



**LMCA**

**LAKE MERRITT  
COMMUNITY  
ALLIANCE**

W: [lakemerrittcommunity.com](http://lakemerrittcommunity.com)

*Our mission: Advocating for the health and safety of Lake Merritt visitors, residents, and the environment.*

# NOISE POLLUTION

## A Serious Health Threat



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# Noise is a Health Risk (play to 2:36)



Source: University of Michigan School of Public Health. (2019, May 10). *Noise: The Health Risk We Ignore* [Video]. Youtube. <https://www.youtube.com/watch?v=msECuGxsCqo>

# Noise is an Underestimated Threat.

## What is Noise?

Unwanted and/or harmful sound, recognized as a public health hazard since 1968



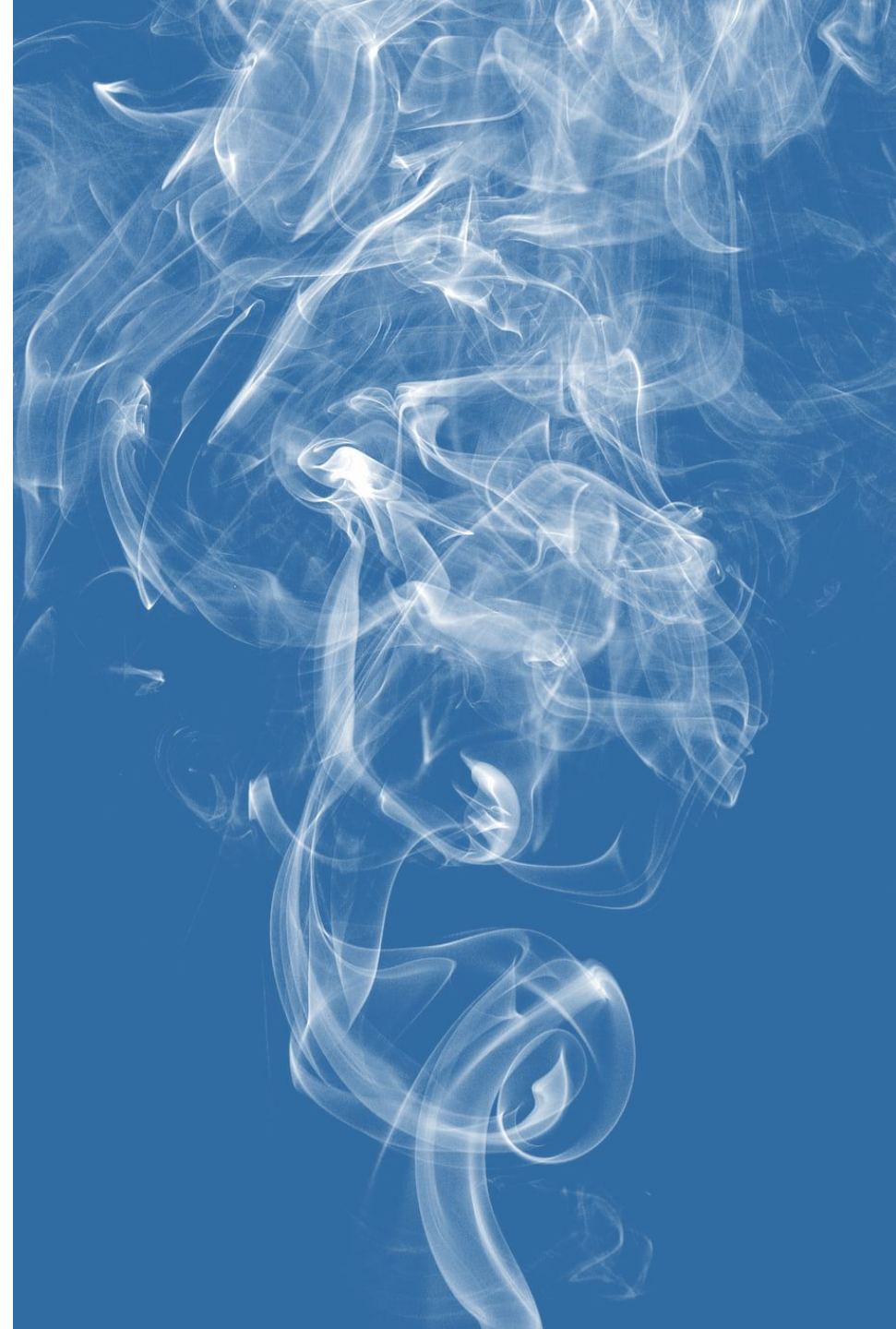
The World Health Organization:

