ROAD TRAFFIC ACCIDENTS

PEDESTRIAN ACCIDENTS

1. Collision: - front (complete, partial: entry, exit, in straight line)
   - side
   - run over (simple, complicated)
   - type of the car: wedged, pontoon like, box like
   - injuries: primary, secondary, tertiary
2. Impact speed - determination: based on compares of pedestrian's injuries and damages of the car
3. Manner of pedestrian movements (upright walking, bouncing, running)

1. Front collision:
   - Complete: entry/in the line - after the primary impact (speed above 20-25 km/h), the pedestrian is lifted onto the vehicle bonnet and may impact the hood, the windshield or the pillars (at lower speed: the body will be projected directly onto the road); exit – the body will be thrown forward without contacts with upper parts of the car
   - Partial: if the pedestrian is struck by lateral or outer portions of the front of the vehicle (e.g., headlight area), the body will be picked up onto the fender and will roll off
2. Side (e.g., outer mirror)
   - after the impact: the body will be rolled along the side parts of the car

Typical phases, sites of impact and main injuries in a typical car *v* upright adult pedestrian collision at moderate speed

Phase	Site of impact	Injuries
Primary i.	bumper	lower extrem.
Secondary i.	hood, pillar windscreen	head, torso
Tertiary i.	ground and fixed object	head, torso
Run over	crushing, car or another vehicle	abdominal and thoracic region

MOTOR VEHICLE OCCUPANT INJURIES

Depends on: the type and speed of vehicle, the direction of the impact, the degree of deceleration, the position of the occupant, the use of restraint systems.
Categories:
- Front impact crashes
- Side impact crashes
- Rollovers
- Rear impact crashes (civil suits – whiplash sy!)

Precise reconstruction of an accident (speed, direction of travelling, analysis of movements of passengers); anchorage triangle of driver; needed actions: CSI, autopsy

WHIPLASH INJURY
Change of speed after the crash (delta V)
Mathematic formula for the intensity of force that affect human body
Delta V – the best correlation with the intensity of body damages

- up to 10 km/h: harmless, no injury
- 10 - 15 km/h: injury could be sustained but on previously damaged or pathological changed cervical vertebra
- more than 15 km/h: injury could be sustained even on healthy cervical vertebra