MYAIRCOACH NEWSLETTER

Issue No. 1

Welcome to the first annual issue of the MyAirCoach Newsletter.

MyAirCoach newsletter will serve as a fully accessible communication tool for the dissemination of important project news and the description of future steps.

Please subscribe to our mailing list in order to receive notifications for the project news

MY AIR COACH
PREDICTIVE SELF-MANAGEMENT OF ASTHMA

Horizon 2020
European Union Funding
for Research & Innovation

myaircoach.eu

EDITORIAL

MyAirCoach is an EU funded project under Horizon 2020 (grant agreement No. 643607). The project started on the 1st of January 2015 and will last 3 years.

The MyAirCoach project aims to support asthma patients to control their disease through mHealth. New monitoring approaches, combined with the development of novel sensors will form a system that will address the needs of patients on a daily basis and in the real life environment. Analysis, modelling and prediction of disease symptoms are expected to engage patients in the management of their asthma, and also reveal the possibilities and innovative solutions that mHealth can bring to asthma control.

Furthermore, MyAirCoach is aiming to form an important tool for the support of healthcare professionals both for the efficient supervision of the condition of their patients and also for the research and understanding of asthma disease.

"Our vision is to provide a unified solution that will empower asthma patients to control their disease and enable doctors to help them more effectively and efficiently."

Project coordinator
Dr Dimitrios Tzovaras
Information Technologies Institute
Centre of Research and Technology – Hellas

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OBJECTIVE

The MyAirCoach project aims to improve the quality of life of asthma patients and their families and to increase the efficiency of asthma healthcare as a whole.

MyAirCoach will do this through the use of miniaturized sensing devices and novel decision support methodologies. The system will be based on a wide spectrum of measurements which will include physiological, environmental and lifestyle parameters.

This will in turn allow the accurate assessment of the patients' condition: help ensure proper use of medication, and the avoidance of possible future risk factors.

It is also envisaged that the innovative components developed as part of this project will stimulate research in the field of asthma management and support the creation of synergies, both across and within, the disciplines of technology development and medical research.

Modern approaches of modelling and prediction of asthma will be used for the optimization of the diagnosis and treatment process:

Multi-parametric monitoring

- Asthma related parameters, activity, lifestyle, and environment

Inhaler prototype

- Sensing capabilities and connectivity with smart devices

Personalized monitoring and guidance platform

- Automated assessment and guidance, interactive interfaces
- Supervision and communication with healthcare personnel

Patient-specific computational models

- Physiological and environment-aware computational models

Test campaigns

- Optimization and validation of the computational models

Predictive value of new physiological markers

- Propose new metrics to analyze and evaluate medical treatments

Validation of the myAirCoach project

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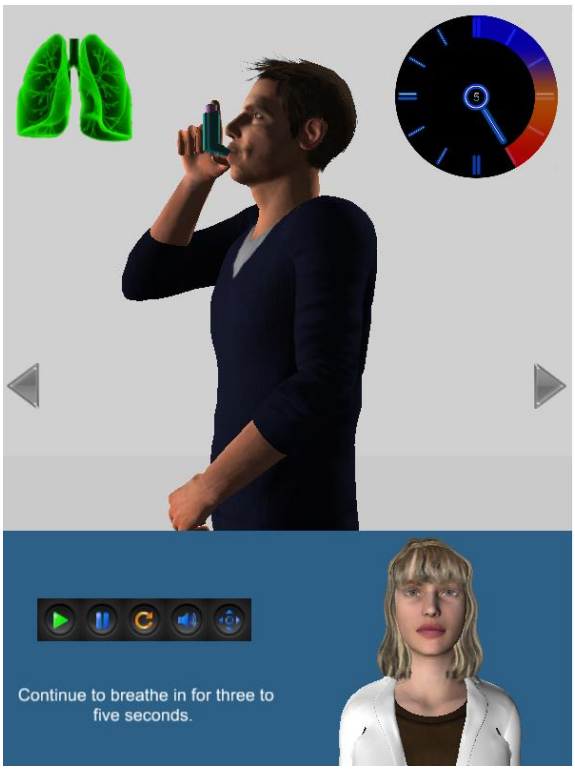
PARTNER MEETINGS

The project's consortium has established continuous communication links and a number of meetings have been organized so as to increase of cooperation towards the project's objectives.

