

Project 4 LUNG+

A product design proposal to provide a system pulmonary physiotherapy at home



Problem

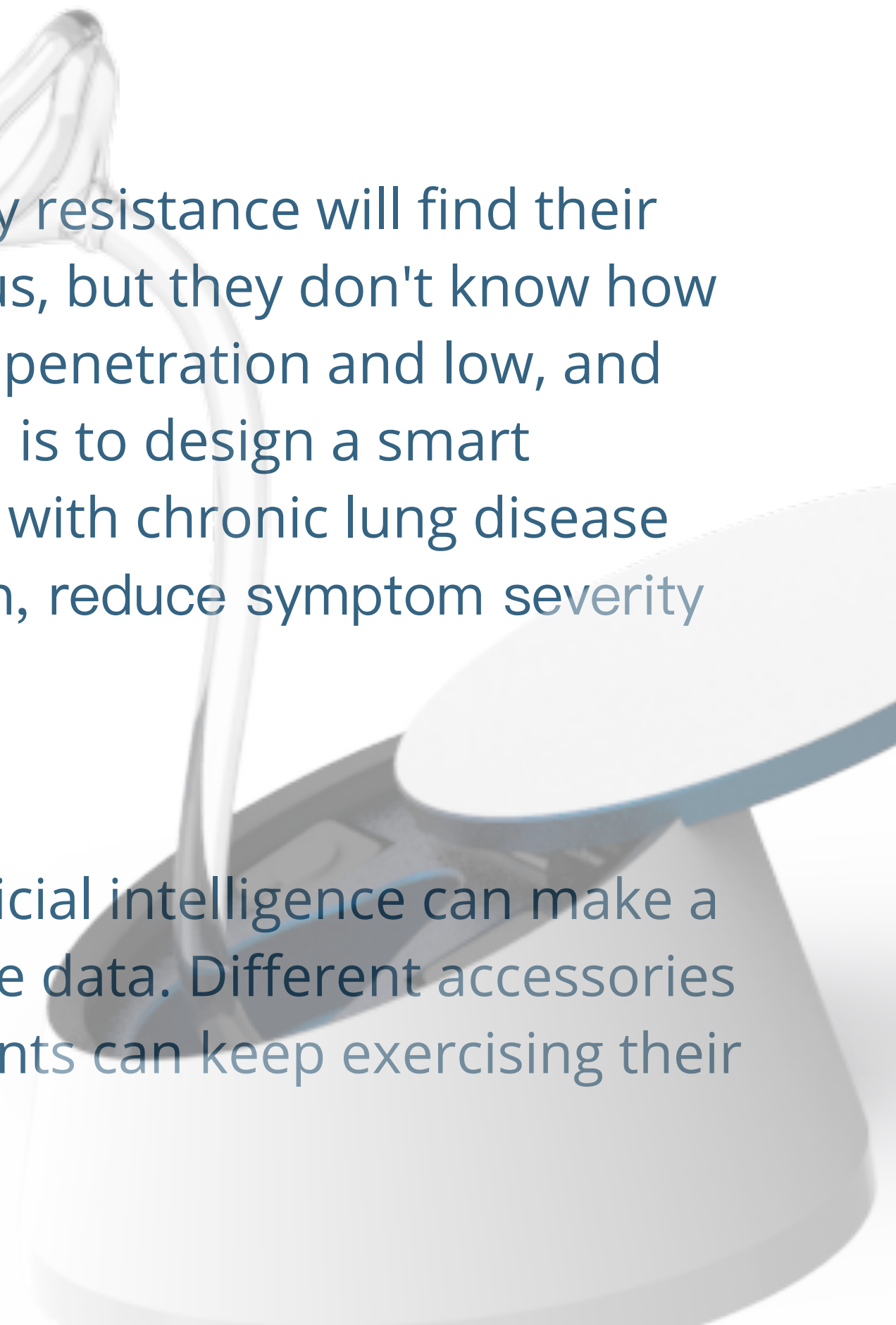
Lung function in patients with chronic obstructive pulmonary disease and other lung diseases gradually increases, and most patients ignore exercise and exercise for lung function. Breathing problems become more serious. Pulmonary therapy can improve lung function, but patients lack a plan to do pulmonary therapy at home and it is difficult to stick to it

Process

In the interview, in patients with chronic pulmonary resistance will find their usual use some simple breathing training apparatus, but they don't know how effective, professional physical therapy curriculum penetration and low, and most people can't insist for a long time, so the idea is to design a smart pulmonary physiotherapy instrument, help people with chronic lung disease exercise lung for a long time; improve lung function, reduce symptom severity and improve quality of life.

