

PURE NATURAL MINT EYE MASSAGER

Innovative Materials | Product System Design

The inspiration for this innovative material and product design project comes from my accidental opportunity to stimulate my interest in the traditional Chinese medicine pharmacology of peppermint, and after investigation, eye diseases caused by overuse of eyes among the general population in China have become a serious social problem. At present, there is no daily eye massage with pharmacological effect on the market, so I designed this inflatable multi-functional mint eye massage instrument using pure natural organic materials such as mint. So as to contribute my own strength to the general public's eye health.



Inspiration of Chinese Medicine Theory of Mint

My inspiration comes from my recollection of one time when I stayed up all night, which made me very uncomfortable after getting up on the next day, and told my grandfather. After a while, he brought a bowl of hot mint soup for me to drink and told me its role in clearing away the toxic substances, and it can cure eye diseases. Later, I searched on the Internet for its efficacy and function and found that mint can be used to treat colds, fever, red eyes, swelling pain, neuralgia, etc. I was immediately interested in mint as a traditional Chinese medicine and studied its pharmacology.

Characteristics & Effects of Mint

In traditional Chinese medicine, mint is believed to have the characteristics of **Pungency, Fragrance and Coolness.**

Benefits for Our Body

Internal Long-term Benefits



External Direct Benefits



Traditional Mint Products



Mint Tea

Fresh mint can refresh our mind when used to make tea.



Mint Oil

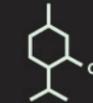
Mint is extracted into oil for external application.



Mint Dried

The dried mint can be used for oral Chinese medicine.

Menthol: The Main Chemical Component



It is a colorless transparent thin crystal. It has many therapeutic properties, can **inhibit the propagation of bacteria and viruses**, and can play a very good role in **reducing swelling**.

How To Eliminate Dark Circles With Mint

The Cause of Dark Circles



The Effect of Mint on Dark Circles

It can quickly eliminate dark circles because it is rich in **antioxidants and cooling properties.**

