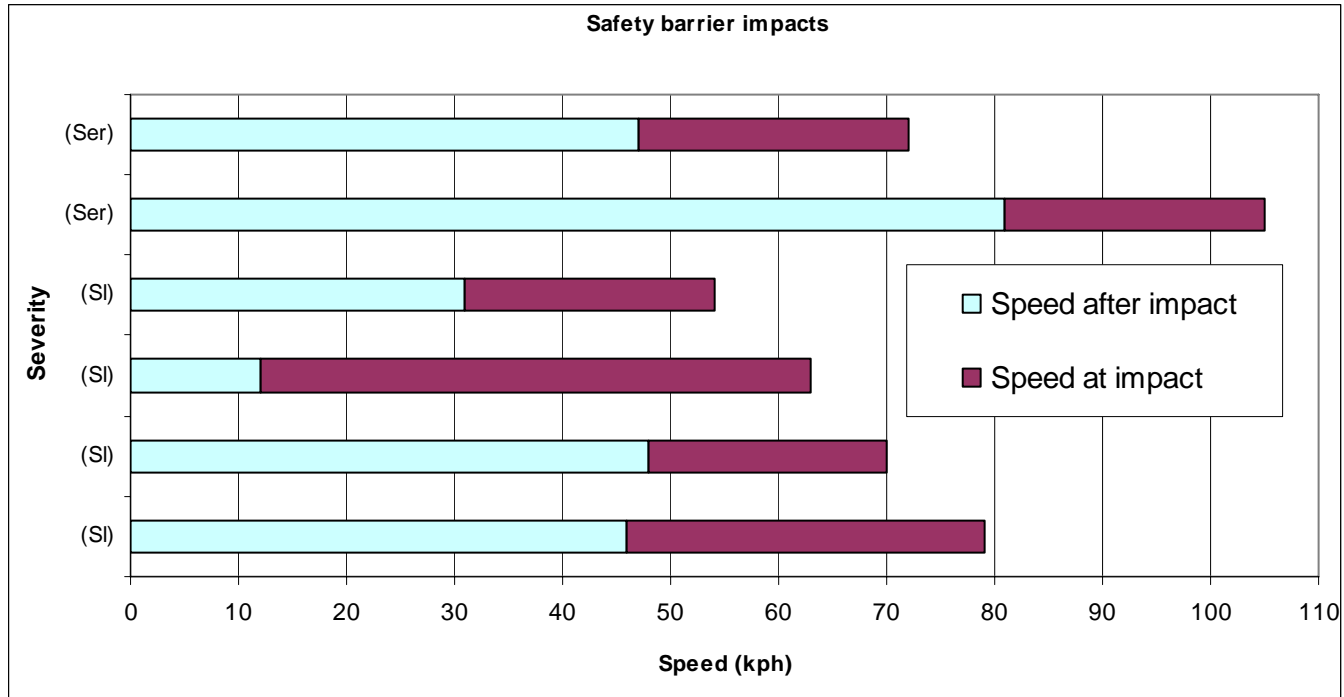
# Frontal Impacts With Trees



All Fatales  $\Delta V > 90$  km/h

Serious Injuries  $\Delta V > 60$  km/h

# Frontal Impacts with Safety Barriers



- No Fatal accidents
  - Due to impact angle, longitudinal component of impact speed lower than plotted impact speed
- $\Delta V < 50$  km/h

# Summary

- National statistics for single vehicle accidents report 40% are frontal impacts which account for 4% of SVA fatalities
- Few pure frontal impacts found in detailed database
  - tree impacts tended to be violent with severe injuries starting with  $\Delta V > 40\text{-}50$  km/h