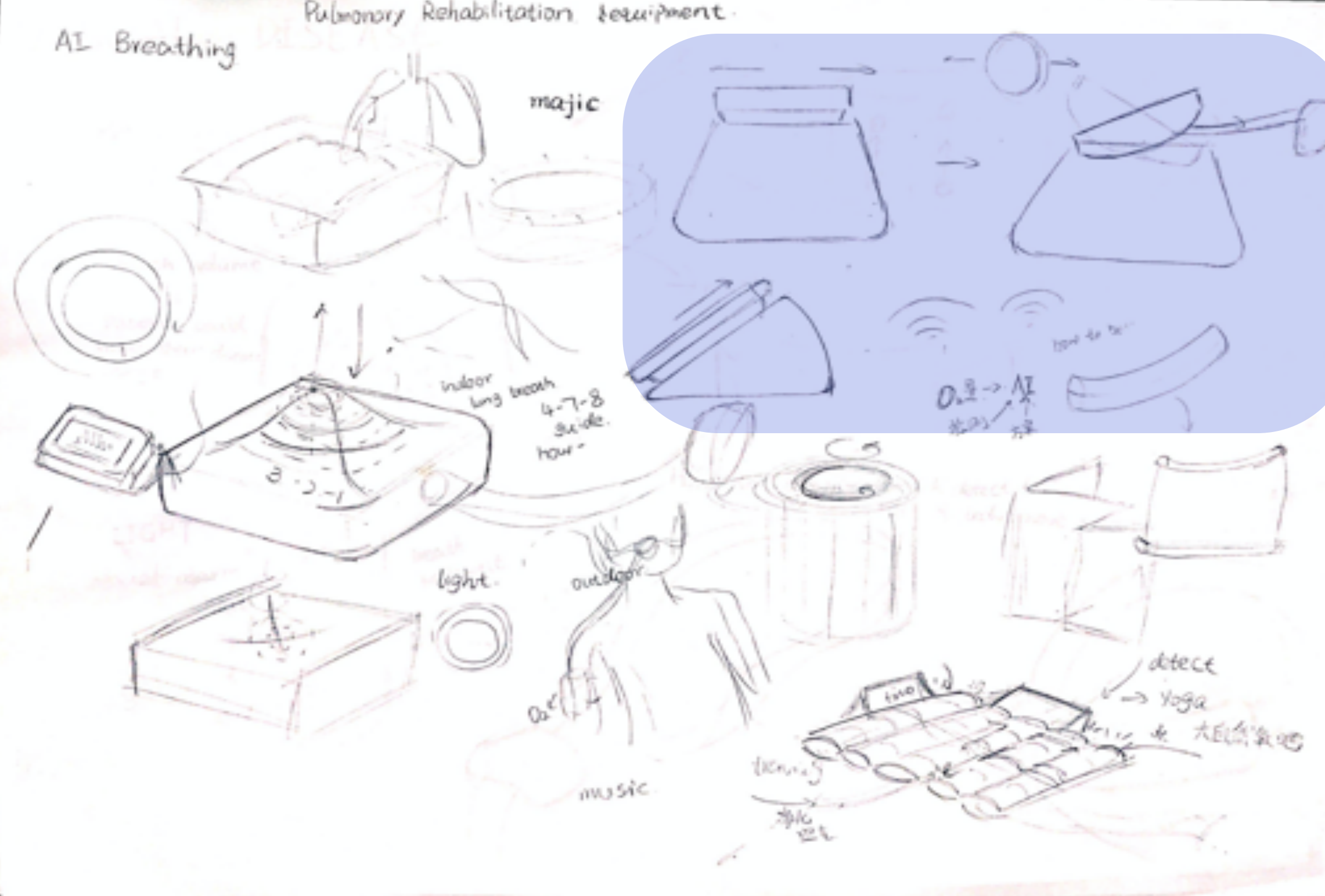
