

# car accidents

## Your questions answered

### What factors affect car accidents?

Whilst the following are not exclusive to car accidents, they are certainly very relevant in many car accidents.

**Visibility is sometimes critical, particularly at night with pedestrians and riders**

The visibility afforded to a driver is often an issue. This does not just mean obstructions such as building lines and hedgerows, but can also mean the conspicuity of a struck pedestrian, bicycle or motorcycle rider. In general, pedestrians and two-wheeled vehicle operators wear clothing which is difficult to see at night. Car headlights are not designed to allow car drivers to see much more than 30 metres ahead on dipped beam and the combination of poor conspicuity and inadequate lighting can have tragic results.

**Often car accidents are avoidable at a slightly lower speed or a more alert driver**

The speed of the car and reaction time of the driver can be used to establish whether or not an accident could have been avoided by a reduced speed or a driver being more alert. Where excess speed is apparent in a case, applying the appropriate speed and a standard driver reaction time will have the vehicle braking earlier than occurred in the accident. This will often mean no collision at all, or a lower speed at impact. Lower impact speeds are obviously associated with reduced damage and injury.

**Steering problems rarely occur, but brake and tyre problems are occasionally important factors**

The car's condition is rarely a factor in accidents, particularly the steering, but the condition of the brakes and tyres sometimes play a fundamental part in the cause and outcome of an accident.

### How is the speed of the car calculated?

**There are many ways to calculate the car's speed in an accident**

Car accident reconstruction has probably been the subject of the most research over the years. As a consequence there are many systems in place to calculate the speed of the car. Speed loss whilst depositing tyre marks is a very standard method. If the vehicle skidded then standard equations of motion can be used. Where the vehicle left critical speed tyre marks whilst turning, the speed of the turn can be determined in a simple fashion by using  $v_{crit} = \sqrt{\mu r g}$

With skidding accidents, or critical speed cornering, the coefficient of friction of the surface needs to be known. Often the police will perform skid testing at the scene either with the accident vehicle, or with a police vehicle fitted with a chalk gun or a decelerometer. Where such testing has not occurred, skid tests can be performed by an instructed expert, or standard bands for the surface type and condition must be used.

**Examination of the scene can result in scene evidence marked by the police becoming apparent**

The speed change at impact of a car has also been extensively researched. The amount of damage suffered by the vehicle can be used and the results inputted into a number of commercially available computer programs such as EdCrash, SMAC, and Crash3. These programs use the volume of damage, the stiffness of the area impacted and other factors to calculate the speed loss. Other simple methods such as exchange of momentum between the impacting vehicles can be used.

**Methods such as Pedestrian Throw Techniques are useful and the deformation to involved vehicles should be measured**

Where a pedestrian or cyclist was struck, then the distance the pedestrian or cyclist was thrown can also be used via equations developed for Pedestrian Throw Techniques (this is more extensively explained on another information card). The amount of deformation suffered by the car in a motorcycle collision can also be used to calculate the speed of the motorcycle, which may have a bearing on subsequent calculations for the car.

continued...

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... the answers continued

*What about whiplash?*

*Whiplash (or soft tissue neck injury [STNI] as it's now called) is the most prevalent injury to car occupants, particularly front seat occupants. Studies from around the world suggest that between 40 and 70% of all injuries sustained in car crashes were classified as whiplash. Whiplash is not always immediately apparent, with only 15 to 30% complaining soon after the accident compared to 60% in the longer term. Whiplash can occur at very low speeds, i.e. at speed changes around 5 mph, particularly in rear collisions. At these speed changes there may not be any evidence of damage to the vehicle.*

**Whiplash is a common injury in car accidents, particularly to front seat occupants**

*Seat belts help save occupants from serious and fatal injury, but they cause more whiplash injuries than being unrestrained. Surprisingly, head restraints, even correctly adjusted, have little effect on reducing the incidence of whiplash injuries. This is generally because the head restraint is too far behind the back of the head. New head restraints are emerging which move forward to meet the rearward moving head. As usual, though, these novel safety features are restricted to expensive vehicles, but will probably become standard on the general vehicle fleet in years to come.*

**Seat belts increase the incidence of whiplash and head restraints are of limited use**

*Whiplash injury is usually transitory, but a small proportion of those affected can still be suffering debilitating consequences months and even years afterwards. Whiplash is almost impossible to detect medically though, and fraudulent claims are not uncommon.*

**Whiplash can occur at very low speeds, and the effects can be felt years afterwards**

**What information do I need in a car accident claim?**

*As usual, the police report should be obtained along with any report produced by an accident investigation officer. Any plans and photographs should also be obtained as well as statements from witnesses and involved parties.*

**Whiplash is nearly impossible to detect medically leading to the possibility of fraudulent claims**

*As the vehicle often holds vital information efforts should be made to have the vehicle preserved and examined by an expert. Too often, though, vehicles have been repaired or scrapped before proceedings are under way.*

*Often, the police will mark scene evidence with paint. These paint marks can still be evident many months after the accident. It is therefore useful to have the accident scene examined. Such an examination may also produce evidence of restricted visibility or some kind of road defect.*

**Try to have the vehicle preserved in its damaged state so it can be examined**

**Free initial discussions and assessment**

*If you wish to discuss any case free of charge, want to send a file for a free assessment, or want a quote or to instruct us, please use the contact details below.*

**If the vehicle is no longer available, try to obtain photographs**

*With our compliments*

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