



CASE STUDY

The sophisticated, smart *iTherapy 1* device reduces the concentration of PM1 aerosol particles.

- ✓ Fully automated device improves indoor climatic conditions of dental offices.
- ✓ An innovative product that enables harmony between ecology and industry.
- ✓ Contribution to the preservation of the environment achieved by the introduction of the latest technologies.

ABSTRACT

At a time when we are bombarded hour by hour with news of the spread of coronavirus and the interventions that governments and their bodies, including the health system, are taking, it is important to find effective protection to reduce potential risks of infection among the population. The appearance of a virus, like a coronavirus, is not an isolated incident. It is just the latest in a series of dangerous infections that will not stop until humanity changes its attitude towards this issue. It is therefore very important that healthcare institutions and other institutions that care for people, such as nursing homes and homes for the infirm, introduce all necessary measures to provide adequate protection for their staff and patients.

THE CHALLENGE

The increased frequency of virus infection is associated with an increased concentration of aerosol particles (PM) in the air. Viruses are adsorbed by coagulation on PM aerosol particles and can participate in diffusion or long-distance transmission in the atmosphere. The realization that the concentrations of PM aerosol particles in indoor air can be higher than outside, and as carriers of the virus can allow significantly faster diffusion of the virus, is a serious warning. The recommendation for the purpose of slowing down the rate of virus diffusion is to reduce the concentration of PM particles. In order to provide quality service and maximum safety of patients and staff,



Just walk into the space and it will be clear to you that the technology is working!

Impact of air purifier iTherapy 1

- ✓ **concentration of PM1 aerosol particles in the first 5 minutes decreases from 232 $\mu\text{g}/\text{m}^3$ to 10 $\mu\text{g}/\text{m}^3$**
- ✓ **reduction of PM1 aerosol particles concentration by 23.2 times**
- ✓ **maximum efficiency of removal of aerosol particles PM1 is 99.04%**

the **iTherapy 1** smart air purifier was installed in the dental office space. The latest technology available to **iTherapy 1** enables rapid reduction of PM particles, which lead to the diffusion of the virus indoors. The **iTherapy 1** air purifier simultaneously performs three complex operations: detects, purifies and modifies the air within the dental office. Its installation takes the right steps to control and reduce aerosol particles and chemicals indoors.

THE SOLUTION

In order to reduce the risk of spreading the infection, and to provide the highest possible safety conditions to its patients and staff, a smart air purifier **iTherapy 1** was installed in the dental office. Using advanced and alternative technology, PM1 aerosol particles were reduced. The concentrations of PM1 aerosol particles have been shown to decrease with the help of the **iTherapy 1** device with the integrated iTHE Steril filter, and to stabilize in the last period of measurement. At the highest values of PM1 aerosol particles pollution, the **iTherapy 1** device with the integrated iTHE Steril filter mostly purifies the air in the first 5 minutes. The concentration of PM1 aerosol particles in the first 5 minutes decreases from 232 $\mu\text{g}/\text{m}^3$ to 10 $\mu\text{g}/\text{m}^3$. The **iTherapy 1** smart air purifier reduced the concentration of PM1 aerosol particles by 23.2 times.

THE RESULTS

The results of the conducted research indicate the efficiency of the **iTherapy 1** air purifier with the integrated

iTHE Steril filter on the reduction of PM1 aerosol particles. When PM1 aerosol particles reach the iTHE Steril filter they stick to its surface by the adsorption process. The highest efficiency of removal of aerosol particles PM1 **99.04%** was achieved after 5 minutes of air purification process. Because PM aerosol particle fractions are effective carriers of the virus, the use of **iTherapy 1** reduces PM1 aerosol particles, thus reducing the potential risks of infection among humans.

**iTherapy improving
quality of life**

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