

OnBREATHE: personal air quality monitoring & data digitalization to track chronic respiratory diseases



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AIR POLLUTION – THE SILENT KILLER

- **99%** of the whole global population breathes air that exceeds WHO quality limits, threatening their health [1].
- In **2017**, chronic respiratory diseases impacted over **544 million people** globally, representing a significant **increase of 39.8% since 1990** [2].
- Despite these alarming figures, **current** air pollution monitoring solutions lack a **personalized approach**, hindering a comprehensive understanding of individual exposure and its health impacts.

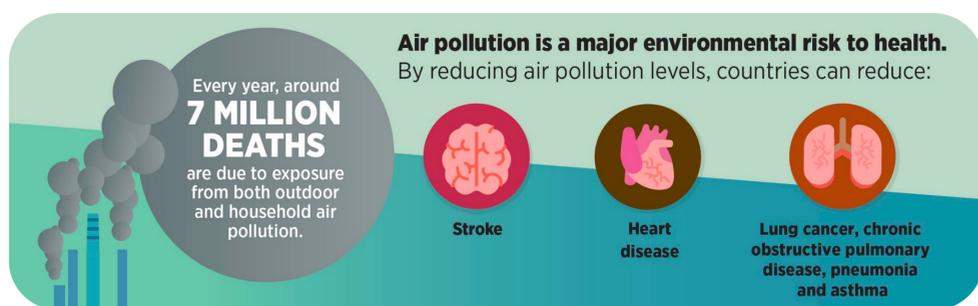


Fig. 1. Main health risks linked to air pollution.

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OUR SOLUTION: ONBREATHE

- OnBREATHE: personal air quality monitoring & data digitalization to track chronic respiratory diseases.
- **Objective:** develop an **innovative** wearable passive device to monitor exposure to air pollutants and track the respiratory health.
- By enabling preventative and personalized healthcare strategies, it aims to address critical public health challenges of the 21st century.

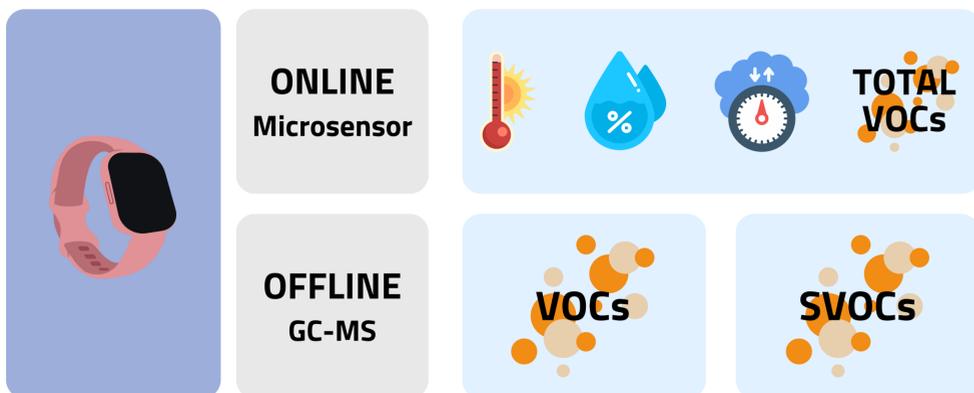


Fig. 3. Bridging the gap between personal and global: our disruptive air quality monitoring wearable. The proposed solution covers VOCs and SVOCs chemical characterization while providing an immediate readout of air quality.

APPLICATIONS

CHRONICAL RESPIRATORY PATIENTS

- Allow patients to monitor exposure.
- Manage their health condition.

OCCUPATIONAL HEALTH

- Workers in high-risk environments.
- Assess air pollution associated health risks.

PERSONAL EXPOSURE TO AIR POLLUTION

- Track air pollutants throughout the day.
- Empower individuals to make informed choices about their routines and minimize exposure risks.

