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*We want to hear  
from you*

**We value the opinion of  
our readers and we are  
looking forward to  
receive your feedback  
about this newsletter.**

**Please send us a  
personal email with your  
suggestions or comments  
to the following address:**

**Attn: Paraskevi Kinni  
info-cy@life-medea.eu**



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# LIFE MEDEA NEWSLETTER



## Scientific Workshop: Desert Dust Storms and the protection of vulnerable subgroups within the school environment

Within the framework of the LIFE MEDEA project, the University of Cyprus, the Health Visitor Service of the Ministry of Health and the Cyprus University of Technology, organised scientific workshops in Limassol and Nicosia, regarding the health effects of Desert Dust Storms (DDS). The workshops focused on the protection of vulnerable patient subgroups from DDS events within the school environment and how Health Visitors can further support the patients and get involved in the development and application of a comprehensive action to protect asthmatic children from the effects of DDS. During the meeting, the MEDEA personnel discussed the effects of desert dust storms and climate change on human health, presented the study design of the MEDEA project and gave an overview of the frequency, intensity and characteristics of the DDS episodes occurring in Cyprus. Furthermore, during the workshop, the results of a recent questionnaire study about DDS events, focusing on the current knowledge and practises of the competent bodies and social stakeholders in Cyprus, Greece and Israel were presented. The presentations were followed by lively discussion regarding the role of health professionals and the protection of asthmatic children from DDS events within the school environment.





## Message from the Project Coordinator

Welcome to the 3rd edition of the LIFE MEDEA bi-annual newsletter which aims to disseminate information on the progress and activities of LIFE MEDEA, to the scientific community, regulatory authorities and the general public. The current edition features the MEDEA scientific workshop which focused on the protection of children from desert dust in schools. The newsletter, also briefly explains the recruitment and follow-up of the asthmatic children and atrial fibrillation patients during the MEDEA study and describes the various indoor and outdoor equipment installations that took place during the previous months. The equipment included air cleaners and air pollution particle samplers. Finally, the newsletter provides an updated regarding the documentary on desert dust storms and associated health effects that is being produced by MEDEA and the Cyprus Broadcasting Corporation (CyBC). We hope that you will enjoy reading this edition.

Professor  
Panayiotis Yiallourous,  
Coordinator of LIFE MEDEA

## Recruitment and follow-up of Atrial Fibrillation Patients

Atrial Fibrillation (AF) patients are identified with the help of electrophysiologists from hospitals in Nicosia and Limassol, Cyprus as well as from hospitals in Heraklion, Greece and Beer Sheva, Israel. During their visit to the pacemaker clinic the patients are evaluated by the attending clinician and their pacemaker or ICD data are retrieved to assess their current arrhythmia profile. As a next step, patients are informed about the project in detail and are guided through the wearable devices that participants are required to wear for activity-monitoring purposes. The participants are again called in to the pacemaker clinic after the end of the high Desert Dust Storm (DDS) season to compare the severity of their condition across the three MEDEA intervention groups following exposure to DDS events.







## Assessments of Respiratory Health

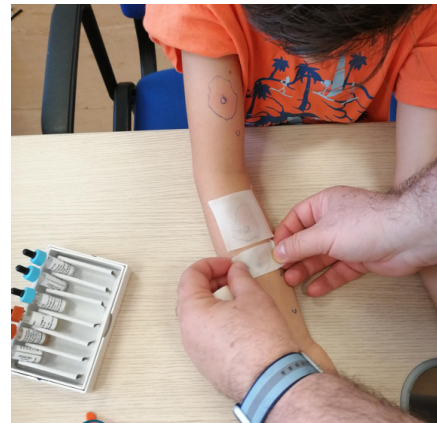
During the MEDEA project, the respiratory health of asthmatic children is assessed through the performance of two tests, spirometry and exhaled nitric oxide measurements. Spirometry assesses the volume of exhaled air and how quickly it is exhaled. It can provide an indication of asthma, given that asthmatics take longer to exhale a certain volume of air compared to non-asthmatics. On the other hand, exhaled Nitric Oxide, is a useful marker of inflammation of the airways as it provides evidence for the severity of disease and can guide decisions about treatment.