Noise pollution is the second most harmful pollutant to air

# Amplified Sound: Human Health Impact

## Today's Secondhand Smoke

Noise pollution affects the health of those exposed to an indirect noise source, and can also cause health harms when people are asleep



# Amplified Sound: Sources at Lake Merritt

- Speakers
- Concerts
- Public address systems
- Personal audio devices
- Cars, motorbikes, and dirtbikes



# Amplified Sound: Human Health Impact

## Hearing

Noise-induced hearing loss (NIHL)



## Cardiovascular

Hypertension and increased risk of heart attacks and stroke



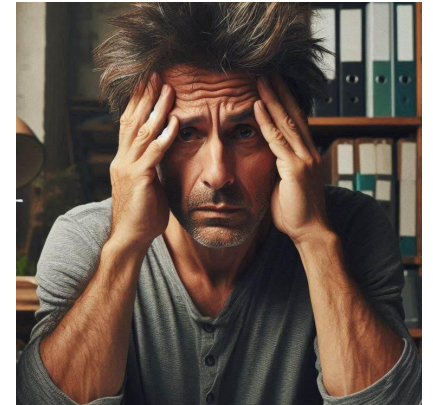
## Sleep

Disruption leading to stress and cognitive impairments



## Stress

Elevated stress levels and anxiety



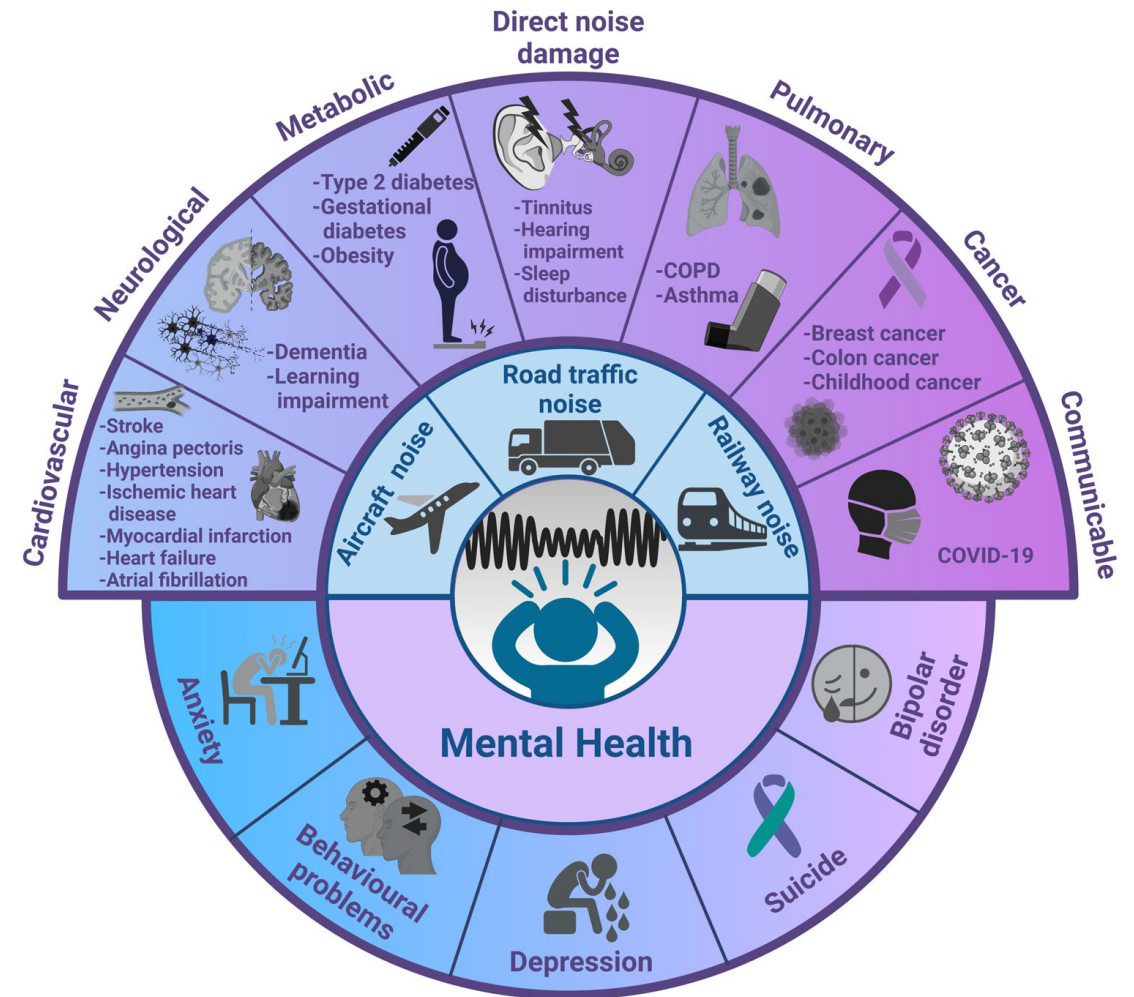
# Amplified Sound: Human Health Impact

## The Central Nervous System

A growing body of evidence points to the adverse effects of noise on the entire organ system, especially the central nervous system, leading to mental health impairment.

For children exposure can lead to learning disabilities, attention difficulties, insulin resistance, hypertension, stress ulcers and cardiovascular diseases.