Recently, consortium members have met in London. The meeting was an opportunity for project members to get together and discuss the progress and development of the project and targets for the year ahead.

The technical partners of the project presented their approaches, and the current state of development of the inhaler based sensor, and the software components required for their intelligent information processing of collected measurements. The first results of modelling were presented both for the understanding of airflow within the lungs of patients and the concentration of pollution particles that may trigger an asthma attack.

Finally, the first version of an interactive 3D environment for the presentation of inhaler instructions was presented and discussed with the clinical partners and patient organizations for the improvement of its usability and easy comprehension by patients.



UPDATE ON ONGOING PROJECT ACTIVITIES

In order to find out what people with asthma want from a mHealth device, Asthma UK, Manchester and Leiden University ran three focus groups in London, Manchester and the Netherlands. We also ran another group with healthcare professionals (HCP's) in order to gain perspective from those who treat people with asthma.

A total of 22 patients contributed to the patient led focus groups. For the HCP group, we had two clinicians, two nurses and one clinical physiologist, all of

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whom are directly involved in treating people with asthma.

We asked the focus group participants:

- what kinds of measurements would be useful to help them manage their asthma,
- what kinds of alerts and reminders would be beneficial,
- their thoughts on the burden of inputting data, user support, privacy and product design amongst some other topics.

From this information we have pulled out some central themes and created a survey which will be sent out to people with asthma and health care professionals, allowing us to collect some quantitative data.

We aim to get 200 responses over the next few weeks, and these responses will help guide the design and usability of the final device.

PATIENT INVOLVEMENT

MyAirCoach will provide patients with a support system to help them in the self-management of their asthma. It will do this by enabling them to take the right steps, at the right time, in order to prevent asthma attacks.

But how can we ensure that the final product will meet the real needs of asthma patients? The key to achieving this is by involving and engaging with the patients directly, and making them a key part of the project development team.

Thanks to the expertise and the networks of both EFA and Asthma UK, a group of patients, called the Advisory Patient Forum (APF), was established to provide continuous feedback to the members of the consortium. This group will provide the patient's perspective to

the research activities of the project.

The APF is composed of 22 adult asthma patients from four different European Countries: United Kingdom, Ireland, the Netherland, and Portugal. It was established in June and has already provided an outstanding contribution to the project. It has helped to define the device user requirement and on outlining the methodology of the test campaigns aimed at investigating and specifying appropriate physiological, behavioural and environmental markers which have significant predictive values for asthma. Laura, a member of the APF, has written a blog about her involvement

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in the project and you can read the blog in full here. She has this to say about what taking part in this project means to her and her hopes for the end result:

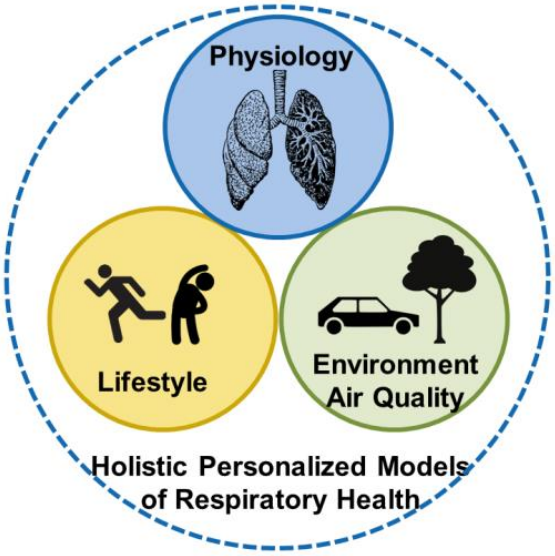
"This project is very exciting because it is based on the promise that by putting our knowledge around health, new technologies and patients' views together, we can create a tool that responds to patient needs and can control asthma easily with a personalized system."

EXTERNAL EVENTS

MyAirCoach is currently being promoted at the DDL26 Conference – Drug Delivery to the Lungs, which takes place in Edinburgh from the 9th till the 11th December.

