

# Implementation of smoke-free legislation reduces the number of acute myocardial infarctions by 11 percent

January 23 2013

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Researchers participating in the REGICOR Study (Girona Heart Registry), with the participation of IMIM (Hospital del Mar Medical Research Institute) from Barcelona, the Josep Trueta Hospital, the Blanes Hospital and IDIAP Jordi Gol from Girona (Primary Healthcare Research Institute) have carried out a study to assess the impact of the partial smoke-free legislation passed in 2006 on the incidence of acute myocardial infarction in the province of Girona and observed it has dropped 11%. This decrease has been noticed especially among women, population aged between 65 and 74, and among non-smokers.

Researchers analysed data from 3,703 infarctions occurred in Girona between the years 2002 and 2008 and studied whether the number of infarctions had dropped during the period 2006-2008 (after the implementation of the law) compared to the data from the period running from 2002 to 2004 (before the law was in place). According to Irene Roman, researcher in the cardiovascular epidemiology and genetics research group at IMIM and one of the first signatories of the article, "the data from the study show that the total number of infarctions occurring in the population (whether they were treated in hospital or not) has dropped 11% in the period after the implementation of the law (2006-2008)."

Another important point is that this reduction has been observed basically among the group of non-smokers (-15%) and people aged over

65 (-18%). This, according to Roberto Elosua, the coordinator for research in [cardiovascular epidemiology](#) and genetics at IMIM, suggests that "the [population group](#) that has benefited the most from the law passed in 2006 is that of non-smokers, since their passive exposure to [tobacco smoke](#) has decreased".

[Coronary heart disease](#) occurs when not enough blood reaches the heart to supply its [muscle cells](#), and is the main cause of death in [industrialised countries](#). In Spain, the most recent statistics show that this disease in 2011 caused 35,268 deaths (9.2% of the total) and 52,725 patients were taken to hospital with an [acute myocardial infarction](#), which is one of the most severe consequences of coronary [heart disease](#). Besides the impact this has on the health of individuals, acute myocardial infarctions have a huge economic impact on society, with an estimated annual cost in Spain of around 1.46 billion Euros.

One of the main risk factors causing acute myocardial infarctions is smoking. In Spain, around 30% of the adult population state they are smokers; even if this percentage has dropped slightly, it continues to be high and has a great impact on cardiovascular health. It is estimated that smoking is the reason behind 20% of the burden of heart disease in European countries, and that passive exposure to tobacco smoke causes around 2,500 of the deaths due to coronary heart disease (7%) in Spain.

Spain has passed two smoke-free legislations: one in December 2005 (Law 28/2005), which entered into force on January 1st 2006; and another one in December 2010 (Law 42/2010) which entered into force on January 1st 2011. The first of these two laws was considered a partial smoke-free law since besides regulating the selling and advertising of tobacco, it banned smoking in the workplace and in hospitality establishments larger than 100 m<sup>2</sup> (unless a specific smoking area was created). However, in hospitality establishments smaller than 100m<sup>2</sup> it was left to the discretion of the owner of these establishments. In the law

of 2011, smoking was banned in all public places.

At present, the effect of the smoke-free legislation which entered into force 2011 is yet to be studied; however, according to researchers, results seen from the partial smoking ban in public places would support the effectiveness of this type of legislation in reducing the burden of disease among the population.

**More information:** "Impact of a partial smoke-free legislation on myocardial infarction incidence mortality and case-fatality in a population-based registry: the REGICOR Study". Fernando Agüero, Irene Roman Dégano et al. *Plos One*.

[dx.plos.org/10.1371/journal.pone.0053722](https://doi.org/10.1371/journal.pone.0053722)

Provided by IMIM (Hospital del Mar Medical Research Institute)

Citation: Implementation of smoke-free legislation reduces the number of acute myocardial infarctions by 11 percent (2013, January 23) retrieved 11 May 2024 from <https://medicalxpress.com/news/2013-01-smoke-free-legislation-acute-myocardial-infarctions.html>

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