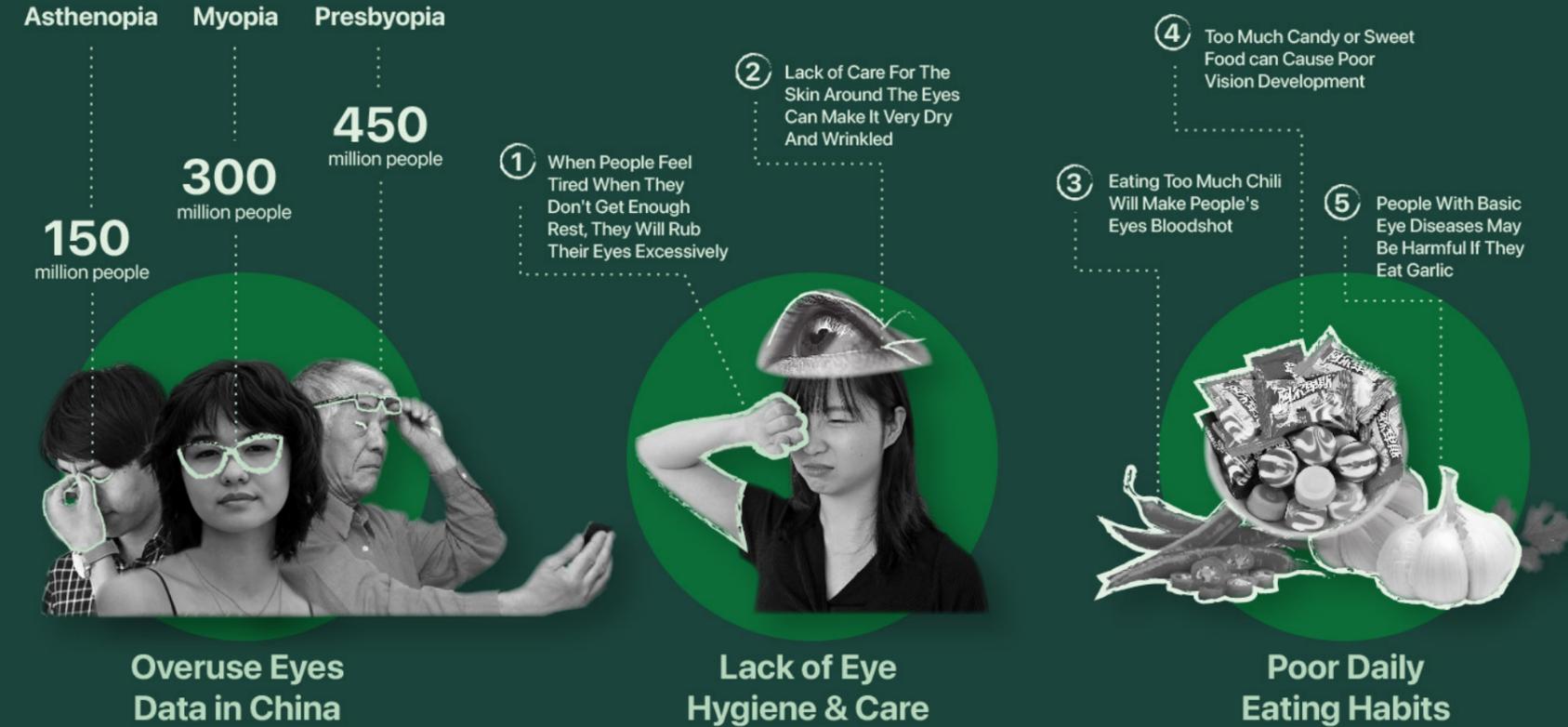
How to Apply Mint to Eyes

- 1 Take 1.5-6 grams to crush
- 2 Put it under your eyes
- 3 Stand for 15 Minutes
- 4 Repeat Three times a week

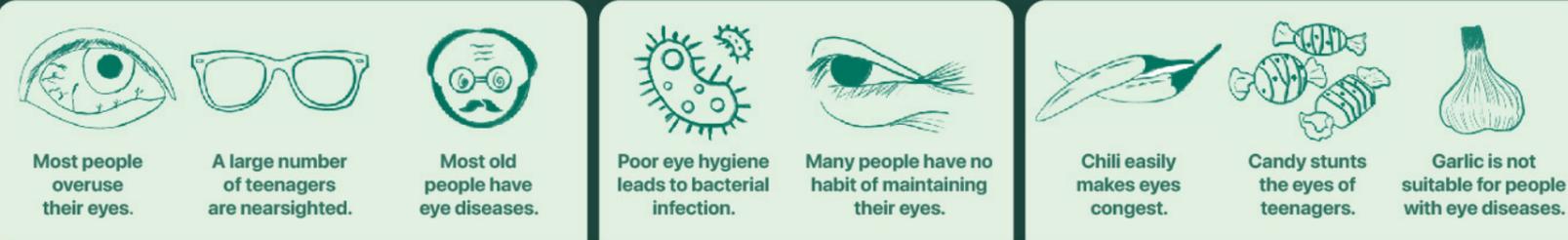
Research Summary

Through in-depth research and study on the pharmacology of traditional Chinese medicine and the role of the chemical components of mint, and **mint has a magical healing effect** on the eyes. It immediately reminded me that there is a **very big hidden danger** in the habit of **using eyes** of modern **Chinese people**. If effective **relaxation** and **natural treatment** are adopted, the quality of life of many people will be improved in the future.

Bad Habits of Modern People for Eye Health



Frustration Caused by Various Factors



Conclusion: Most modern people's eyes are in a sub-health state, and the poor eye hygiene and eating habits also aggravate this situation.

Interview with Eye Massager Users

Main Purpose of the Interview

Investigate the advantages and disadvantages of the eye massager users who are using the eye massager on the market at present, the ways for users to relieve their eyes, and understand their pain points and difficulties in eye protection.

Personal Information of Interviewee

Jordan

- Age: 22 years old
- Education level: Bachelor Degree
- Profession: Student
- Time of Using Eye Massager: 3 years

Anna

- Age: 40 years old
- Education level: Master Degree
- Career: Professional Manager
- Time of Using Eye Massager: 8 years

Quotes From the Interview Question

How long do you use the eye massager each time?

Maximum of 20 min per use, and I will soon be uncomfortable.

Do you think there are any pros and cons of eye massage mask?

