

# Patients with cardiac devices do not adhere to driving ban

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Nearly one-third of patients with an implantable cardioverter defibrillator (ICD) resume driving despite it being medically contraindicated—a practice that is dangerous for themselves and others, and is illegal in some countries. The Danish research is presented today at ESC Congress 2019 together with the World Congress of Cardiology.

ICDs are implanted to correct potentially lethal ventricular arrhythmias (heart rhythm disorders) and reduce the risk of sudden death. Some patients receive an ICD for [primary prevention](#): they have not had a [cardiac arrest](#) or [ventricular arrhythmia](#) before but are at increased risk—typically those with heart failure. Others receive an ICD for secondary prevention: they have already experienced and survived either a cardiac arrest or ventricular arrhythmia, are at even higher risk of further arrhythmias, and are subject to a longer driving ban.

The length of driving bans varies by country. The ESC recommends a permanent ban on all professional driving (e.g. heavy trucks, buses). Driving for personal use is banned for four weeks after ICD implantation for primary prevention, and three months for secondary prevention. If the ICD delivers a shock to correct an arrhythmia, there is also a three-month driving ban. Danish guidelines differ in one respect: primary prevention ICD patients can drive after one week, granted they are on home-monitoring for their ICD.

"It is the underlying heart condition and not the presence of the ICD device itself that is cause for concern, since it might cause an arrhythmia

and loss of consciousness, and thus potentially great harm to the patient or bystanders if occurring while the patient is behind the wheel," said study author Dr. Jenny Bjerre of Gentofte University Hospital, Denmark. "That is why patients refusing to have an ICD implanted for secondary prevention are subject to driving restrictions as well."

It is unclear how many patients are aware of, and adhere to, these restrictions. This study investigated these issues in a Danish nationwide cohort of ICD patients. A questionnaire was sent to the 3,913 adults who received a first-time ICD between 2013 and 2016. Additional data was obtained from national registries.

Of 2,741 respondents, 2,513 (92%) had a valid driving licence at the time of ICD implantation and 175 drivers (7%) also had a licence for professional driving. More than 30% of ICD patients, including professional drivers, resumed driving during the banned period. Up to 60% could not recall being informed of any restriction.

Patients who said they were unaware of the restrictions were three times more likely to drive when banned than those who reported being informed. "Not surprisingly, this was the largest predictor of nonadherence to the restrictions," said Dr. Bjerre. "However, we also found that some ICD patients who recalled being informed chose not to adhere to the restrictions and drove anyway."

Dr. Bjerre noted that in Denmark, physicians are responsible for informing patients if a medical condition leads to any driving restrictions. "Information is the key word here," she said. "These driving restrictions are worthless if we do not tell patients about them. On the other hand, patients do not remember everything they are told, and if you have recently survived a cardiac arrest, driving restrictions might not be your biggest concern. Better communication is required—for example by repeating the information, also in writing, explaining the

rationale behind the restrictions and including family members in the discussions. We also need more studies on the absolute risk of traffic accidents in this patient population."

Men were 50% more likely to drive while banned than women. Patients 60 years and older were 20% more likely to drive while banned than younger patients. And being the only driver in the household was linked with a 30% greater likelihood of driving while banned than those who lived with other people who could drive.

Dr. Bjerre said: "We can only speculate on why these groups were more likely to be nonadherent. Overall, we believe the necessity of a car in daily life is the most important factor. It is not hard to imagine an ICD patient might feel isolated, have trouble running errands, etc., during a period with driving restrictions, especially if they are older and living alone."

The penalty for driving while banned depends on national legislation. In Denmark, there is a risk of legal prosecution and/or insurance-related consequences if an ICD patient is involved in a traffic accident during a period with a documented medical driving restriction.

But Dr. Bjerre said: "The Danish police are not automatically informed about driving restrictions for medical reasons. In another qualitative study we performed on the topic, some ICD patients stated this lack of consequence as one of the main reasons for nonadherence."

**More information:** "Adherence to driving restrictions among patients with an implantable cardioverter defibrillator: insights from a nationwide register-linked survey study" ESC Congress 2019.

Consensus statement of the European Heart Rhythm Association: updated recommendations for driving by patients with implantable

cardioverter defibrillators, *Europace* (2009). DOI: [10.1093/europace/eup112](https://doi.org/10.1093/europace/eup112)

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