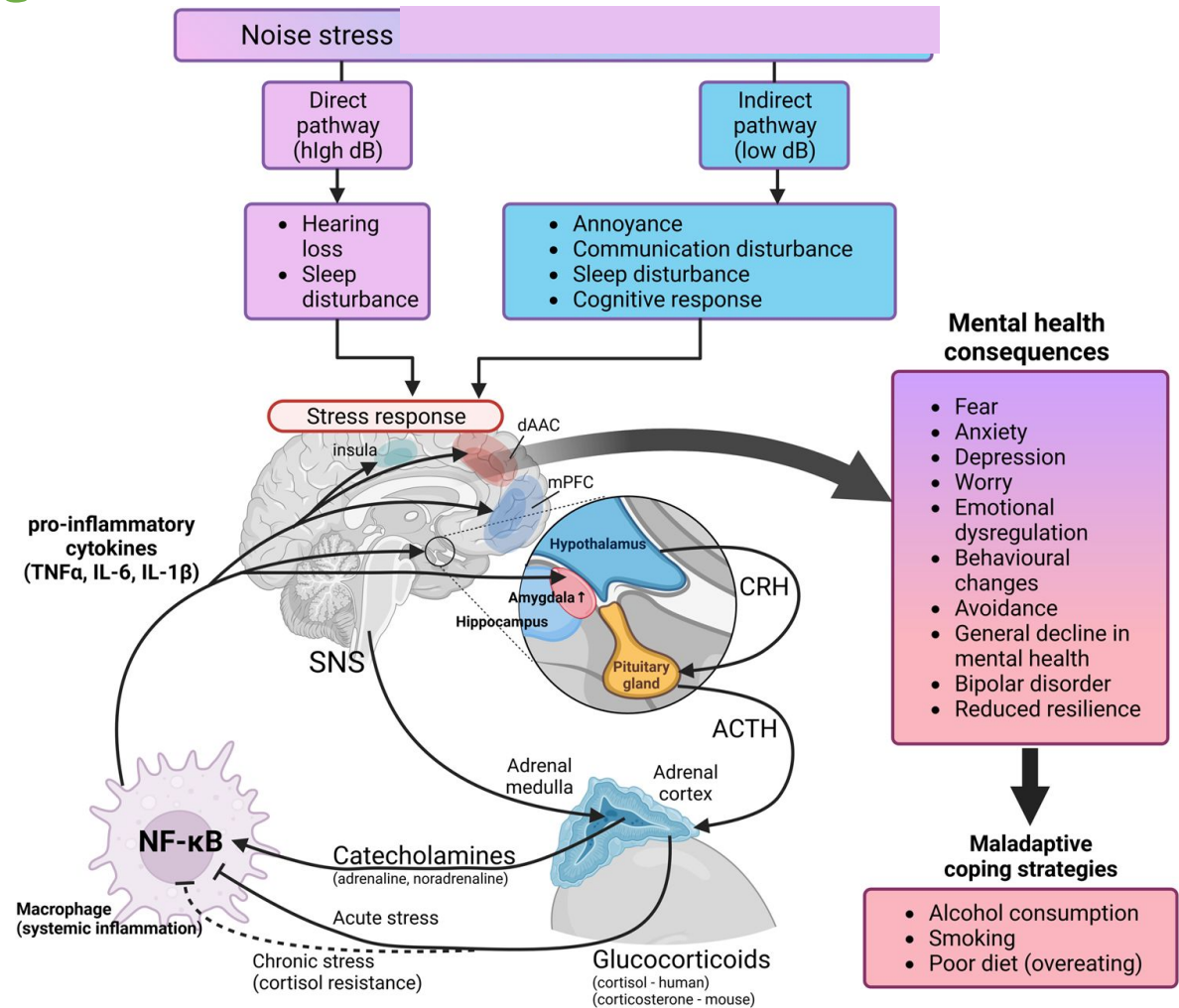
Source: Hahad, O., Kuntic, M., Al-Kindi, S. *et al.* Noise and mental health: evidence, mechanisms, and consequences. *J Expo Sci Environ Epidemiol* (2024). <https://doi.org/10.1038/s41370-024-00642-5>



# Amplified Sound: Human Health Impact

## The Central Nervous System

- Neuroinflammation from excessive noise triggers a stress response
- Sleep cycles can be disrupted
- Long-term exposure results in serious long-term health issues



Source: Hahad, O., Kuntic, M., Al-Kindi, S. *et al.* Noise and mental health: evidence, mechanisms, and consequences. *J Expo Sci Environ Epidemiol* (2024). <https://doi.org/10.1038/s41370-024-00642-5>

# Decibel Levels and Health Impact: Low Frequency Bass & Bodies of Water

- Low frequency bass travels farther and penetrates walls more effectively, increasing the impact on health even at lower volumes.
- Can cause structural vibrations and greater stress on cardiovascular and nervous systems.
- Bodies of water amplify and carry sound further

1. **Does Bass Go Through Walls?**
  - **Source:** Stellina Marfa
  - **Link:** Does Bass Go Through Walls?

# Amplified Sound: Wildlife Impact

## Birds

Disrupts communication, mating calls, eating, and navigation, leading to reduced reproductive success and increased mortality

## Mammals

Causes stress, changes in feeding behavior, and habitat avoidance

## Marine Life

Interferes with communication, echolocation, and predator-prey interactions

# Decibel Levels and Health Impact: Understanding the Danger Zones

*Decibels are measured on a logarithmic scale: each whole number represents a tenfold increase.*

- 30 dB: Minimal impact
- 40-50 dB: Potential sleep disturbance
- 60-70 dB: Increased stress and risk of hypertension
- 80-90 dB: Significant risk of hearing damage, cardiovascular issues
- 100+ dB: Immediate risk to hearing, severe health impacts



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*If you'd like to learn more or reach out with questions, please  
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