

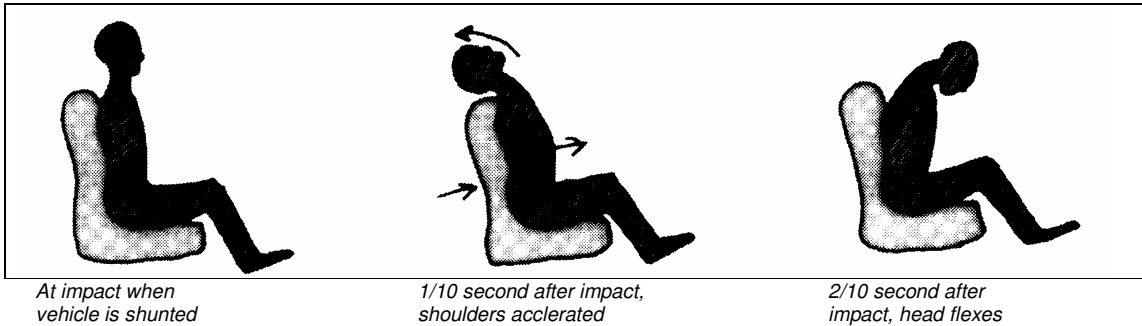
WHIPLASH

While you were waiting for the lights to change, some idiot shunted into the back of your car. You're feeling dazed and confused. And what is that nasty sensation in your neck? Dr John Tanner explains what can happen

Whiplash injury sustained in motor vehicle accidents has become common place in our society due to ever increasing numbers taking to the roads. It has been recognised as a significant problem largely due to the increasing numbers of insurance claims and the proportion of victims who continue to suffer pain and disability long after the claim has been settled.

The term 'whiplash' describes the mechanism of injury occurring in a rear-end collision whereby the passenger or driver is subjected to a sudden acceleration of the trunk and shoulders below the head due to the momentum of the car or truck behind (see illustrations). This causes hyperextension of the neck within a tenth of a second, immediately followed by a hyper-flexion of the neck as the head then accelerates forward over the next tenth of a second. The force imparted to the soft tissues and joints of the neck depends on the speed and weight of the colliding vehicle; whether the victim's car is stationary or moving forward; the position of the neck and head; whether the occupant anticipated the impending collision; and use of head restraint and seat belt.

POSITION OF BODY



If you have experienced this sort of injury, you will probably remember that the first reaction is 'shock'. People are initially numbed, disorientated and anxious in the first moments but rarely notice much pain. If there is severe pain immediately in the neck region, it tends to suggest a more serious injury. Most victims, however, either go home after sorting out the accident details or if advised attend the local Accident and Emergency department to be checked out.

AT THE HOSPITAL

By the time you arrive at the hospital, you may be experiencing some neck pain and stiffness, possibly soreness across the right side of the upper chest and shoulder from seat belt bruising, and occasionally some aches and pains elsewhere, such as the lower back. If the doctor who examines you is satisfied there is no bony injury, you will not be x-rayed but probably sent home with a soft collar and pain killers. You may be asked to report to your doctor in a week or so if you are still having problems.

If, however, your neck is already very tender and your movements restricted, or if you have numbness, tingling or pain in either arm or hand, x-rays may be taken to rule out any bony injury.

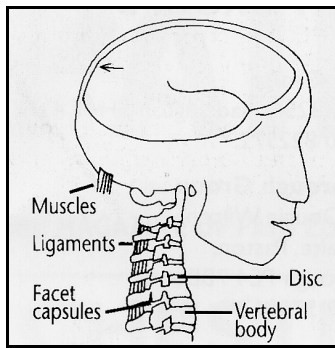
Most people are not too bad on the first day, but wake up the next morning with much more neck pain and stiffness and the feeling of having been run over by a truck! Sometimes the worst time is even two or three days later.

ALL IN THE MIND?

Whiplash victims may wish to claim compensation for personal injury and many people feel quite justified. After all, "It wasn't my fault, my new Rover's been written off and I've a serious pain in the neck into the bargain". What they may not realise is that, even after the other vehicle's insurers have finally accepted liability, which may take many months, claims for this sort of injury usually take years to settle. Claimants are rarely awarded more than one or two thousand pounds, perhaps five thousand if you have been unable to return to work for a long time. Awards depend on loss of earnings, evidence of continuing pain and disability and a medical report that indicates a strong likelihood of continuing problems.

In various countries, whiplash claims vary widely from 13 per 100,000 population in New Zealand, to 450 in Great Britain, up to 850 per 100,000 in British Columbia. There could be a number of reasons for this such as busier roads, and more cars, perhaps worse drivers in those countries where the claim rate is higher. In Greece and Lithuania the whiplash claim rate is zero because no compensation is awarded! Surprisingly, studies done in these countries show that whiplash is rarely, if ever, a problem either in the short or long term.