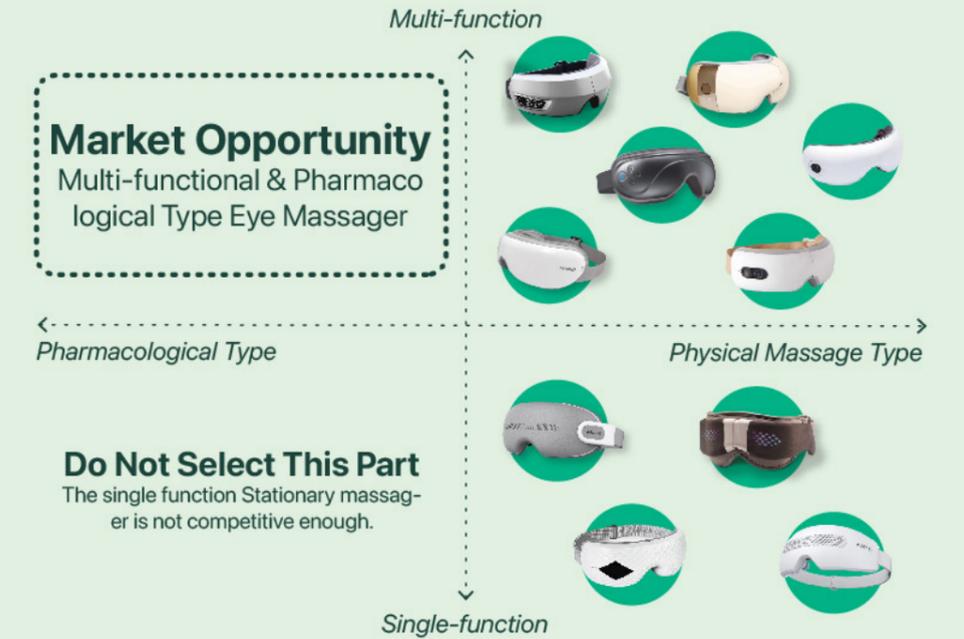
The portability of the eye massager is poor, because the volume is too

Summary of Product Characteristics After the Interview

| Duration of Each Use | | Pros & Cons | | The Best Time Period | | Other Ways to Relax | | Frustration | |
|----------------------|--------|----------------------|-----------------------------|----------------------|------------------------|----------------------|---------------|--------------------------|------------------------------------|
| 5 min | 10 min | Rapid Fatigue Relief | Not Easy to Carry | After Lunch | Later in the Afternoon | Sleep | SPA | It takes a long term. | Eye Pressure Cannot be Eradicated. |
| 15min | 20min | Reduce Work Pressure | Not Enough Free Time to Use | After Work | Before Going to Bed | Look at Green Plants | Look Far Away | Fear of Electric Leakage | No Material to Help the Eyes. |

Market Research

Existing Product & Target Audiences



Design Criteria



Material Experiment

The Main Purpose of the Test

Based on the experimental results of 6 aspects (formula, thickness, smell, status, texture and color) after mixing the basic materials, the replaceable inner membrane material of the massage eye mask that is most suitable for human eyes is formulated

Test Stages & Groups

Stage 1: Formula Proportion, Material Thickness & Cooling Effect

- Group A** Basic Formula Test With Glycerin As Variable
- Group B** Material Effects of Different Thicknesses
- Group C** Cooling Effect Caused By The Amount of Mint

Stage 2: Appearance of Different Status, Textures & Colors

- Group D** Shape & Effect Test of Mint Under Different Status
- Group E** Testing of 4 different Texture Molds
- Group F** Color Pattern & Texture Fusion Test

Experimental Tools & Materials

Materials :

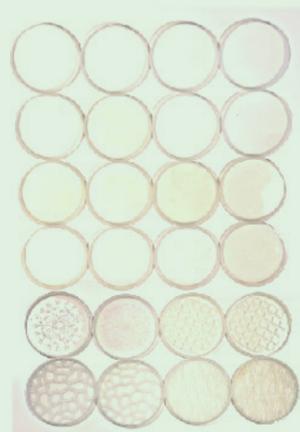
Mint,
Edible glycerin,
Gelatin,
Edible pigments.

Tools :

Beaker,
Grinder,
Saucepan,
Silicone shovel,
Weighing Meter.



Petri Dish : The experiment shared 24 Petri dishes and was divided into 6 groups. Each test group had 4 dishes.