CURRENT SOLUTIONS

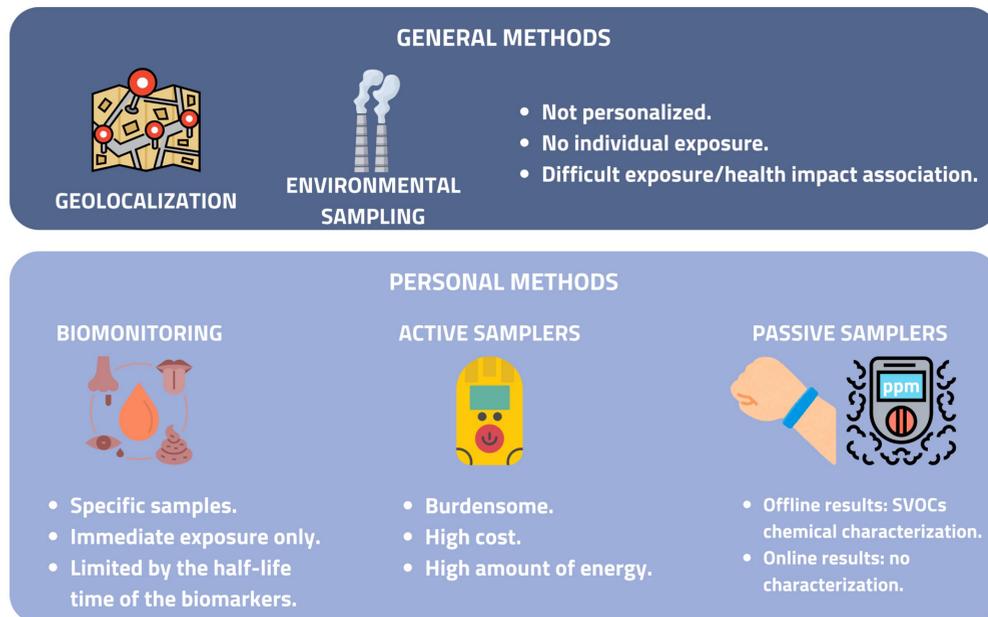


Fig. 2. Current environmental monitoring solutions.

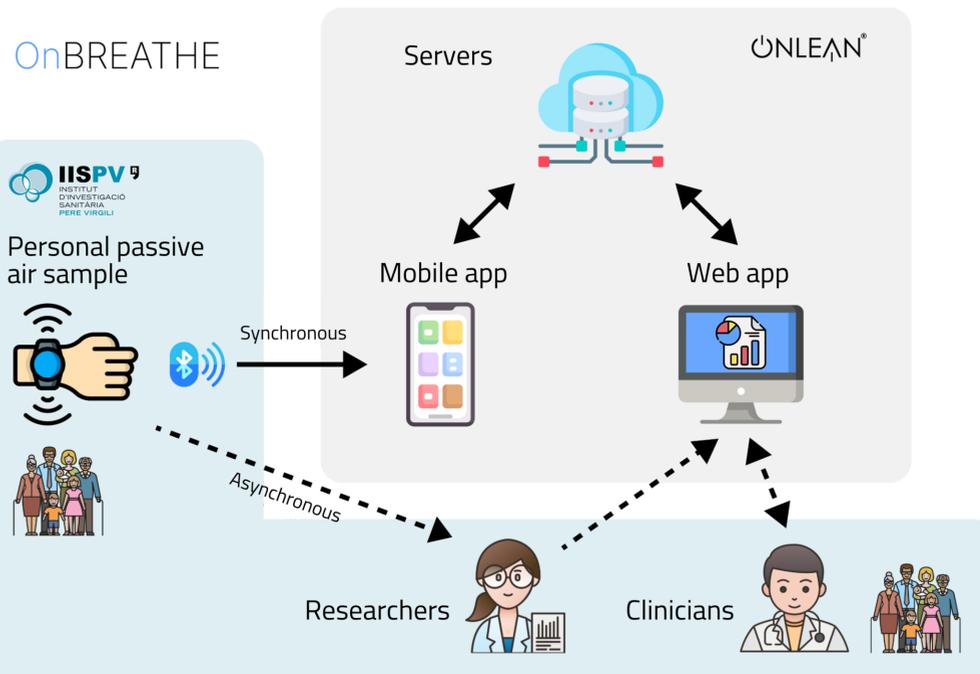


Fig. 4. OnBREATHE: a comprehensive air quality monitoring system for researchers, clinicians and individuals. The mobile app transmits data collected by the wearable to secure servers. Researchers and clinicians can access the information through the web application.

REFERENCES

- [1] World Health Organization: WHO. (2019, July 30). Air pollution. <https://www.who.int/health-topics/air-pollution>
- [2] J. B. Soriano *et al.*, Prevalence and attributable health burden of chronic respiratory diseases, 1990–2017: a systematic analysis for the Global Burden of Disease Study 2017.

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