



THE RIGHT TO BREATH HEALTHY CLEAN AIR

THE POLLUTED AIR WE BREATHE IS MAKING US SICK

Air is most essential to life. But only a clean air is essential to a healthy life. In this day and age, only purified air is a healthy air. Breathing polluted air has permanent fatal health effects, ranging from cancer, respiratory irritation, nervous system problems, birth defects, respiratory problems and even obesity.

WHO estimates that each year 7 million people die prematurely due to indoor and outdoor air pollution [1], which is now the world's largest single environmental health risk. Particulate matter (PM) 2.5, NO₂ and O₃ are recognised as having the worst impact on human health.



WHY IS POLLUTED AIR DEADLY?

On average, we take about 23 000 breaths/day, inhaling over 11 000 L of air a day that's nearly 8 litres every minute. Imagine breathing this much polluted air. Nine out of 10 people globally are breathing poor quality air. 98 percent of the world's city dwellers breathe polluted outdoor and indoor air.

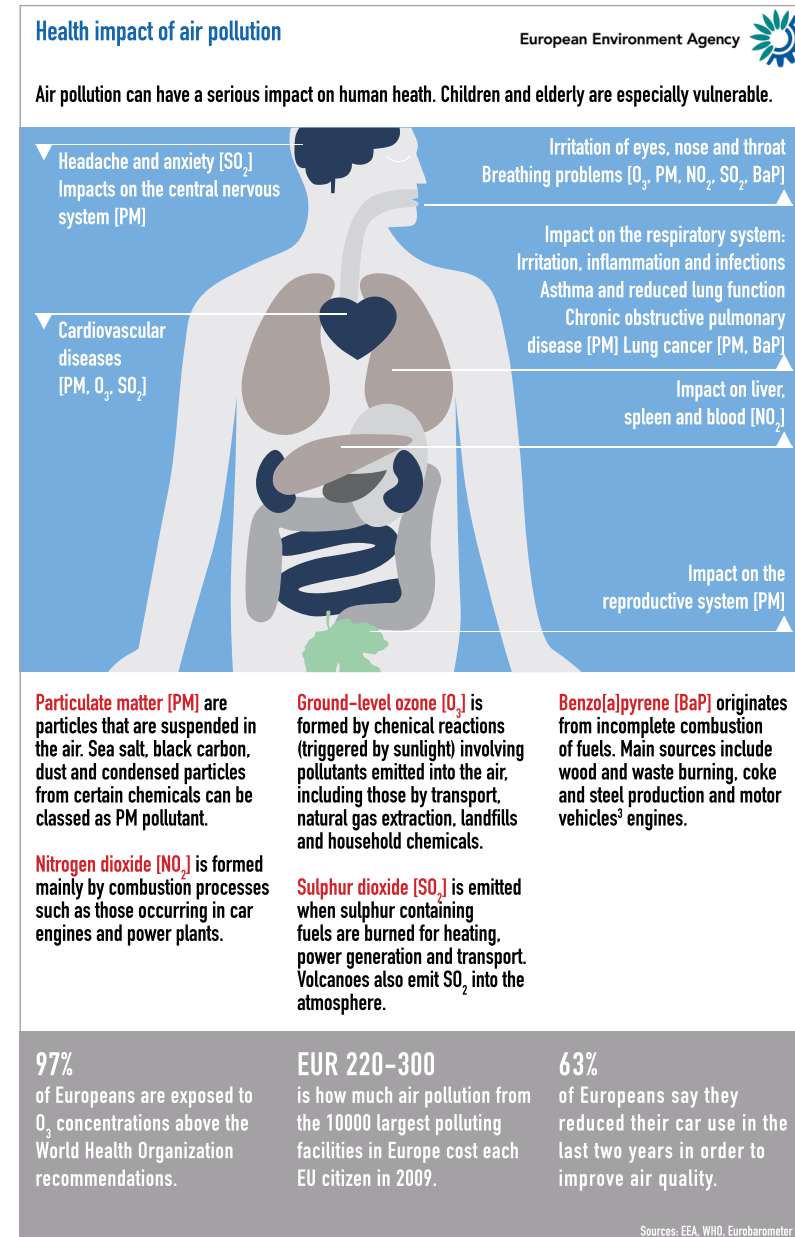
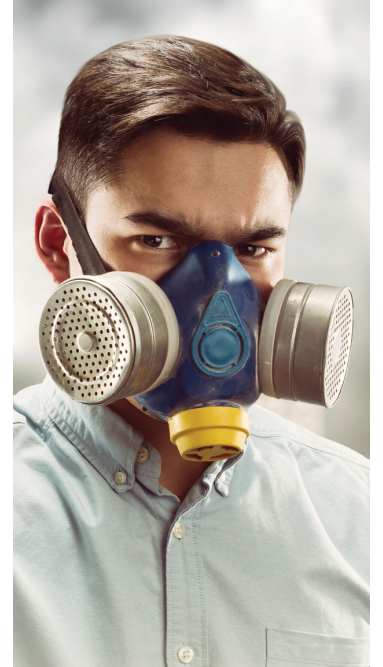
The indoor and outdoor air we breathe contains dust particles, lead, arsenic, mercury, benzene, dioxins, cadmium to name a few, which we inhale into our bodies and they affect our health making us mentally and physically sick.

