Cardiovascular conditions

Managing driving with a CRM device

Cardiac rhythm management (CRM) devices are a range of electronic devices implanted into the body to monitor or treat heart rhythm disorders. The three main groups of devices include pacemakers, defibrillators and loop recorders. Use of these devices is widespread and increasing, with new device implants increasing from 20,000 in 2013 to just under 40,000 devices in 2021. While many people who live with CRM devices are able to continue to hold a licence and return to driving, Assessing Fitness to Drive outlines important guidelines to support safety of drivers and the public alike.

What are the types of cardiac rhythm management devices?

Pacemakers

What are they and how do they work?

Pacemakers are implanted to treat slow heart rhythms or blackouts. They monitor the heart's electricity every heartbeat and are programmed to send small electrical impulses to stimulate the heart to beat if the heart rate drops too low.

Pacemakers consist of a battery unit (generator) that sits under the skin below the collarbone and 1-3 wires that connect to the heart. Pacemakers are the most common type of CRM device and account for around 70% of devices.

How do they affect safe driving?

Driving with a pacemaker is very safe. After insertion of a pacemaker, a minimum non-driving period of 2-weeks for private vehicle drivers and 4-weeks for commercial vehicles drivers is recommended. This non-driving period will be determined by the treating doctor or specialist.

If the pacemaker is successful in managing the condition, drivers can usually return to driving on a conditional licence and will be required to have a periodic review with their doctor (annually in the case of commercial drivers) as a condition of holding their licence.

Pacemaker batteries last an average of 7-10 years, after which time the battery pack will need to be replaced: this is called a 'generator change'. Patients are usually able to return to driving the day after a pacemaker generator change.

Defibrillators

What are they and how do they work?

Defibrillators are used to treat certain dangerous fast heart rhythm disorders called ventricular tachycardia (VT) and ventricular fibrillation (VF). VT and VF are very serious rhythm disorders that can result in severe dizziness, blackout or cardiac arrest.

If an episode of VT/VF is detected, the defibrillator will attempt to force the heart back into a normal rhythm, either by trying to take over the rhythm of the heart with rapid stimulation or by providing a high voltage impulse or 'shock' to the heart. Like pacemakers, they consist of the battery unit (generator) and 1-3 wires that connect to the heart. Defibrillators can be inserted to proactively prevent possible episodes of VT /VF in the future (primary prevention) or they can be inserted after person has already had an episode of VT /VF to prevent recurrences (secondary prevention).

How do they affect safe driving?

Unfortunately, even after implantation of a defibrillator, an episode of VT or VF may still cause severe dizziness or blackout. For this reason, there are strict rules about driving with a defibrillator.

After insertion of a **primary prevention defibrillator**, there is a minimum 2-week non-driving period for private vehicle drivers and a minimum 6-month non-driving period for commercial drivers. Return to driving on a conditional licence depends on the response to treatment and will require periodic review (annually for commercial vehicle drivers) as a condition of ongoing licensing.

For **secondary prevention defibrillators**, the minimum recommended non-driving period for private drivers is 6-months, after which they may be considered for a conditional licence with periodic review by their specialist. People with secondary prevention defibrillators are not eligible to hold commercial driving license.

The battery unit for a defibrillator lasts an average of 5-10 years, after which point it requires replacing (generator change). A minimum non-driving period of 2-weeks applies after a defibrillator generator change. If a defibrillator is activated to manage

an episode of VT/VF (i.e., an appropriate shock is delivered) and this is associated with severe dizziness or blackout, the person should not drive for at least 4 weeks. The period of non-driving will be advised by the treating doctor.

Loop recorders

What are they and how do they work?

Loop recorders are small devices approximately the size of a USB stick. They are implanted under the skin on the left side of the chest with no wires travelling into the heart. Loop recorders are used to monitor for heart rhythm disorders. They record episodes of fast or slow heart rhythms and send that information to doctors. Loop recorders have a battery life of about 3 years, after which point most patients will have them removed. They only provide monitoring and do not treat the heart rhythm disorders.

How do they affect safe driving?

Driving with a loop recorder is safe, provided they don't have an underlying condition that precludes driving (see below). Both private vehicle drivers and commercial vehicle drivers are able to return to driving the day after a loop recorder is inserted.

Other important considerations

Importantly, driving restrictions for people with CRM devices may relate not only to their device but also to their underlying medical condition or recent circumstances. For example, if a loop recorder is inserted due to a blackout, a minimum non-driving period of 4-weeks from the time of the blackout applies.

A second example relates to people who live with a primary prevention defibrillator who wish to acquire a commercial vehicle license. In this situation, other factors related to the underlying cardiac condition may prohibit a commercial vehicle license, even if the defibrillator itself is working well.

Talk to your treating doctor

All recipients of a CRM device should discuss a return to driving plan with their cardiologist, which should include discussions about regular follow up at least once per year. While most CRM device recipients still have face-to-face follow-up, some have the option of remote monitoring over telehealth appointment. Follow up appointments should discuss safe driving, in addition to assessing the remaining battery life of the device and to troubleshooting or optimize the device settings.

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Further reading

Assessing Fitness to Drive for commercial and private vehicle drivers Austroads 2022.

Pacemaker information National Heart Foundation of Australia.

Defibrillator information National Heart Foundation of Australia.

Cardiac arrhythmia information National Heart Foundation of Australia.

Need more information? Contact the driver licensing authority in your state or territory

https://austroads.com.au/drivers-and-vehicles/assessing-fitness-to-drive/licensing-authority-contacts

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