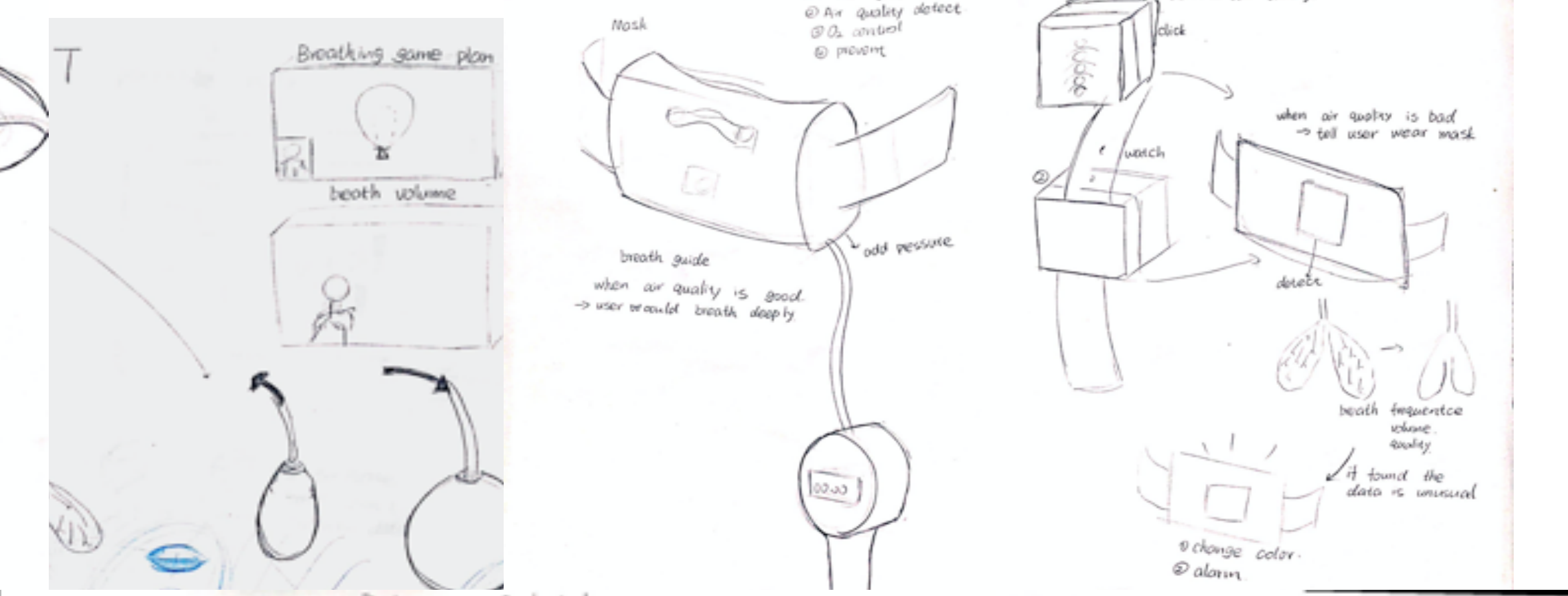
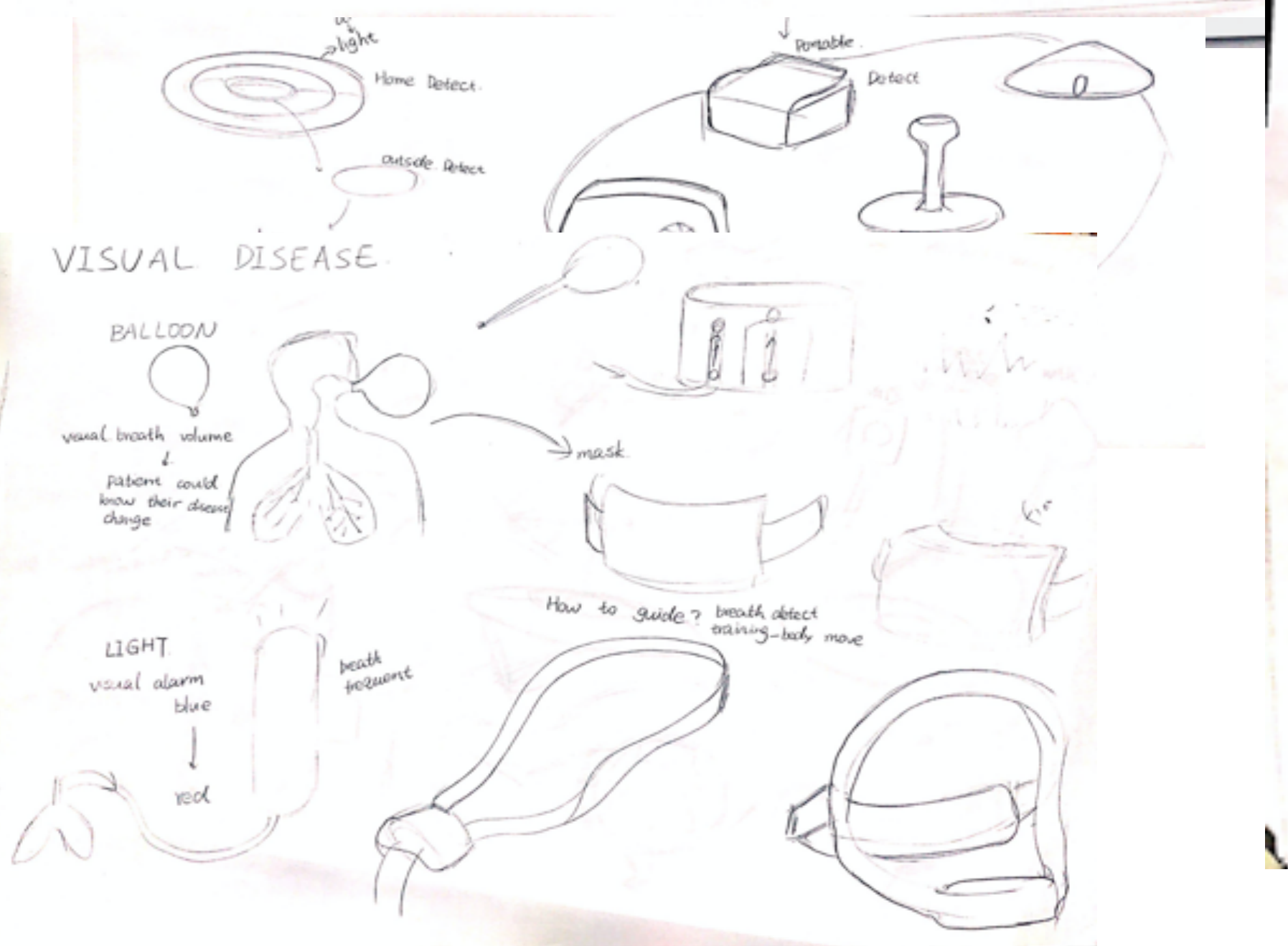