Many studies directly link the size of particles to their potential for causing irreversible health problems. Small particles, less than 2.5 micrometers in diameter have the biggest health impact, because they can penetrate the alveoli and enter the systemic circulation (bloodstream) spreading toxins to all organs of the body, in only a matter of few seconds.



Sources of those indoor air pollutants are many and include:

- Fuel-burning combustion appliances
- Tobacco smoke
- Building materials and furnishings as diverse as:
 - Deteriorated asbestos-containing insulation
 - Newly installed flooring, upholstery or carpet
 - Cabinetry or furniture made of certain pressed wood products
- Products for household cleaning and maintenance, personal care, or hobbies
- Central heating and cooling systems and humidification devices
- Products like air fresheners that release pollutants more or less continuously
- Polluted air outdoors
- Biological contaminants (bacteria, moulds, allergens, viruses, pollen etc.)
- Scented candle and air fresheners



The widespread exposure to many of these pollutants in the air we breathe outside, as well as in our offices, homes, restaurants and schools has immediate negative health effects at best and are fatal after many years of exposure.

Watery or dry eyes, headache, tiredness occur very soon after a person inhales a toxic air pollutant.

Other, more dangerous, life threatening health problems may not appear until many months or years after a person's first exposure to the toxic air pollutant.

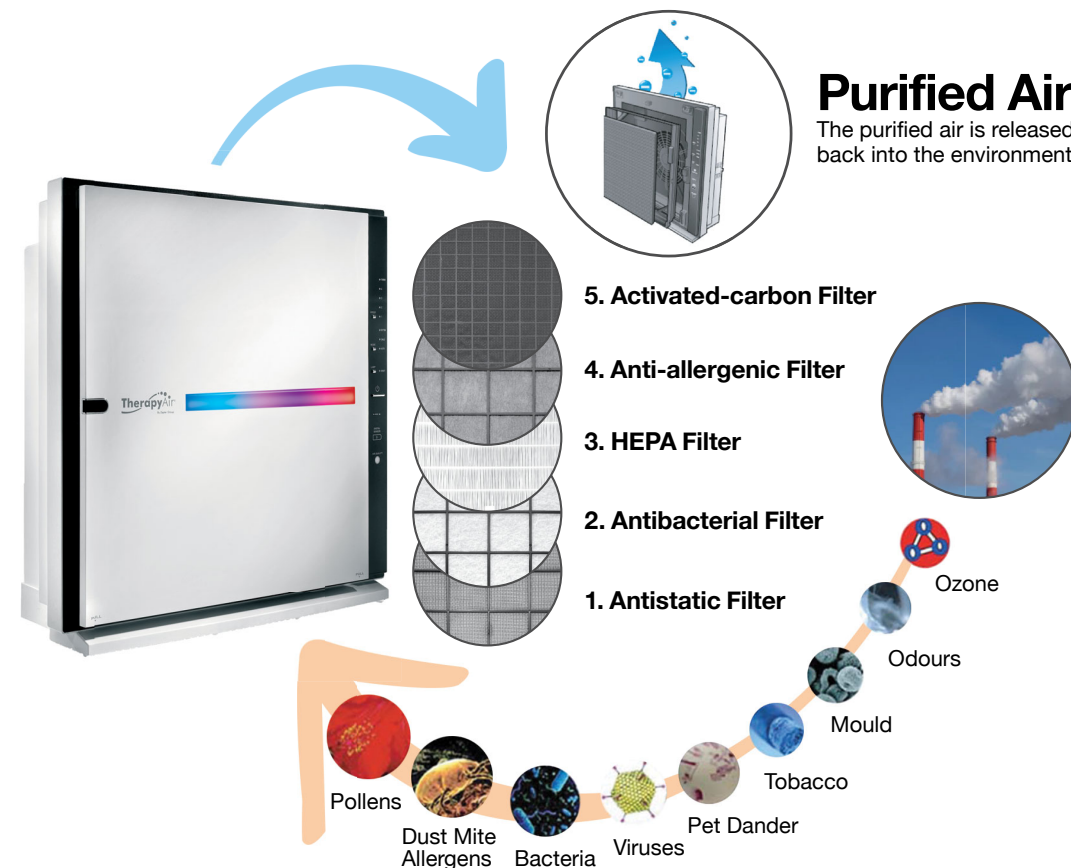
Long-term exposure to high levels of these particulates has been linked to a diverse range of respiratory and cardiovascular diseases, decreased lung function, lung cancer [2] and heart disease, induced chronic bronchitis and premature death.