Stage 1 Test: Effect of Formula, Thickness & Mint Amount

Group A: Basic Formula Test With Glycerin As Variable

Take **2g of mint**, pour a bag of **7g of gelatin powder** and **35ml of water** as quantitative, and then pour **20ml, 30ml, 40ml and 50ml** of glycerol into four Petri dishes as variables to test the toughness, softness and comfort caused by the variables.

Overview



Tactile Comfort Test



Toughness Tensile Test



Group A Conclusion

- Visual Effect** No obvious difference.
- Tactile Effect** A3 has the best softness.
- Toughness Effect** A3 has ideal toughness.

Group B: Material Effects of Different Thicknesses

This group mainly uses the **best formula of Group A** to test the effect of four different thicknesses (**4/4, 3/4, 2/4, 1/4**) when the material is filled in the petri dish, and to test the weight, touch and toughness of the material.

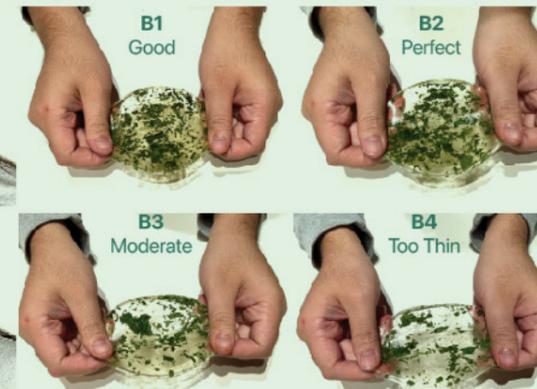
Overview



Tactile Comfort Test



Toughness Tensile Test



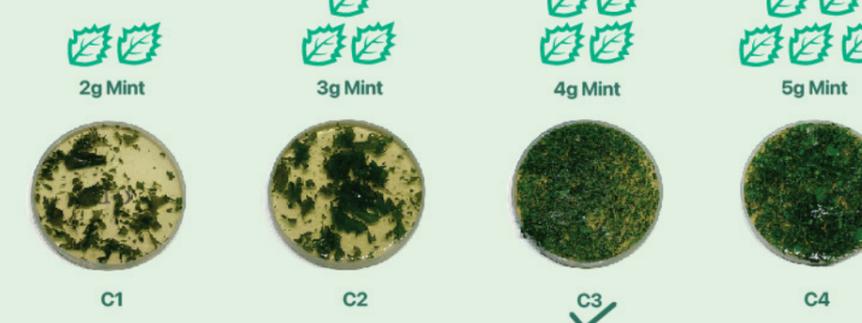
Group B Conclusion

- Visual Effect** No obvious difference.
- Tactile Effect** B2 has the most appropriate weight.
- Toughness Effect** B2 has perfect toughness.

Group C: Cooling Effect Caused By The Amount of Mint

This group also uses the **best formula of Group A** as the basic value of this group to test the changes in the cool touch and mint smell of different mint amounts (**2g, 3g, 4g, and 5g**). In order to improve its formula, the next stage of testing will be used as the base value.

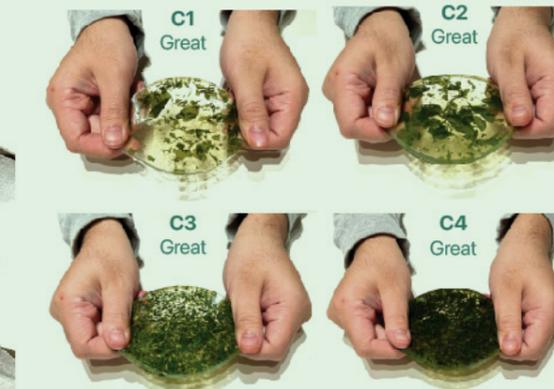
Overview



Tactile Comfort Test



Toughness Tensile Test



Group C Conclusion

- Visual Effect** C3 & C4 have good effects.
- Tactile Effect** C3 has the great cooling.
- Toughness Effect** No obvious difference.

Stage 2 Test: Appearance of Different Status, Textures & Colors

Group D: Shape & Effect Test of Mint Under Different Status

The formula, thickness and mint amount in the first stage are taken as the basic values of this group to test the optimal shape effect of mint under four different status (Mint leaves, Mint residue, Mint juice, and Mint dried).