Some people may believe that there are subtle factors that come to play on the victim's mind when they are in shock, made a fuss of, encouraged to claim for injury and feel aggrieved. However, in my own experience there are soft tissue injuries and joint trauma which do need early and appropriate treatment and advice. People often do not receive the right advice early enough. To be referred to a physiotherapist three months down the line may already be too late to prevent chronic disability.



Structures subject to strain or compression when head flexes

SO WHERE IS THE DAMAGE?

Injury can occur at many sites during each phase of the whiplash. The brain can be jarred within the skull, accounting for the mild post-concussional state that some victims experience. This includes loss of memory and difficulty in concentrating for some weeks or months.

In the majority of cases the injury is in the form of strain to *soft tissues* which include muscles and ligaments. Only rarely is there more serious damage to bone or rupture of disc.

The facet joints at the back of the spine can be jarred and then become painful. This may lead to chronic pain. Nerves joining the spine can become over-stretched and cause neural symptoms in the arm. Occasionally a nerve can become compressed by protruding disc material.

SELF HELP AND TREATMENT

The key to recovery is early return to activity despite how shaken or sore you feel. This has been shown by recent research in Norway and is supported by other guidelines. Whether you are advised to wear a collar for two weeks and stay off work or to "act as usual", eighty per cent recover fully. But the people who pursue the more active course feel better.

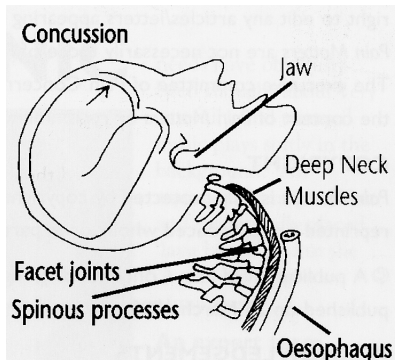
The recommended treatment options are based on current research evidence and/or consensus amongst experts.

A. Treatment for those with neck pain, stiffness, and musculoskeletal signs

- Normal activity.
- Reassurance.
- Education.
- Range of motion exercises, self-conducted or supervised.
- Mobilisation/manipulation for a short period.
- Pain killers or anti-inflammatories for a short period.

B. Treatment for those with signs of nerve root irritation or compression

- Modified activities for first few weeks.
- All of above in section A, except normal activity.
- Collar (no more than three days).
 - Surgery - only if there is progressive nerve damage or bony injury.



Not recommended

- Prolonged use of collar.
- Prolonged use of passive therapies (for example, heat/ice, ultrasound, interferential therapy).
- Rest.
- Medications such as sedatives, relaxants or long-term use of opiates. These may lead to dependency and prolongation of symptoms.

In my own experience, some patients with localised joint pain and tenderness respond well to the facet joint injections. Rarely, some people persist with symptoms suggesting "clinical instability". Ligaments, joint capsules and even the outer wall of the disc have been over-stretched or partially torn, leading to symptoms of deep aching in sustained postures and episodes of "locking" or sudden "catching" with resultant muscle spasm.

These symptoms may respond to a course of a treatment called Ligament Sclerosant (Prolotherapy). An agent is injected into the overstretched soft tissues to strengthen and thicken their fibrous attachments, thereby restoring their natural restraining influence on excessive joint movement. These treatments are not widely available and deserve further research.

Post-traumatic stress disorder, which is the modern term for "delayed shock", may contribute to long-term problems if not recognised and dealt with appropriately. As a victim you have perceived the accident as life threatening and become fearful of driving, breaking out in a cold sweat or panic whenever a car closes behind you. You may avoid the accident scene, re-live the accident in daydreams frequently, experience flashbacks or nightmares. If this has changed the pattern of your life, leading to avoidance of certain places or situations, you may need help from a clinical psychologist.

THE IMPORTANT POINTS TO REMEMBER

- 50% of whiplash patients return to usual activity by six weeks after injury.
- Permanent harm is very rare. Symptoms reduce with time, leading to a good outcome long-term.
- If your x-rays show degenerative joint disease, this is not a cause or result of your injury but a common finding in the population of adults over thirty years of age.
- When driving, adjust your headrest so it is as close as possible to the back of your head, stay alert and ensure your brakes are working properly. You might save someone else from whiplash! ■

Dr John Tanner works at Oving Clinic, Chichester and Salisbury District Hospital, where he is a member of the pain management team. He is author of *Beating Back Pain*, published by Dorling Kindersley.