For more information about the effects of polluted air on our health please read pages 12, 13, 14.

WHAT IS THE SOLUTION?

Therapy Air® iOn

1. Voted the best air purification product of the year (Germany, May 2016, April 2020) which purifies 99.9% of pollutants including PM 2.5 micrometers in diameter.
2. Fitted with a 5 level filtration system:
 - anti-static
 - antibacterial
 - HEPA
 - anti-allergic
 - activated-carbon
3. Therapy Air negative ion generator



1. ANTISTATIC FILTER: Removes larger particles of dust, mould, hair, dandruff, and pet hair.

2. ANTIBACTERIAL FILTER: Removes the remaining small particles of dust, bacteria (≥ 1 micron) and pollen.

3. HEPA-FILTER: Coated with an organic antibacterial material Thiabendazole Type and anti-mould substances to remove indoor pollutants, bacilli, mould spores and germs thus preventing the risk of infection. It also eliminates the tiniest particles of dust and tobacco smoke.

4. ANTI-ALLERGENIC FILTER: This mixture of silver, apatite (a mineral) and an antibacterial agent

is especially effective against Legionella bacteria that are particularly dangerous for babies. The filter contains an extract of ginkgo balboa leaves that can be processed by the body and used very effectively in asthma, lung diseases and circulation problems. This filter is used to eliminate allergens, flu viruses and bacteria.

5. ACTIVATED-CARBON FILTER: Eliminates unpleasant food and cigarette smells, toxic gases such as VOCs, toluene, benzene, xylene, styrene and formaldehyde, ammonia, acetaldehyde, and acetic acid and other odours thanks to its high absorption characteristics. AC Deodorant Filter removes harmful gases and the smell of food or cigarettes.

THERAPY AIR® iON – CERTIFIED TO REDUCE COVID – 19.

Therapy Air® iOn has achieved the prestigious german **GUI-lab certification mark**. **Five powerful high performing filters eliminate** the smallest particles in the air such as fine dust, bacteria, mold and viruses, especially those which are transmitted via the so-called droplet infection such as the SARS-CoV-2.



HOW DOES THERAPY AIR® iON WORK?

Therapy Air Ion generates about 220.000 ions per cm³ in turbo mode, i.e. double the amount of negative ions contained in the air of the healthiest of environments such as surrounding a massive waterfall (Niagara falls generate over 100,000 negative ions per cm³).

Negative ions increase the well-being and mental clarity by removing the debilitating effects of excessive polluted, positive ions contaminated air, and are often described as natural anti-depressants.

Negative ions can significantly decrease airborne viruses and bacteria in our indoor environments (homes, offices, sport centres, kindergartens, etc.) and improve the healthy being.

They improve the function of the cilia in our respira-

tory tract that protects our lungs from irritation and inflammation, thus leading to less instances of respiratory illnesses like colds and flu and even hay-fever and asthma. Because negative ions are absorbed directly into the bloodstream they may help to combat harmful free radicals within our body.