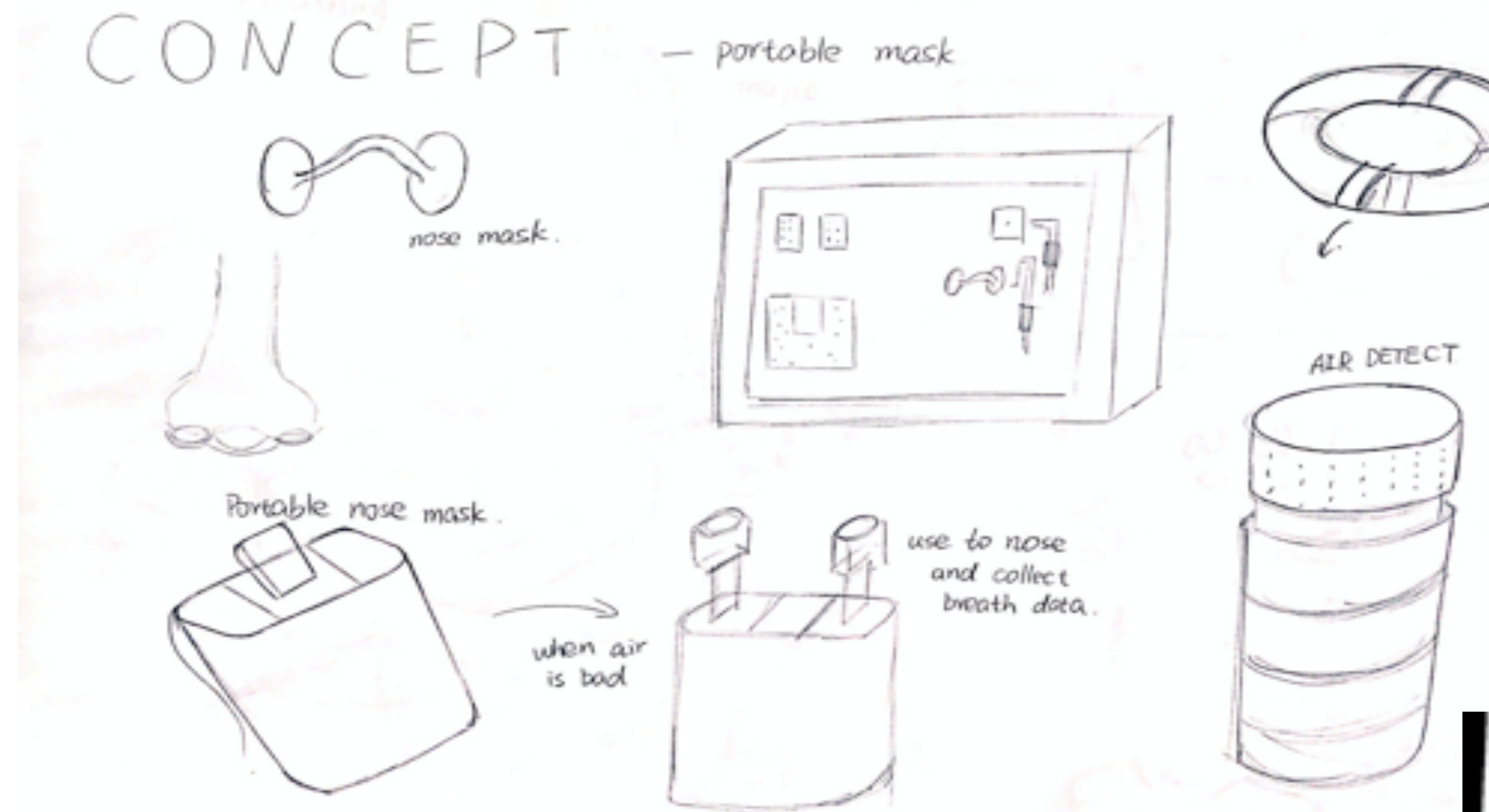
Proposal

