"An Innovative Breathing Mask: Breathing is a necessity. Air is a choice".

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Background

More than 5.5 million people worldwide are dying prematurely, every year, as a result of air pollution. Exposure to air pollution is an important risk factor for human morbidity , mortality and is associated with increased blood pressure, reduced heart rate variability, loss of lung capacity and decreased lung function etc So the development of an effective breathing mask is one of the world’s top public health priorities. To address this, we propose a new breathing mask . This information will likely impact the design of future masks.

Content

The mask is designed in three main layers which are HEPA, microfiber and activated charcoal honeycomb(ACH) layers. The ACH layer filters a wide range of chemicals, odousrs and vapour contaminants. The HEPA layer screens particles ranging up to a size of 0.1 microns. The microfiber layer eliminates particles of size less than 0.1 microns. With this design, we can achieve nearly 100 percent efficiency. It is also fitted with a sensor by which the level of pollution in the air can be estimated . The filter layers are replaceable. This mask is economical, convenient to wear and can be safely operated for a duration of 3-6 months depending on the amount of pollution.

Conclusion

Wearing a facemask appears to abrogate the adverse effects of air pollution This simple innovation has the potential to protect susceptible individuals and prevent health effects in cities with high concentrations of ambient air pollution.