Researchers at the University of California showed negative ions normalize serotonin levels in the brain, potentially improving a person's positive outlook and mood, and helping having a better sleep, concentration and cognitive abilities.

Mr. Pierce J. Howard PhD at the Centre for Applied Cognitive Sciences says that: "Negative ions increase the flow of oxygen to the brain; resulting in higher alertness, decreased drowsiness, and **more mental energy.**"



TAKE A DEEP BREATH OF PURIFIED
NEGATIVE ION ENRICHED AIR.
GET BETTER – FEEL GOOD

Improved indoor air quality boosts the immune system, and thereby productivity at the workplace [31]. Therapy Air® iOn ensures optimal oxygenation of the body, including the brain improving alertness and concentration, and improves immunity and fights disease.

Pathogens, pollutants, mould and allergens that can be found in the indoor air are removed by Therapy Air® iOn. It as well protects individuals from the flu and hay fever, thereby reducing the amount of medication/treatment required.

The filtering system will not only protect against outdoor pollution and allergens, but also against indoor pollution from chemical compounds, cleaning products, cooking and from fireplaces, which are all harmful to our health.

Controlling indoor air pollutants in homes, in the offices, in schools, hospitals, fitness and wellness centres – and in every situation, where air is polluted is essential for prevention of illnesses, improved recovery and for maintaining overall health.



THERAPY AIR iON
FIVE LEVEL AIR PURIFICATION
SYSTEM FOR
HEALTHY BEING.

EXTRA FEATURES



- **Wall-Hanging Slim Design (Optional)**
The slim design makes the unit suitable for wall hanging for a pleasant decorative effect.
- **Rhythmic Cleaning Operation Mode**
This mode is designed for optimal indoor air circulation and the rapid removal of pollutants.
- **Silent Operation at Night (Bedtime Mode)**
The unit automatically operates silently to create a pleasant atmosphere at night.
- **Safety Design for Customers**
All operations stop automatically if the front cover is opened. The air intake/outlet is designed to ensure your safety and prevent accidents.
- **Mood Light**
You can select a colour from the front of the unit for mood lighting.
- **Child Mode**
The air circulation speed is lowered to prevent children from feeling cold.

THE ULTIMATE BREATH GIVING INNOVATION

TECHNICAL DETAILS FOR THERAPY AIR® iON:

ITEM CODE	PWC-570
PRODUCT NAME	THERAPY AIR® iON
GROSS WEIGHT [KG]	10.8
NET WEIGHT [KG]	8.8
PRODUCER	HOME ART & SALES SERVICES AG, SIHLEGGSTRASSE 23, CH-8832 WOLLERAU
DIMENSIONS	54.4 x 18.1 x 51 cm
POWER	47 W
VOLTAGE	220 V-240V - 50HZ/60HZ
SAFETY	CLASS II
POWER CORD	Non-detachable
PURIFYING METHOD	Antistatic filter, antibacterial filter, HEPA filter, anti-allergenic filter, activated-carbon filter
PROTECTION METHOD	Circuitbreaker
NEGATIVE IONS GENERATED	220 000 ions per cm ³
NOISE LEVEL	Minimum 21db- maximum 46 db
MAXIMUM PURIFICATION CAPACITY	328m ³ /h
MAXIMUM AIR FLOW (M ³ / MIN)	5.8
WARRANTY	2 years
CERTIFICATIONS / DECLARATION	CE conformity for electrical equipment. The declaration of conformity with Directive 2004/108 / EC on electromagnetic compatibility. Declara- tion of Conformity with Low Voltage Directive 2006/95/EC. Directive 2002/95/EC (RoHS 1) on the restriction of the use of certain hazardous substances in electrical and electronic equipment.

TECHNICAL DETAILS FOR THERAPY AIR® iON FILTERS:

ITEM CODE	PWC-570-49
PRODUCT NAME	THERAPY AIR FILTER
SET APPLICATION	Purification filter set for the device Therapy Air iOn PWC- 570. Annual Package
GROSS WEIGHT [KG]	1.98
NET WEIGHT [KG]	1.2
PRODUCER	HOME ART & SALES SERVICES AG SIHLEGGSTRASSE 23, CH-8832 WOLLERAU
COMPOSITION	2x Antistatic filter, 1x antibacterial filter, 1x HEPA filter 1x anti-allergenic filter, 1x activated-carbon filter. Note: Filters have protective film. Please remove it.
WARRANTY	Not applicable - consumables

ADDITIONAL INFORMATION ON HEALTH RISKS

EFFECT ON THE RESPIRATORY SYSTEM

A systematic review, which is the best possible evidence in research, shows an association between exposure to PM_{2.5}, traffic related air pollution, carbon monoxide and pollen and the development of paediatric asthma [3, 4].

