



# Considering low velocity impact evidence at trial

Despite a wide range of evidential tools, assessing whether a low velocity impact accident has caused genuine whiplash or a mere jolt remains a complex task, says **Dr Mark Burgin**

As I walked into the court to give evidence for a low velocity impact (LVI) case there was a moment that I was actually worried that the case would be cancelled.

I have written many replies to LVI part 35 questions, and as the single joint witness I did not expect hostile cross examination.

I was however taken through my knowledge on the subject and given an opportunity to explain this complex area to the court.

## Whiplash or jolt

Many reports and report writing systems state the claimant suffered 'whiplash' or moved in a 'whiplash type of motion'.

This is true of forceful impacts from the front or rear but the movement in low velocity impact is more often only a jolt.

Jolts can cause injury to soft tissues around an area of weakness or previous injury or if the claimant was in an awkward position at the time of the impact.

Was it whiplash, I was asked? "on balance, no," I replied.

Threshold is the next main question. There has been research on previously normal, prepared subjects with correctly adjusted seats which appeared to indicate a threshold of delta V of 5 mph below which injury could not occur. This is rare in LVI cases, and in this case, the claimant's threshold to injury was lowered by pre-existing condition.

## Delta V or G force?

Delta V is the change of speed, but G force – the change of the change of speed – is more important.

If driving on the motorway at 70 mph and slowed to zero there would be a delta V of 70 mph.

No injury would occur if the G force did not exceed the person's threshold for injury, with 3G traditionally used as an example of a possible threshold below which no injury may occur.

In 2012 Mike Brockman, of insurethebox, gave a presentation entitled 'Use of

'black box' data in assessing claims' at an international whiplash conference.

The company fits acceleration measuring devices to cars and Mr Brockman said its records showed that 30 per cent of impacts under 10 mph were associated with 3G forces.

That LVI does not always lead to low G force may explain why some LVI cause injuries in previously normal individuals.

## Engineering reports

Engineering reports often just give a description of the damage to one or both cars with pictures and occasionally some disassembling.

But the reports that GP experts fear, are the ones that indicate the force of impact from the damage noted.

Engineering reports are far more accurate when high energies are involved than low velocity.

It is not generally known why impact damage correlates poorly with the velocity at low speeds. Bumpers have been designed to not damage at low velocity, and even where damage occurs it may not be easily visible – only the 'slam panel' behind the bumper may be damaged, cracking may be minimal as the bumper returns to its normal shape, or there may be elastic deformation following impact, with the bullet car stopping and the target car moving about the same speed as the collision. A number of LVI engineering reports do not include these possibilities, but I do not have to be an engineering expert to ask why the engineering report has not provided me with a range of G forces that are consistent with the damage.

## 100% worsening

Some expert reports use a percentage system, stating, for instance, that 25% was due to the pre-existing problems and 75% was due the index accident.

I use the concept of 100% of the worsening was due to the accident. My argument is that loss must be calculated as the change from the level of function that

the claimant had before the accident.

It is therefore confusing to state loss due to the accident but overall detail all symptoms whether caused by the accident or not.

In LVI cases it is important to clearly explain to the court that the expert has taken into account any pre-existing conditions.

The next question was why the claimant still had minor symptoms after the prognoses. The answer was simply that the claimant had pre-existing problems and had both increased body awareness and misattribution of ongoing symptoms as relating to the index accident contributed to the continuing symptoms.

## Objective factors and reliability

There is a range of opinion with some muscular skeletal practitioners stating that physical signs are objective and others stating that any signs can be simulated.

My opinion is that while it is likely that some practitioners can detect objective features on examination, these could be related to the accident or related to pre-existing problems.

Review of the medical records remains the main objective measure where an expert has to explore reliability. Where LVI is alleged I recommend early review of medical records.

## Sum of parts

LVI is partly reliability of the claimant, partly a careful examination for pre-existing problems and partly explaining medically how an honest claimant can be injured without significant damage to the vehicles.

**Dr Mark Burgin** (BM BCh MRCGP) has been working as a medical-legal expert and produced medical-legal reports regularly since 2000. He was in active clinical practice as a general practitioner from 1995 to 2011, seeing patients on a regular basis. Since 2011 he has been working as a Disability Analyst seeing claimants and preparing reports on the level of disability."