*An asthmatic child performing nitric oxide measurement with the help of the MEDEA team.*

## Recruitment and follow-up of Asthmatic Children

Following the identification of asthmatic children through the use of validated questionnaires, the MEDEA team communicates with the parents of asthmatic children and informs them about the project during one-to-one meetings. During the meeting, the parents sign the necessary consent form and are guided through the wearable devices that are given to their children. After discussion, the baseline respiratory health of asthmatic children is assessed through spirometry and exhaled nitric oxide measurements. The assessment of respiratory health is also repeated during and after the high DDS season. Moreover, as part of the MEDEA project, the project personnel contacts the parents of the participating school children on a monthly basis to learn about changes in asthma medication and frequency of disease exacerbations. Finally, the allergic sensitisation status of participating children in Cyprus is also evaluated through the performance of skin prick tests. Skin prick tests allow the assessment of the severity of allergic reaction to various aeroallergens such as pollens, animal fur, and fungi.



*Asthmatic children undergoing skin prick test with an allergologist.*



*Height and weight measurements in primary school children.*

## Air-cleaner installations in houses and schools

After randomisation to the MEDEA intervention legs, a number of asthmatic children and atrial fibrillation patients received an indoor air-cleaner that was installed in their house and, in the case of asthmatic children, in their classroom. Along with the air-cleaner, these patients also receive alerts at the start of a DDS event and instructions on how to keep indoor air quality unaffected by the DDS events. The MEDEA technical team, after examining each premise (house or classroom) and discussing with the participant installed the air cleaner at locations with the house or classroom that would allow for the most efficient and safe use of the equipment. The MEDEA technical team performed routine checks and maintenance during the high DDS season to ensure that the air-cleaners were working in full efficiency. In total, the MEDEA personnel in Cyprus, Crete and Israel has installed more than 80 air cleaners in school classrooms and houses. After the end of the DDS season the air-cleaners are collected, cleaned, have their filters replaced and are stored to be ready for deployment during the next year of the MEDEA project.

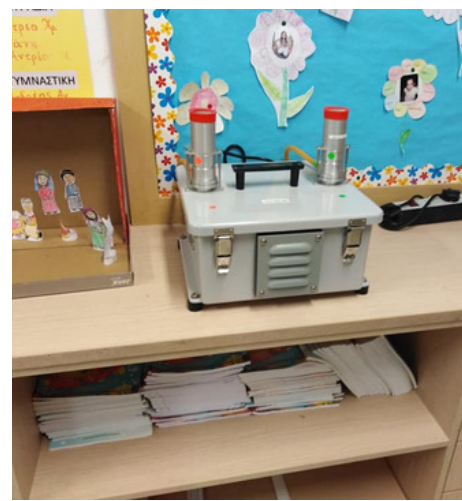


*Air-cleaners installation and maintenance within the framework of the MEDEA project.*



# Indoor and Outdoor Air Quality Measurements

One of the most important goals of the MEDEA project is to evaluate the effectiveness of exposure reduction guidelines for DDS events. To do so, the project personnel should be able to measure the levels of different air pollutants in the environment of the participants. As a result, the MEDEA air pollution experts have installed indoor and outdoor particle samplers (cascade impactors) which measure ambient particulates by filtering the air through a series of nozzles. Outdoor impactors are placed on rooftops of houses and schools, while indoor impactors are placed inside the classrooms and houses of asthmatic children and in the houses of atrial fibrillation patients. Apart from the cascade impactors, optical particulate sensors (OPCs) are also installed in the indoor environment of all patients using air-cleaners to quantitatively assess compliance to the exposure reduction guidelines. The impactors and OPCs provide measurements for both dust and non-dust days.



*Installation of outdoor impactors on school and house rooftops for outdoor air quality measurements.*

*Indoor optical particle counter (top photo) and an indoor impactor (lower photo) which are used for indoor air quality measurements.*

## The LIFE-MEDEA documentary filming is under way.

The Cyprus Broadcasting Corporation (CyBC), a MEDEA partner, in association with Tetractys Films, is producing a documentary on the DDS events and the related health effects. The documentary covers the MEDEA project technology and development of guidelines and will follow the MEDEA progress. During the past month the film crew joined the MEDEA project personnel in a number of their school visits to take shots on the project's daily activities. The visits included air-cleaner installations, outdoor and indoor impactor set-ups and door and window insulations. Also, the film crew had the opportunity to take shots of school presentations regarding the desert dust phenomenon and exposure reduction guidelines and the respiratory health assessments of asthmatic children (spirometry and exhaled Nitric Oxide tests). Some of the participating patients and parents of children will also be asked to be interviewed about their experience with the DDS phenomenon and the MEDEA project. The documentary will air (CYBC) upon the completion of the project in 2021.



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