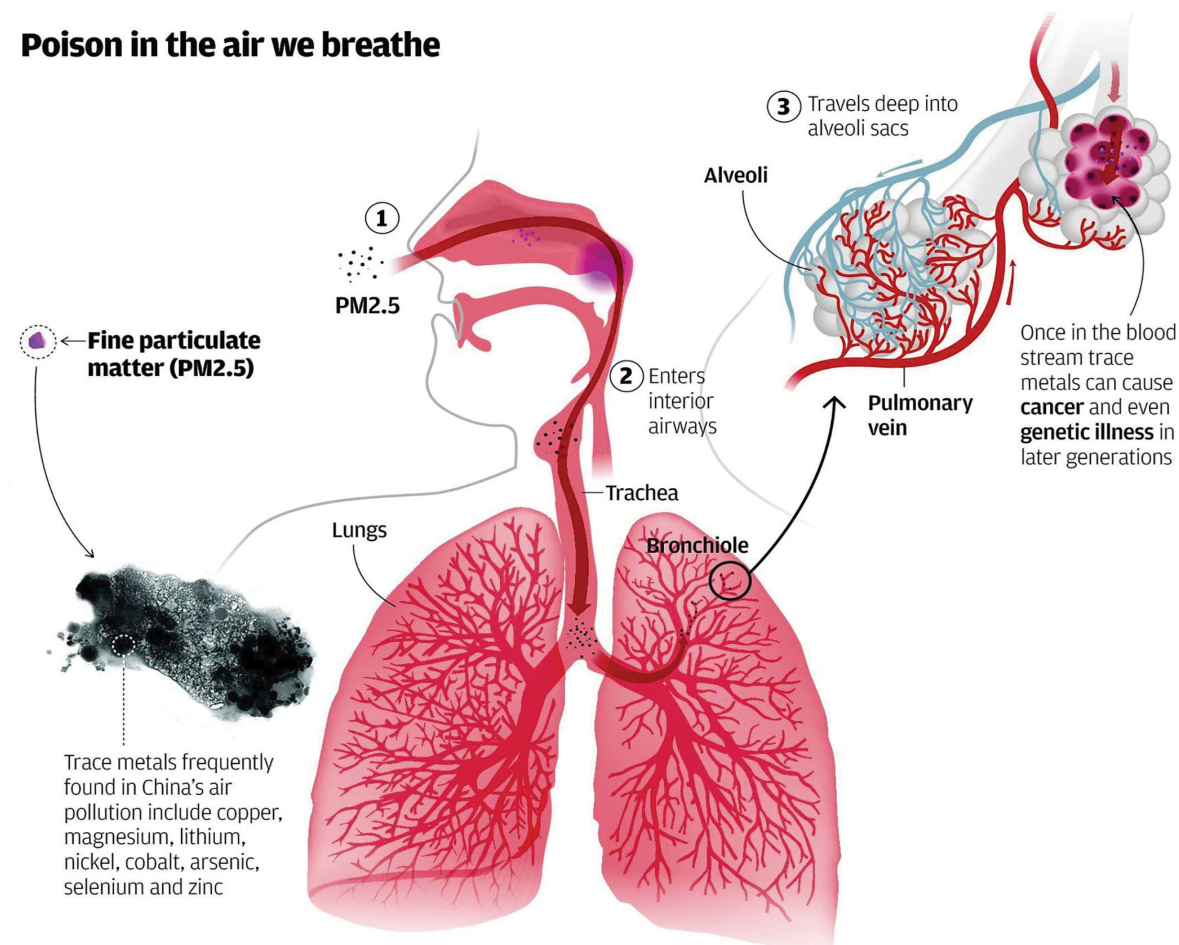
Exposure to NO₂, SO₂ and PM_{2.5} [5, 6, 7, 4] activates inflammatory markers [8] and increases oxidative stress within the cells resulting in cell death through apoptosis, autophagy, and necrosis [9, 10]. PM exposure may also lead to DNA damage and genomic instability increasing the susceptibility to cancer [11, 12].

