TRAFFIC INJURIES

Road traffic participants:
• Pedestrians
• Drivers and passengers
• Pedal cyclists
• Motorcyclists

AUTOPSY - PURPOSES
• to determine cause of death
• to determine the extent of injuries (reconstruction of car accident)
• to establish contributing factors (diseases, alcohol or/and drug intoxication)
• identity of the body or remains

AUTOPSY
• all skin injuries and bone fractures should be measured from ground level (clothes!!!)
• comparison to results and photos of vehicle inspection (car, bicycle, motorcycle)
• comparison to results of inspection at the scene of the accident

CAR-to-CAR COLLISIONS
• frontal – two vehicles collide head-on or vehicle strikes fixed object (massive deceleration)
• side
• rear – (massive acceleration)
• rollover – more lethal than side impacts
• any combination of these listed above

PEDESTRIANS
• running, walking person, also walking with the bike
• standing still person
• sitting person
• laying person

PEDESTRIANS
Injuries:
• primary – due to impact with the vehicle,
• secondary – due to impact with the ground or objects after throwing off the vehicle)
PEDESTRIANS
Injuries at pedestrians depend on:
- speed of hit by the vehicle
- type of the vehicle
- braking or not
- size of the victim (adult or child)

PEDESTRIANS - speed
• low speed and higher speed with breaking – victim is picked up, strikes the bonnet and windshield, slides off the bonnet onto the road or sides
• high speed – projecting up into the air, even without hitting any part of the vehicle (no breaking), striking the ground

PEDESTRIANS
Type of vehicles
- low suspended vehicles – sport cars, passenger cars (strikes lower than center of gravity) – adult is picked up, child is knocked forward,
- high suspended cars – lorry, trucks, buses (strikes at or above center of gravity) – adult is knocked down and run over

PEDESTRIANS – INJURIES
• Legs
• Trunk
• Head

PEDESTRIANS – injuries of the head
Impact of the windshield
• lacerations, small incised wounds (superficial L-shaped, V-shaped, sparrow-foot shaped – from shattered window), bruises, abrasions
• bone fractures (base of the cranium, neck injuries
• brain injuries

PEDESTRIANS - INJURIES OF THE NECK

PEDESTRIANS – injuries of the legs
• skin injuries
• hip joints
• knee joints
• ankle joints
• bone fractures (pelvis, legs)

DECOLLEMENT – „FLAYING” OF THE SKIN

PEDESTRIANS – injuries of the trunk
• skin injuries
• injuries of internal organs
• bone fractures

ANKLE JOINTS
Injuries of ankle joints
- fractures of lateral or medial malleolus,
- medial (deltoid) and lateral ligaments,
- anterior part of joint capsule,
- calcaneal tendon

MESSERER’S FRACTURE

Drivers and passengers injuries
• head and cervical spine (whiplash)
• trunk
• thighs and legs

INJURIES OF CAR OCCUPANTS
• abrasions, bruises, subskin haemorrhages (seat-belts?)
• injuries of inner organs (brain, aorta, lungs, heart…)
• bone fractures (cranium, sternum, ribs, pelvis, upper and/or lower extremities)
• injuries of the joints elements

LATERAL WIPOLASH
DRIVER OR PASSENGER

Location of injuries

BIOLOGICAL EVIDENCE

Pedalcyclists
Riding bicycle
Injuries:
- head
- neck
- trunk
- extremities
- genitals

RECONSTRUCTION OF AN ACCIDENT
1. Draft of situation on the road after accident (directions, trace marks on the road, cloth, personal things),
2. Inspection of the vehicle (all damages, seat-belts, head rests, biological traces – blood, hair)
3. Autopsy findings
4. Opinion of an engineer expert – knowledge about directions of movement of car occupants during accident
5. Medical record.

Common questions:
• What was pedestrian position at the moment of accident? (standing, lying, left, right?)
• Which side of the body he/she was hit?
• Who was the driver?
• How passengers were located in the car in this accident?