

AUSPIRO

Cystic Fibrosis patients require upwards of 30 tablets and at least an hours worth of physical therapy per day in order to stay on top of their condition. This rigorous treatment plan can become difficult to maintain, resulting in many CF patients neglecting their treatments and letting their health decline.

Introducing the AUSPIRO; a portable, personal spirometry device design for



The aim of this project was to develop a solution to poor treatment adherence within the young adult Cystic Fibrosis population. Cystic Fibrosis is a genetic lung condition that requires constant attention and treatment in the form of medication and physical therapy in order to remain healthy. Young adults (ages 16-25) are particularly at risk of developing poor treatment adherence habits, and as such this period of adolescence can have lasting effects on the patient's longterm health.

Through primary research I reached out to fellow CF patients across the country and gathered information on their treatment adherence. I found that treatment adherence fluctuated and differed between participants, however a trend emerged signalling an increase in treatment adherence surrounding bi-monthly clinic appointments where patients would communicate with their doctors.

The same participants also stated that they would be more inclined to attend these clinic appointments if they could do so remotely, as this cuts out long commute times from rural areas and the risk of cross infection between patients.

In order to facilitate remote clinic appointment participation, a device must be designed which allows the user to conduct the tests which would

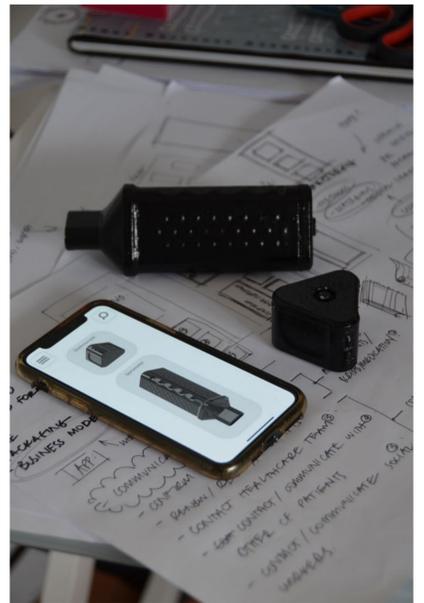
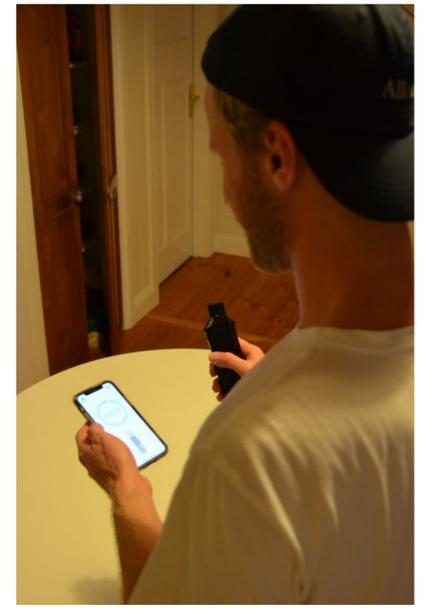
otherwise be conducted at hospital during a clinic appointment - lung function and auscultation.

Introducing the AUSPIRO, a portable, personal spirometry device designed for Cystic Fibrosis patients to test their lung function from home.

The AUSPIRO features an ultrasonic flowmeter spirometer and an AI enabled electronic stethoscope under an ABS injection moulded skin. The AUSPIRO's triangular form not only provides excellent structural rigidity, it also holds a unique aesthetic.

A dedicated iOS and Android app provides the AUSPIRO's user interface, where users can test their lung function, view and set reminders about appointments and other treatment related things, track their monthly fitness and health goals, as well as communicate with their doctors and speak with occupational therapists.

The AUSPIRO provides Cystic Fibrosis patients with the ability to accurately and regularly test their lung function, giving patients a real-time picture of their health. By being aware of one's condition, patients can make informed decisions around treatment adherence and ultimately see an improvement in quality of life.



1

Treatment and appointment reminders



2

Respiratory monitoring



The app is home to a number of features including an archive and calendar function, a fitness and health goal tracker, as well as a platform for communication between other patients and their doctors.

3

Monthly recaps



4

Communication channels



The AUSPIRO is operated via a smart phone APP. The user is prompted through testing procedures. Once tests are completed, results are archived and a copy are sent to the patient's doctor's.