A prenatal exposure to NO₂, SO₂, and PM is related to an increased risk of wheezing and asthma development in childhood [13, 14, 15, 16]. In addition, infants, whose mothers lived close to a major roadway at the time of delivery, may be at greater risk to develop lung infections in early life [17] and may predispose the child to adverse cardio-metabolic health [18]. Unfortunately, exposure to air pollution is also linked to intrauterine hypoxia during pregnancy, which has a negative impact on the development of organs and embryonic processes [18, 19], and



is associated with congenital abnormalities, in particular affecting the heart [20, 21]. Similarly, Son et al (2017) provided supportive evidence from nearly 500 000 children born in the US that lifetime exposure to PM_{2.5} increases the risk of mortality from respiratory disorders and sudden infant death syndrome [22].

Poison in the air we breathe



Sources: EPA, Environmental Protection Department, Greenpeace.

SCMP Graphic: Adolfo Arranz

EFFECTS ON THE CARDIOVASCULAR SYSTEM

Research provides evidence that air pollution exposure increases oxidative stress, systemic inflammation and autonomic nervous system imbalance that subsequently induce endothelial dysfunction and vasoconstriction [23, 24]. Supported by robust evidence [25, 26, 27, 28, 29, 6, 24], these factors are central to eliciting specific cardiac endpoints, and thereby, modulating the risk to:

- Myocardial infarction
- Cardiac arrhythmias
- Atrial fibrillation
- Sensitivity to ischemia
- Cardiovascular disease, such as ischemic stroke
- Vascular dysfunction
- Hypertension
- Atherosclerosis
- Reperfusion injury

In fact, PM_{2.5} is associated with an 11% increase in cardiovascular mortality [31].

Further, environmental exposure to air pollution significantly increases arterial blood pressure, which, over the long term, may be capable of promoting the development of sustained hypertension [32] and increased risk

of arteriosclerosis, as shown by premature aortic and coronary calcification [33, 31]. Even short-term increases in air pollution are associated with an increased risk of myocardial infarction, stroke and acute heart failure, because of an increase in thrombus formation, coagulation factors and platelet activation [34, 35, 36, 37, 38]. The risk is increased even when pollutant concentrations are below European standards.



PM increases the risk of cardiovascular events especially in vulnerable subsets of individuals [21, 39, 40] such as persons with known or suspected cardiovascular disease, the elderly, diabetic patients (see 'effects on weight, metabolism and diabetes'), pregnant women.

EFFECTS ON WEIGHT, METABOLISM AND DIABETES

Exposure of very high pollution levels of PM_{2.5} during pregnancy, particularly in the 8th and 9th month, are associated with a lower birth weight in infants [41], and potentially childhood obesity later in life [42]. Leptin levels appear to be more than 70% higher in infants whose mothers lived close to a major road during pregnancy compared to infants of mothers living further away from roads [43]. Leptin is a hormone produced by adipose tissue (i.e. fat) and is received by the brain. Leptin is proportional to the amount of body fat stored and informs about the body's caloric state. Therefore, distortions in the leptin-signalling pathway are associated with obesity and diabetes [44].



Thus, exposure to air pollution has also been suggested as a contributing factor to diabetes development and its progression [14, 45], through biological pathways involving endothelial and mitochondrial dysfunction, oxidative stress, deregulation of the visceral adipose tissue through inflammation, hepatic insulin resistance, elevated haemoglobin level, elevated blood pressure and alterations in the autonomic nervous system, which may increase insulin resistance [46]. Consequently, PM_{2.5} exposure may increase the risk of diabetes by 10 to 27% [46].

Obesity is considered an inflammatory disease, and obese and overweight individuals have increased inflammatory markers. Because air pollution triggers an inflammatory response in the body, obese individuals appear more susceptible to air pollution due to the exasperation of already-existing inflammation.

In particular, obese individuals are more sensitive to O₃-induced impaired lung function and are at greater risks for air pollution-induced cardiopulmonary effects [47].

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TherapyAir® iOn
By Zepter Group