This product can firstly test lung function, and artificial intelligence can make a suitable lung function training plan according to the data. Different accessories correspond to different training courses, and patients can keep exercising their lung function at home for a long time



CONCEPTS

Differents concepts based on research



EMPHASIZE

To understand what factors are related to chronic lung disease, I went to Yinzhou Second hospital respiratory clinic for a whole afternoon to observe and interview. By observing and role playing, I found some problems for COPD patients.

Interview

Doctor



COPD patients are advised to record their lung function.

Patients cannot be kept on a ventilator or medication for long periods of time

There is no specific treatment for chronic respiratory problems, breathing exercise is useful.

Patients



21%

patients use breathing training machine to improve lung function



3.9%

patients join respiratory physiotherapy

Pain Point

Problem

Patients neglect to exercise their lung function and exercise, and breathing problems become more serious

Needs

A long, affordable, useful lung function exercise and testing program

Respiratory Physiotherapy



Problem

- Older age (≥ 75 years) and lower socioeconomic status were 2 factors associated with nonuse
- patients living >10 miles away from a pulmonary rehabilitation facility were also less likely to initiate the service

Breathing training mechine

Problem



- patients hard to consist due to the training effect not obvious
- Only a simple function to train, the effect is not obvious and process is boring
- Could not customized their training

EMPHASIZE

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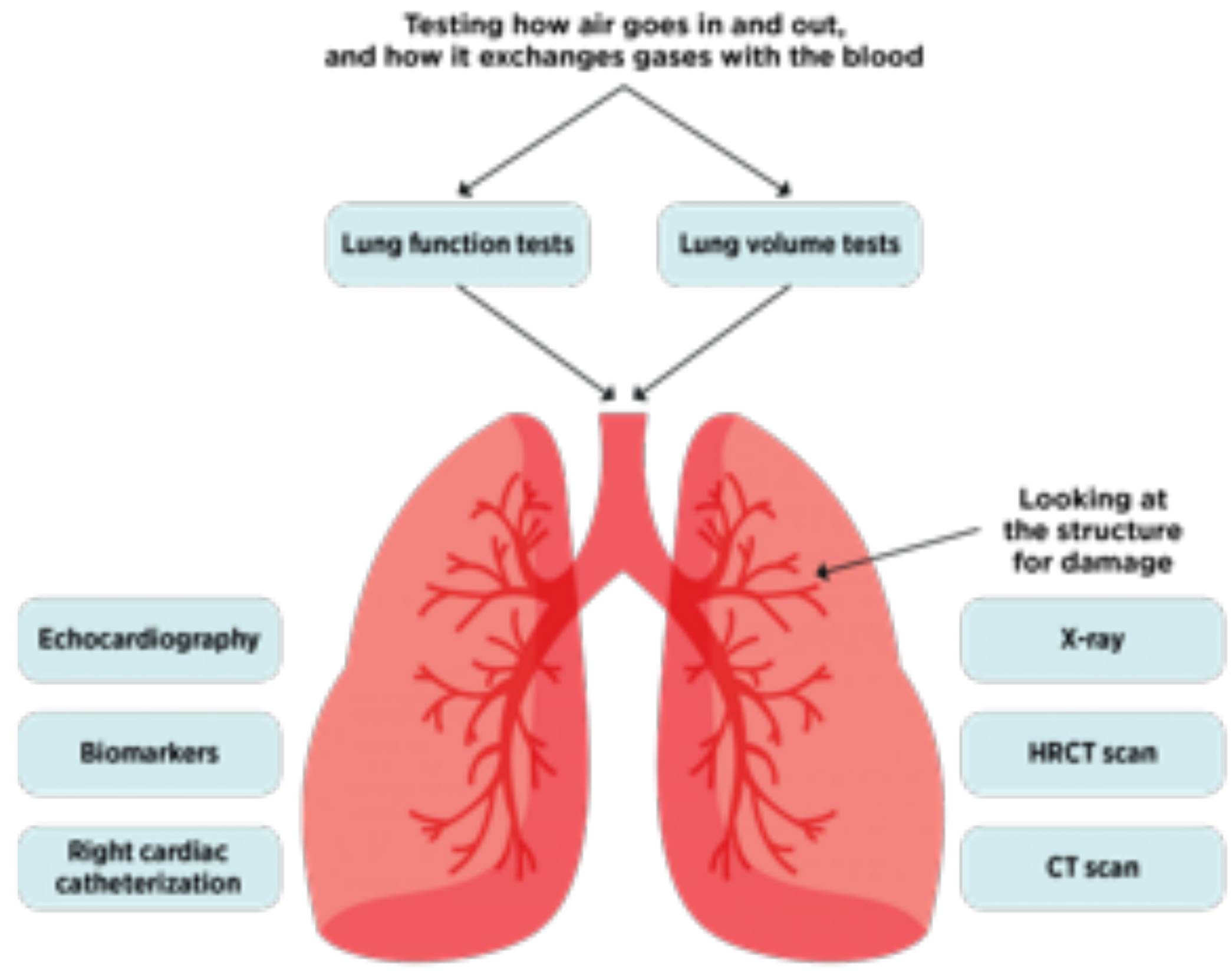
Footprint



DEFINE

By analyzing findings from observation and interviews, I finally defined what the real needs of COPD patients.

