



THE IMPACT OF BUILDINGS ON COGNITIVE FUNCTION

STUDY 3: GLOBAL BUILDINGS



How does indoor air quality impact the
HEALTH, PRODUCTIVITY AND COGNITIVE PERFORMANCE
of office workers around the world?



STUDY FACTORS

The COGfx Study 3 took a global approach to explore the role of buildings in public health, examining the indoor environment and its effect on office workers in urban commercial buildings across the globe.

6 COUNTRIES



302
PARTICIPANTS



42
URBAN COMMERCIAL
BUILDINGS



30
CITIES



1
YEAR



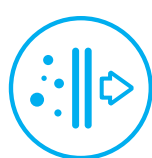
FOCUS AREAS

Through COGfx Study 3, researchers examined the associations between cognitive function and ventilation, which affects indoor concentrations of carbon dioxide (**CO₂**) and fine particulate matter (known as **PM_{2.5}**). This included occupants' ability to think, reason and respond.



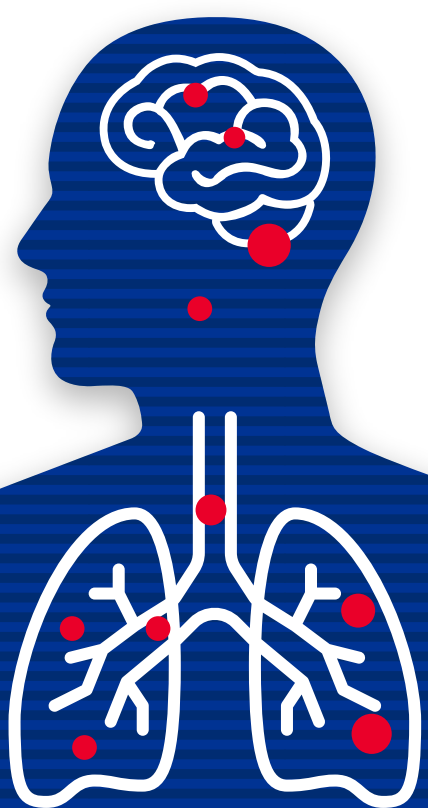
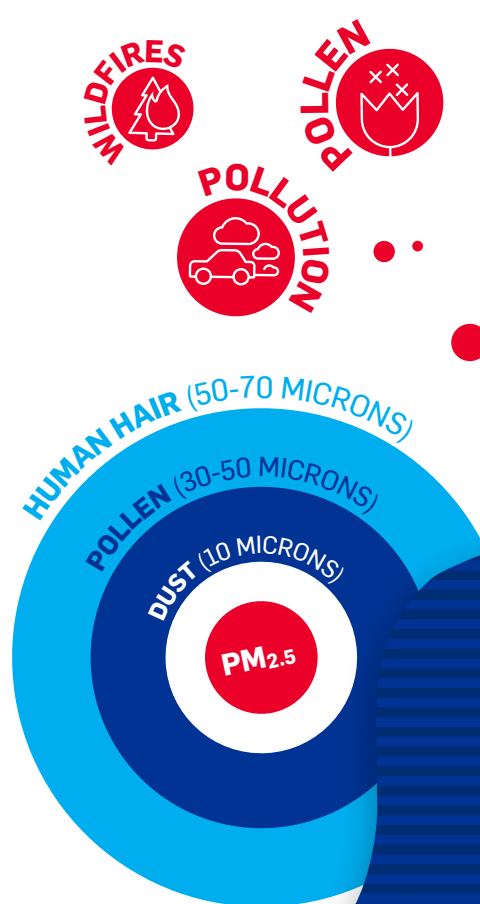
VENTILATION

Ventilation refers to the rate of air exchange in buildings. Ventilation rates can impact the concentration of CO₂ and other pollutants.



PM_{2.5}

PM_{2.5} refers to tiny particles in the air. They can travel deep into your respiratory tract, impacting your health and cognitive function.



REAL-TIME DATA

Using real-time environmental sensors in the urban commercial buildings and a mobile app that was custom developed for this study, researchers collected data and administered momentary assessments of cognitive function, health and satisfaction within the indoor environment.



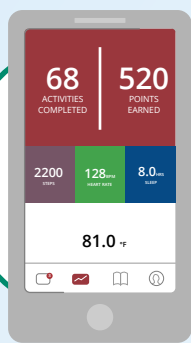
PARTICIPANTS

Office workers from a sample of urban commercial buildings volunteered to take part.



Environmental
Monitor

Harvard Healthy Buildings app



CONNECTED DEVICES

User-friendly smart technologies collected data.



Wearable
Monitor



RESEARCHERS

Harvard researchers captured and analyzed anonymous, real-time data through the Harvard Healthy Buildings app.



2 COGNITIVE TESTS

- Arithmetic
- Stroop test



Measured
**RESPONSE TIME &
ACCURACY**

#THECOGFXSTUDY

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THECOGFXSTUDY.COM

The COGfx Studies were led by researchers at the Harvard T.H. Chan School of Public Health.

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