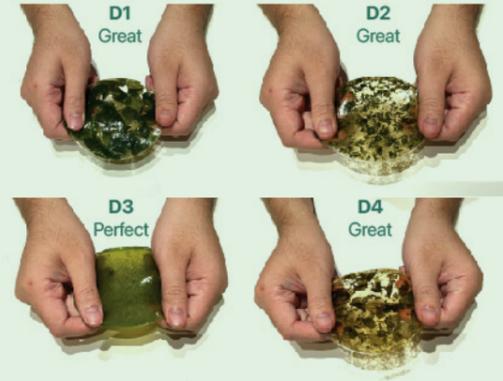
Overview



Tactile Comfort Test



Toughness Tensile Test



Group D Conclusion



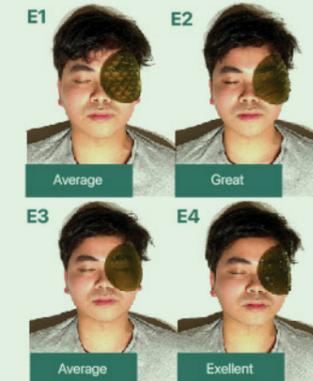
Group E: Testing of 4 different Texture Molds

In this group, according to the best state "juice" of mint in group D, the pattern test was conducted under the texture of four different molds (shell, muscle fiber, firework, and cell block). As the final shape test of the later finished eye mask material.

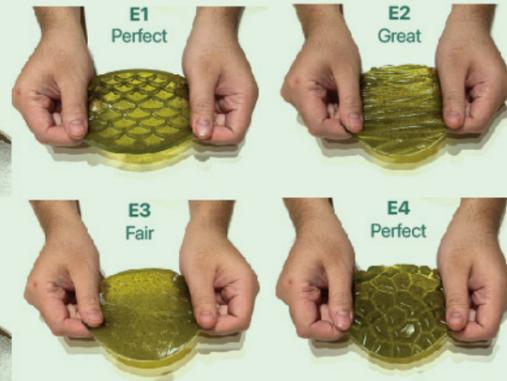
Overview



Tactile Comfort Test



Toughness Tensile Test



Group E Conclusion



Group F: Color Pattern & Texture Fusion Test

In the next group of tests, I used four colors and tried to draw four patterns with them, respectively (spot embellishment, stripe graffiti, vortex stirring, and semicircle gradient). The purpose of this is to try more possibilities to let the texture and pattern blend.