LUNG FUNCTION



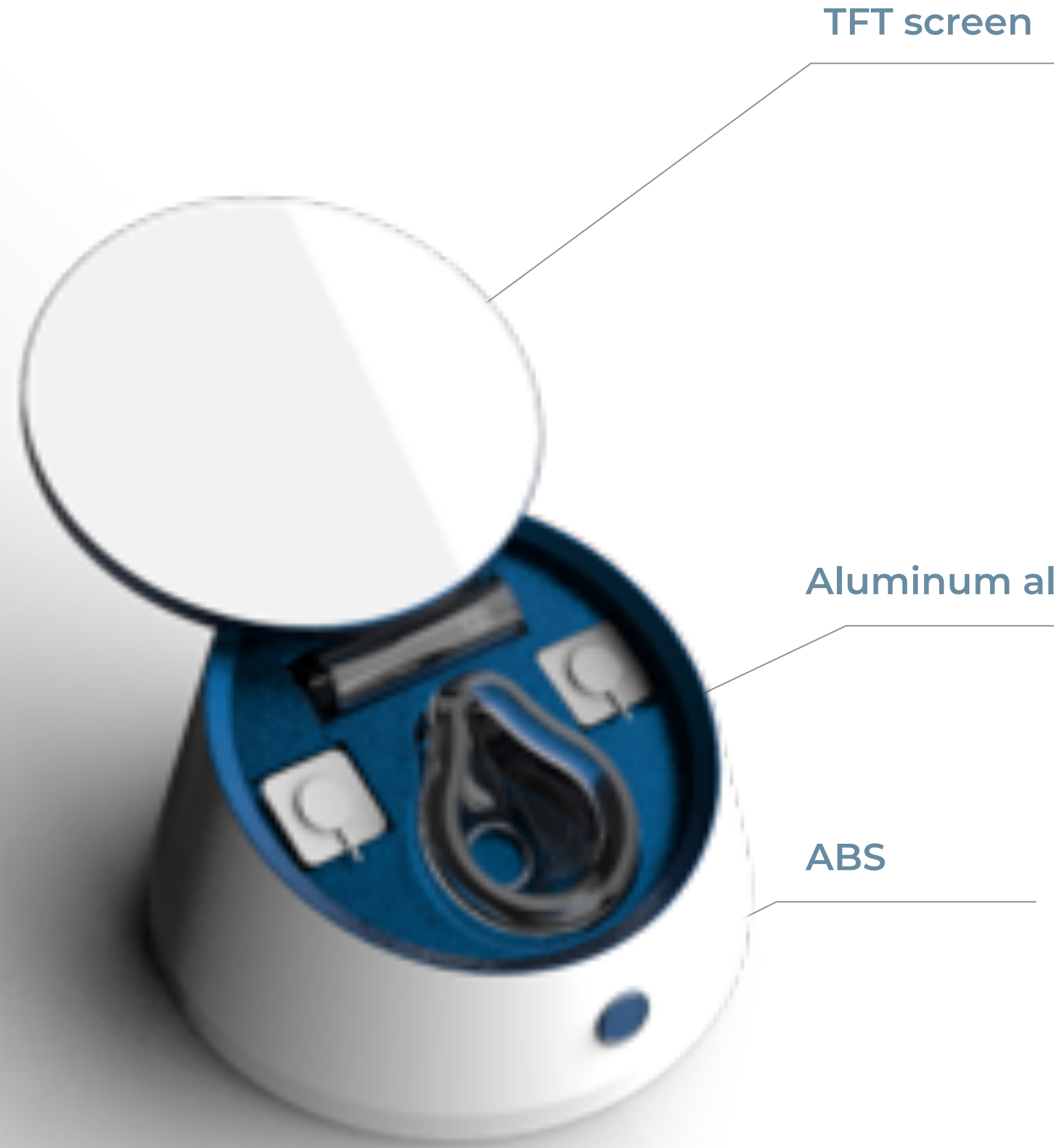
Insights

- Goals
- Improve exercise capacity
 - Improve quality of life
 - Minimize muscle wasting from prolonged corticosteroids treatment
 - Reduce hospitalization
 - Reduce respiratory symptoms
 - Reduce anxiety
 - Assist return to work and leisure activities

