



**Irish Heart
Foundation**

**Submission to Fingal County
Council aircraft noise consultation
public consultation**

February 2022

Irish Heart Foundation submission on the Dublin airport aircraft noise consultation public consultation

1. Introduction

The Irish Heart Foundation welcomes the opportunity to contribute to Fingal County Council's Dublin airport aircraft noise pollution public consultation. It allows for organisations and residents to present their position to ensure that Dublin Airport operates in a sustainable manner that suits the needs of all stakeholders involved. Understandably, the impact that the airline sector has on the environment is often viewed through the lens of the high levels of greenhouse gas (GHG) emissions that aircraft emit, to the detriment of air quality and global warming.

However, over the past decade, further research has been conducted which reveals the deleterious impact that noise pollution has on human health, particularly on the cardiovascular system. Too often, the negative impact of noise pollution on health, as well as the local fauna, has been overlooked or dismissed as being negligible. Until relatively recently, we have not known the true extent of the link between noise pollution and human physical and mental health

As the national charity dedicated to the prevention of heart disease and stroke in Ireland, the Irish Heart Foundation works to promote policies that will benefit cardiovascular health and reduce contributing factors such as physical inactivity, obesity, tobacco use, and air pollution.

In light of the recent research highlighting the negative impact of noise pollution on heart health, in this submission we will address the action that we believe Fingal County Council, Dublin Airport, and the Aircraft Noise Competent Authority (ANCA) must take to ensure that night-time aircraft activity at Dublin airport operates in a sustainable manner for the benefit of public health.

2. Current night-time activity

Fingal county council has opened a public consultation to review the submission made by the Dublin Airport authority (daa) to amend the planning conditions for night-time aircraft

activity for the new north parallel runway. Daa is seeking to amend the current approved activity to use the future North Runway from 6am to midnight, rather than 7am to 11pm.

Given the recent mounting evidence showing the negative impact of noise pollution on health, particularly on the cardiovascular system, and with Dublin airport located in relative proximity to residential areas of north county Dublin, the Irish Heart Foundation recommends that the existing runway and any future runway be restricted to the current activity of 7am to 11pm.

In this submission, we will set out the evidence and research that supports our position to maintain existing night-time activity restrictions for the benefit of public health.

3. Cardiovascular impact of noise pollution

As early as 1999, the World Health Organisation summarized the scientific evidence on the harmful impacts of noise pollution on health and made recommendations in which the EU built its 2002 directive on management of environmental noise. In this report, the WHO set out that workers exposed to high levels of industrial noise over many years may show increased blood pressure and an increased risk of hypertension. Amongst children, it found that high levels of chronic noise contribute to feelings of helplessnessⁱ. Since then, the evidence outlining the true extent of the health impact has only grown.

In its 2011 burden of disease from environmental noise reportⁱⁱ, the WHO found that well-designed epidemiological studies found cardiovascular diseases to be consistently associated with exposure to environmental noise. These studies examined the relationship between transportation noise (particularly road traffic and aircraft noise) and cardiovascular effect on adults and children, and focused on mean blood pressure, hypertension, and ischaemic heart diseases as cardiovascular end-points. The evidence found a positive association that has only increased over the previous two decades.

More up to date evidence from 2020 by the European Environmental Agency found that environmental noise from traffic is a major environmental problem in Europe and that at least 20% of the EU population live in areas where traffic noise levels are harmful to healthⁱⁱⁱ. According to the EEA, traffic noise, including aircraft traffic, has been classified as the second biggest environmental threat to public health in western Europe, behind the air pollutant particulate matter. Long-term exposure to noise pollution has been well established to lead to non-auditory health effects such as annoyance, sleep disturbance, negative effects on the cardiovascular and metabolic system as well as cognitive impairment in children.

Regarding the specific impact on the cardiovascular system, noise pollution activates stress reactions in the body, leading to increases in blood pressure, a changing heart rate and a release of stress hormones. In addition, the cardiovascular related to noise exposure may also be a consequence of a reduction in sleep quality, caused by noise exposure during the night, among other additional or interrelated mechanisms. These chronic effects can lead to premature mortality.

As with many environmental risks to health, children and the elderly are disproportionately affected by noise pollution. Children exposed to noise pollution in either their home or at school can suffer from lower cognitive development, low mood, and fatigue. While elderly people may be more prone to suffering cardiovascular effects due to noise than younger adults. Moreover, people suffering from chronic diseases may have a higher cardiovascular risk due to noise than those without such pre-existing conditions.

A 2019 research project studied 498 adults over a 5-year period and gathered traffic and aircraft noise data for each person's home address. After adjusting for other factors that contribute to cardiovascular risk (including air pollution), worryingly they found that every 5-decibel increase in the average 24-hour noise level was associated with a 34% increase in heart attacks, strokes, and other serious heart-related problems^{iv}.

More relevant to this public consultation on night-time aircraft activity, a 2020 study examined nearly 25,000 cases of death from cardiovascular disease (CVD) from the Swiss National Cohort around Zürich Airport between 2000 and 2015 and investigated the potential acute effects of aircraft noise on mortality and the specific role of different night-time exposure windows by means of a case-crossover study design^v.

Deeply worryingly, the researchers' findings suggested that night-time aircraft noise can trigger acute cardiovascular mortality. The association was similar to that previously observed for long-term aircraft noise exposure.

Such disturbing conclusions and all of evidence outlined above must be taken into account by Fingal County Council and limit all night-time activity at Dublin airport to between 7am and 11pm. Any modification of this risks causing cardiovascular and other health risks to the public living in and around the airport in north county Dublin.

4. Conclusion

As outlined above, noise pollution can have a grave effect on physical, cognitive, and cardiovascular health. Not only would a second runway at Dublin airport and extended

night-time operating hours contribute to Ireland's greenhouse gas emissions which we have committed through legislation to reduce, it would harm the health of local residents living close to the airport.

In that regard and supported by evidence, the Irish Heart Foundation is encouraging Fingal County Council to restrict current aircraft activity on the existing and any future North runway at Dublin airport to the existing time of 7am to 11pm.

Ends

For further information, please contact Mark Murphy, Irish Heart Foundation 01-634 6948; mmurphy@irishheart.ie

References

ⁱ WHO. (1999). Guidelines for community noise. Available here:

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ⁱⁱ WHO Europe. (2011). Burden of disease from environmental noise. [Online]. Available here:

https://www.who.int/quantifying_ehimpacts/publications/e94888.pdf

ⁱⁱⁱ EEA. (2020). Environmental noise in Europe. Available here:

<https://www.eea.europa.eu/publications/environmental-noise-in-europe>

^{iv} Michael T Osborne, Azar Radfar, Malek Z O Hassan, Shady Abohashem, Blake Oberfeld, Tomas Patrich, Brian Tung, Ying Wang, Amorina Ishai, James A Scott, Lisa M Shin, Zahi A Fayad, Karestan C Koenen, Sanjay Rajagopalan, Roger K Pitman, Ahmed Tawakol, A neurobiological mechanism linking transportation noise to cardiovascular disease in humans, *European Heart Journal*, Volume 41, Issue 6, 7 February 2020, Pages 772–782, <https://doi.org/10.1093/eurheartj/ehz820>

^v Apolline Saucy, Beat Schäffer, Louise Tangermann, Danielle Vienneau, Jean-Marc Wunderli, Martin Rösli, Does night-time aircraft noise trigger mortality? A case-crossover study on 24 886 cardiovascular deaths, *European Heart Journal*, Volume 42, Issue 8, 21 February 2021, Pages 835–843, <https://doi.org/10.1093/eurheartj/ehaa957>