

# Caution when driving after orthopaedic surgery

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There are no well-established guidelines for determining when it is safe to drive after an orthopaedic injury or treatment.

Control of a motor vehicle requires co-ordination of motor and cognitive skills. You must be able to use both your upper and lower limbs with adequate range of motion, speed, power and co-ordination to safely operate what is potentially a dangerous missile if not properly controlled.

The arms are needed to steer and indicate (and perhaps shift gears) and the legs are used mainly to brake and accelerate (or use the clutch).

In general, the definition of what constitutes an impaired driver is decided on a case-by-case basis and the ultimate responsibility for the decision to drive rests with the patient.



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There is some concern that by clearing the patient to drive we are exposing ourselves to liability for injuries incurred by or caused by the patient.

The following should be considered when assessing the ability of a patient to drive:

- the strength of muscles to safely carry out driving functions
- the level of flexibility of individual joints or limbs to allow adequate mobility for

safe driving

- the presence of pain that may impede movement and reduce the level of safety
- the person's endurance
- the person's sensory abilities.

Advice from Austroads is unhelpful:

“A person should generally not drive for a period of time after major orthopaedic surgery. This should be determined by the treating doctor and is not a licensing issue. Guidance regarding management of short-term conditions is included in Part A”.<sup>1</sup>

While there is a lot we do not know, below are some factors which have been examined.

### **Lower limb injury**

After lower limb surgery the interesting issue is the effectiveness of, and time taken to perform, an emergency stop.

It is fairly obvious that patients should not drive with a cast or brace on the right leg or if they are still experiencing pain when weight-bearing on the limb. If they are driving an automatic car then surgery to the left lower limb is usually not an issue (unless they are using analgesics which affect their cognitive abilities).

If all goes well then most patients will be able to brake effectively four weeks after a knee arthroscopy and four to six weeks after a total knee replacement — but this is patient-specific and varies.

Many patients will not be able to brake safely even three months after a knee replacement if they are having trouble restoring their range of motion or still have pain.

It may be as much as nine weeks for an ankle fracture; and a minimum of six weeks from when they start to weight-bear for a lower limb fracture.

Some patients will tell you that they can use their left foot to brake but this has been shown to have a slower 'reaction' time than standard right-footed braking and cannot be recommended as a safe option.

The last issue is whether braking hard will damage the surgical repair performed. This is unlikely to be the case in a knee replacement or arthroscopy but could be the case in an ACL reconstruction.

There is a correlation between braking ability and the 'step test' and 'stand test' and these can be helpful but should not be used in isolation when deciding fitness to drive:<sup>2</sup>

### **Upper limb injury**

The use of both arms is essential to safely operate an unmodified vehicle. It has been shown that anyone wearing an upper extremity cast would fail a driving test. This applies to above- and below-elbow casts and is worse when the thumb is included in the cast.

Drivers in casts tend to have worse responses to hazards in a driving simulator and also drive more cautiously.

Drivers wearing a sling were involved in significantly more crashes than those using both arms.

### **Summary**

Driving is an important function for patients. It is obvious that a patient should not attempt to drive when it is not safe to do so; but knowing when they are safe is very difficult.

The times noted above are guidelines at best and decision-making should be individualised to each patient.

On the whole it is better to wait longer if you or the patient do not feel confident about their emergency braking ability. It is my recommendation that any patient wearing any form of splint or sling not operate a motor vehicle.

### **References:**

1. Assessing Fitness to Drive 4th edition 2012;  
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2. Hau, R, Csongvay S, Bartlett J: Driving Reaction time after right knee arthroscopy. Knee Surg Sports Traumatol Arthrosc 2000;8(2):89-92