- A product could provide a long term preparatory physiotherapy
- A system devices to provide system training
- Use AI to test disease and customize a training session
- Use AI to collect training data and predict the development of chronic disease

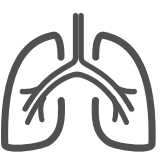
DETAILS

After investigating existing physiotherapy courses, I found that three components were needed to assist pulmonary physiotherapy



Lung Test

Test lung function and collect data



Training guide

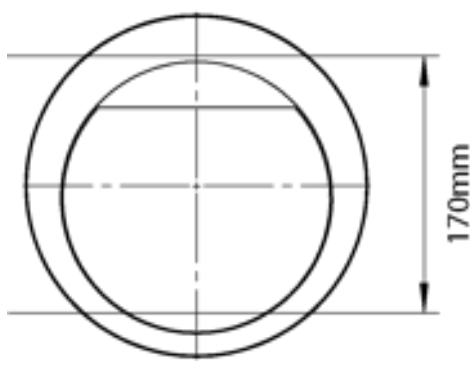
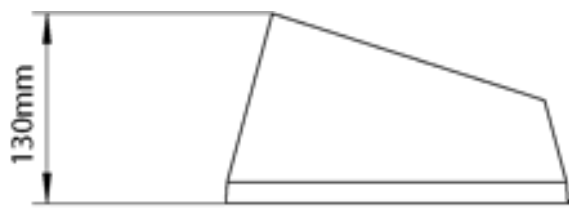
Screen add voice guide



Management

AI collect data and predict your disease

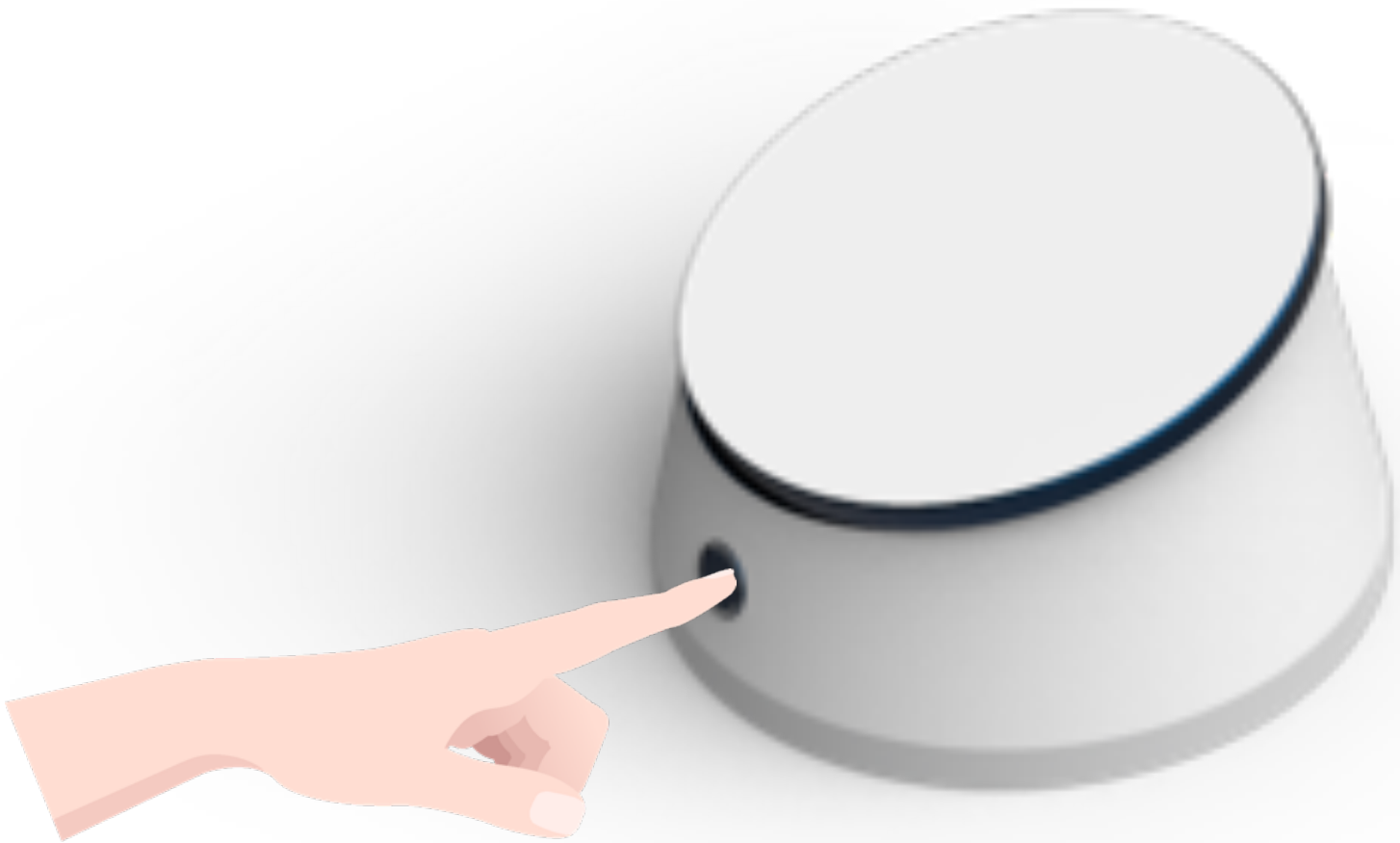
DIMENSION



HOW TO USE

After investigating existing physiotherapy courses, I found that three components were needed to assist pulmonary physiotherapy