The conference is a non-commercial meeting aimed at providing high quality and varied program that promotes, by means of podium and poster presentations and exhibitions, recent developments in the field of inhalation therapy. 600 participants will receive a copy of the myAirCoach brochure and further information on the project is provided at the promotional stand manned by the European Federation of Allergy and Airways Diseases Patients Associations.

A podium presentation was given at the International Society for Aerosols in Medicine Congress (Munich, Germany, 30 May – 3 June) where the concept of the digital asthma patient was discussed introducing modern approaches of healthcare such as personalized modelling of asthma disease, introduction of modern healthcare monitoring approaches and the development of smartphone applications that put asthma patients in the centre of asthma treatment through self-management approaches.



Podium presentations were also given at the International Conference on e-Health and Bioengineering (Iasi, Romania, 19-21 November) where a novel approach was presented for the

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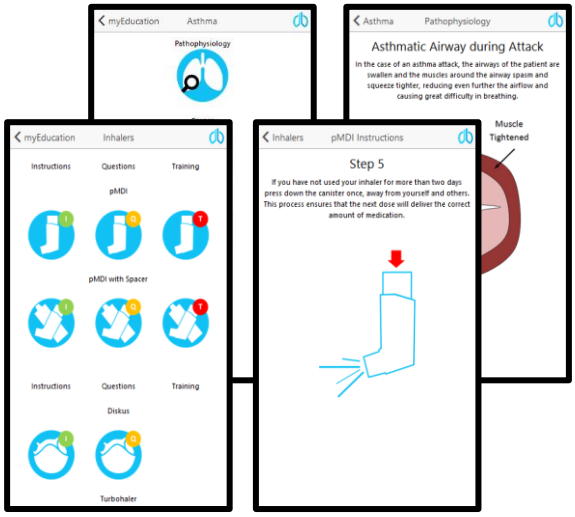
acoustic detection of inhaler actuations. The promising results of the presented methodology, allowed the continuation of research in this area in order to search for an algorithmic procedure that will allow the understanding of inhaler technique in addition to the assessment of adherence.



The educational components of the MyAirCoach project were presented at the International Conference on Interactive Mobile Communication, Technologies and Learning (Thessaloniki, Greece, 19-20 November), where the initial version of the MyAirCoach mobile app was described taking the first step not only for the definition of training and educational approaches of MyAirCoach but also for the design of the foreseen mobile application.

Project partners also promoted myAirCoach through the distribution of the project brochure and by providing information to a variety of stakeholders during events such as the ERS Presidential Summit (Brussels, Belgium, 16-17 June) and the ERS Congress (Amsterdam, the Netherlands, 26-30 September), the Responsible Research Innovation in ICT Workshop (Brussels, Belgium, 8-9 July) and the European Health Forum Gastein (Bad Gastein, Austria, 30 September – 2 October).

Finally, MyAirCoach was presented in the eHealth Forum in Athens, Greece where the project was positioned in the Greek eHealth environment and feedback was collected towards the parallel development with other efforts aiming to introduce novel eHealth approaches in the Greek healthcare system.

MYAIRCOACH IN THE SPOTLIGHT

The MyAirCoach project was recently highlighted in a recent article which appeared on MedTech Engine, a sit which highlights innovative projects in

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the field of medical technology. You can read the article in full here.

FUTURE DIRECTIONS

As the project evolves the user requirements will be outlined through the projects user centred design processes. This will then allow for the development and formation of the software architecture of the system, and the finalization of hardware components design.

More specifically, the input from the intended users will be used in order to develop the MyAirCoach online platform that will be used by doctors in order to assess the medical record of their patients and understand the evolution of their disease. Furthermore, a toolbar with decision support tools will be created that will help them manage and communication with all their patients effectively and in a privacy preserving manner.

In addition, the first version of the MyAirCoach mobile app will be created, aiming to support asthma patients to understand their condition and see how their actions and medication adherence can affect their asthma status.

Special attention will be given to the research of novel signal processing and modelling approaches that hold the promise to help medical researchers understand asthma disease and help their patients more effectively

Interested in finding out more?

Find out more about the project at myAirCoach.eu
Sign up for the myAirCoach newsletter

Connect with us on social media:

This project has received funding from the European Union's Horizon 2020 Framework Programme for Research and Innovation under grant agreement no 643607.

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