Overview



Tactile Comfort Test



Toughness Tensile Test



Group F Conclusion



Experiment Conclusion

Final formulation of Eye Mask Materials

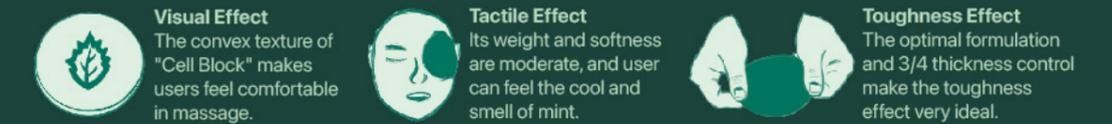
Basic Materials



Appearance Effect



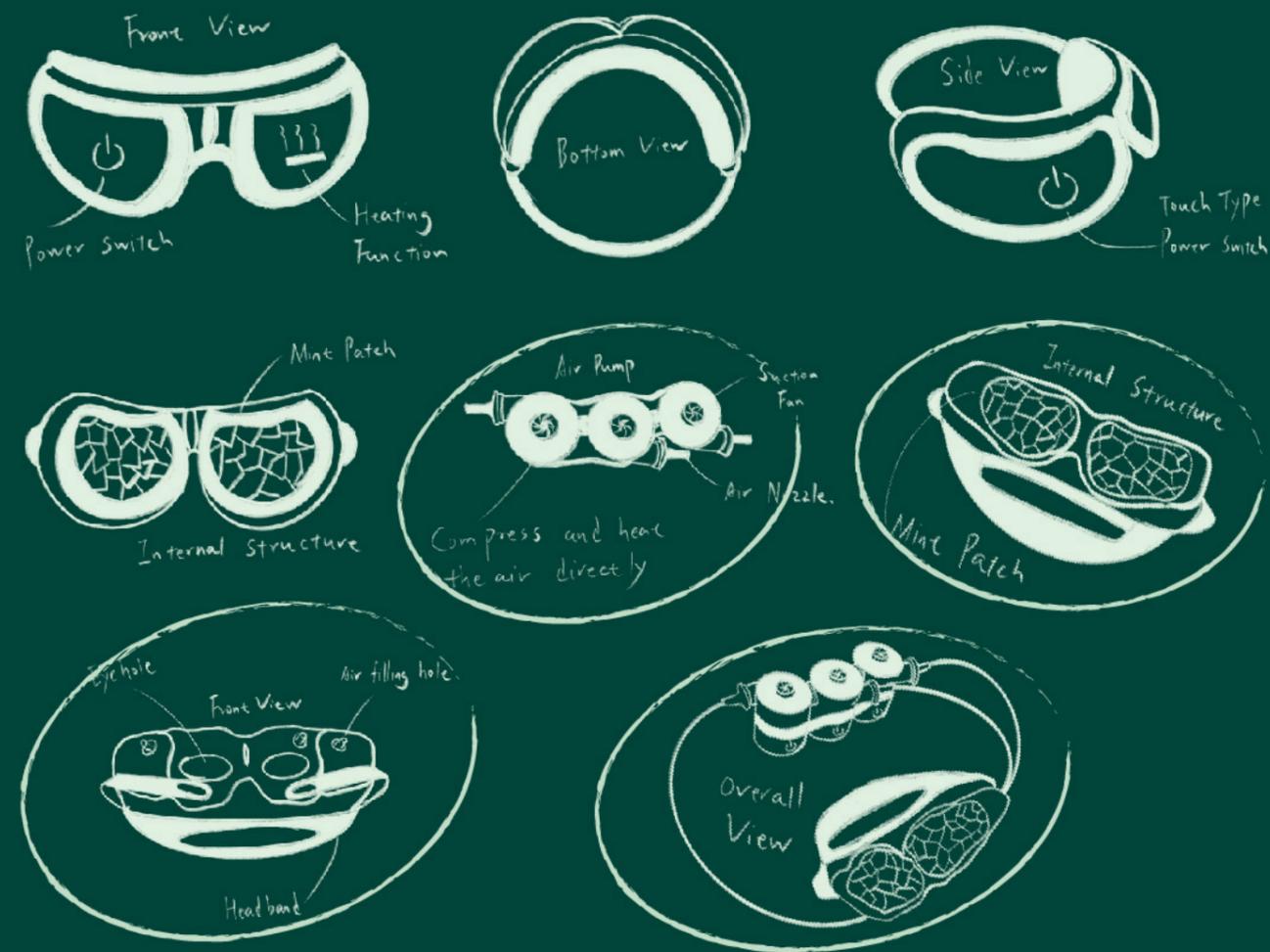
Characteristics of the Formula



Production & Sales System



Thumbnail Sketches of Product Design



Summary of Reasons for Choosing this Design

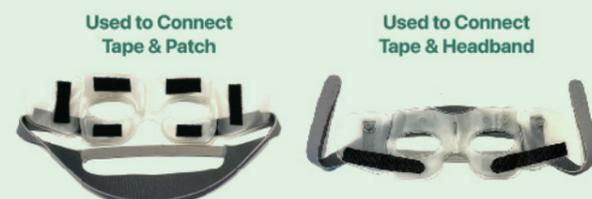
- Exposed parts can improve the efficiency of replacement and upgrading.
- The weight of these product will be much lighter than that of the all-in-one machine
- Compared with most all-in-one massager, it maintains its particularity.