1. Turn on it



3. Choose the function



Use mask to train breath



Use blowtorch to train and test lung data

2. Swipe to open screen

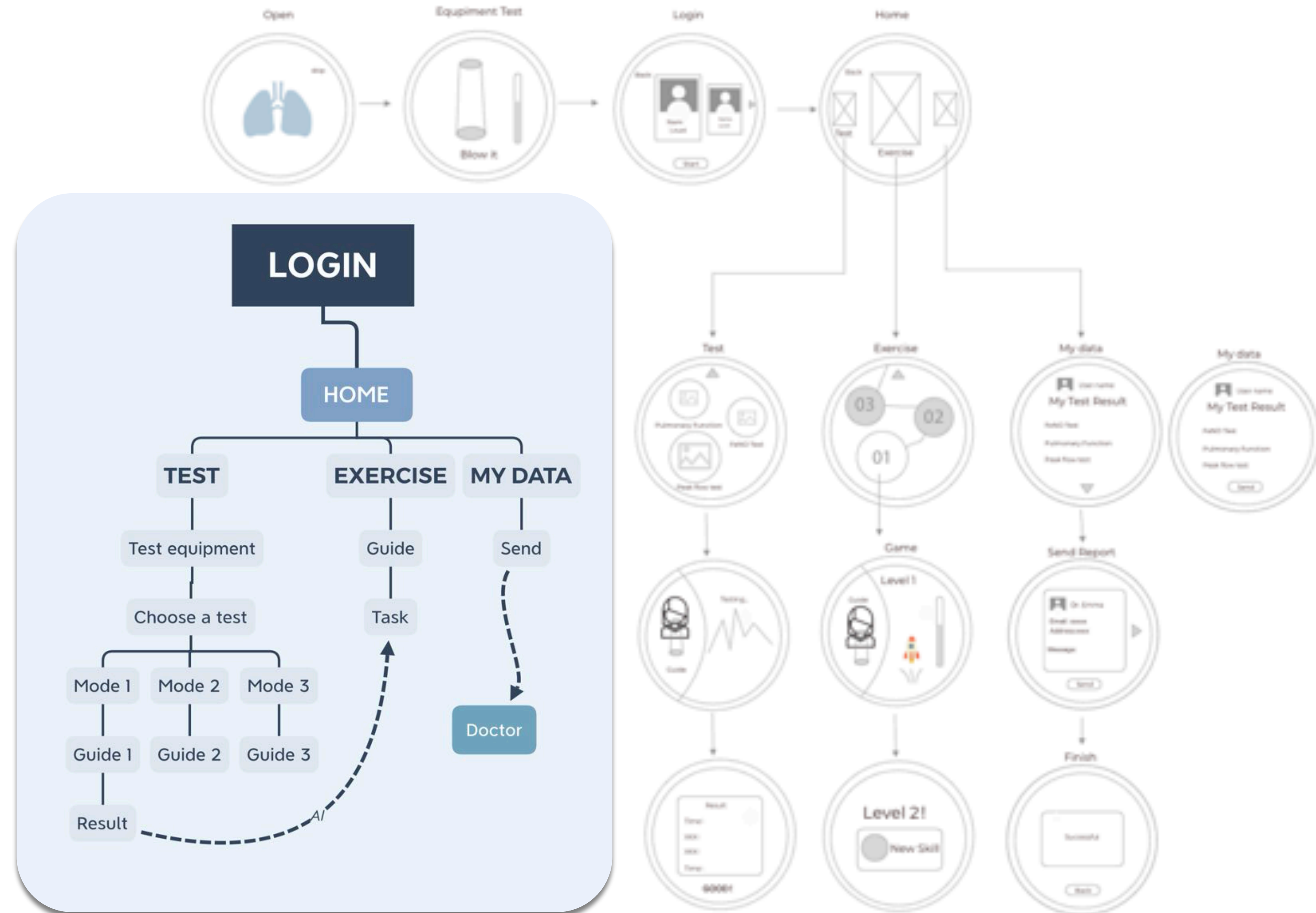


Use detector to auscultatory lung



WIREFRAME

The interface refer to the basic game interface to give users a relaxed, convenient and attractive experience



INTERFACE