Prototype & Final Product

A Cutting Process of Mint Patches



B Attach Hook & Loop Tape to the Eye Mask Airbag



C Stick Mint Patches on the Airbag



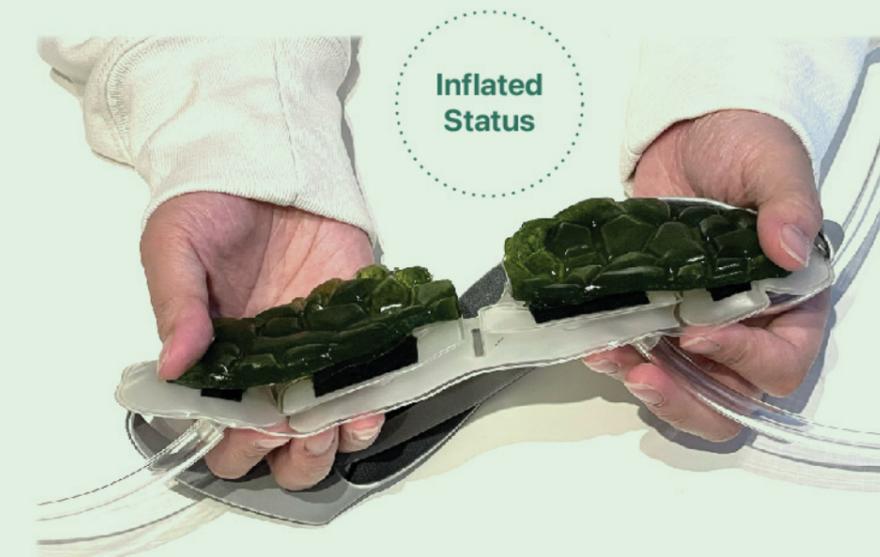
D Installation Steps of Air Pump Device



E Product Adjustment Test



F Final Eye Mask Inflation Test



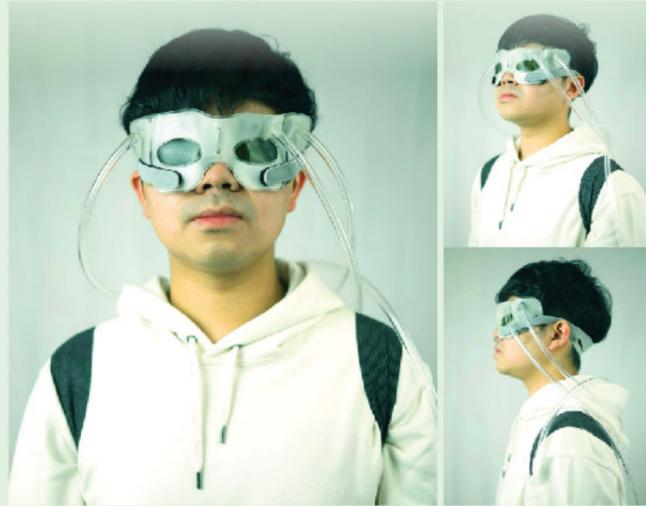
User Scenario

This is an eye massager product, which can be used for **inflatable massage, heating and traditional Chinese medicine care**. It is used to **alleviate** some **eye diseases** caused by **overuse of eyes**, and has a **relaxing effect**.

Plan A: Solid Patch Eye Massager often used when users want to completely relax their eyes.



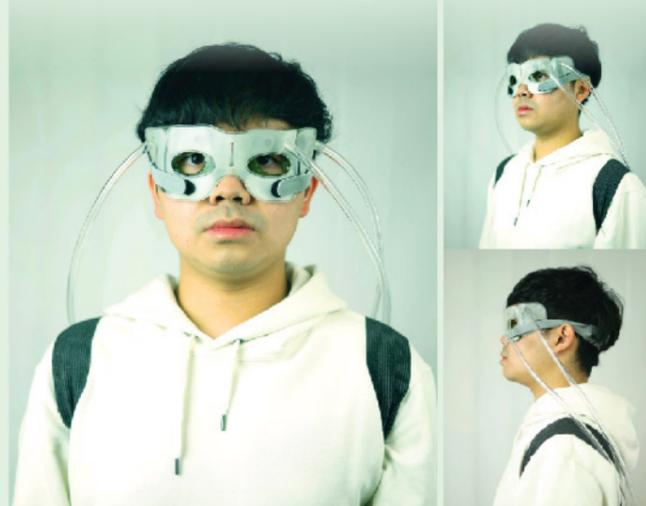
Close Up of Face: Plan A Eye Massager



Plan B: Visible Patch Eye Massager often used when customers only want to massage the eye circumference.



Close Up of Face: Plan B Eye Massager



Wearing Steps



Future Plan

This final product is used as an **experimental prototype** to provide a very solid **foundation** for **future product commercialization**. Based on this, I will **expand my research** on the application of **sustainable environmental protection** and traditional **Chinese medicine pharmacological materials** for eye masks in the future, such as adding plants that are ignored in daily life, such as lotus leaves and lilies. These are also very beneficial to people's eyes and play an anti-inflammatory role. In addition, I will continue to **optimize the portability and comfort** of the inflator to provide my customers with a highquality product.

