



# 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



Adjust Heart Rate



Maintain Lung Vitality

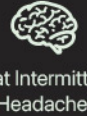


Help liver Detoxify

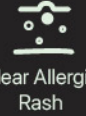
External Direct Benefits



Relieve Eye Fatigue



Treat Intermittent Headache



Clear Allergic Rash

### Traditional Mint Products



#### Mint Tea

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



#### Mint Oil

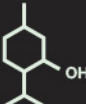
Mint is extracted into oil for external application.



#### 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



Genes



Dehydration



Sun Exposure



Lack of Sleep

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

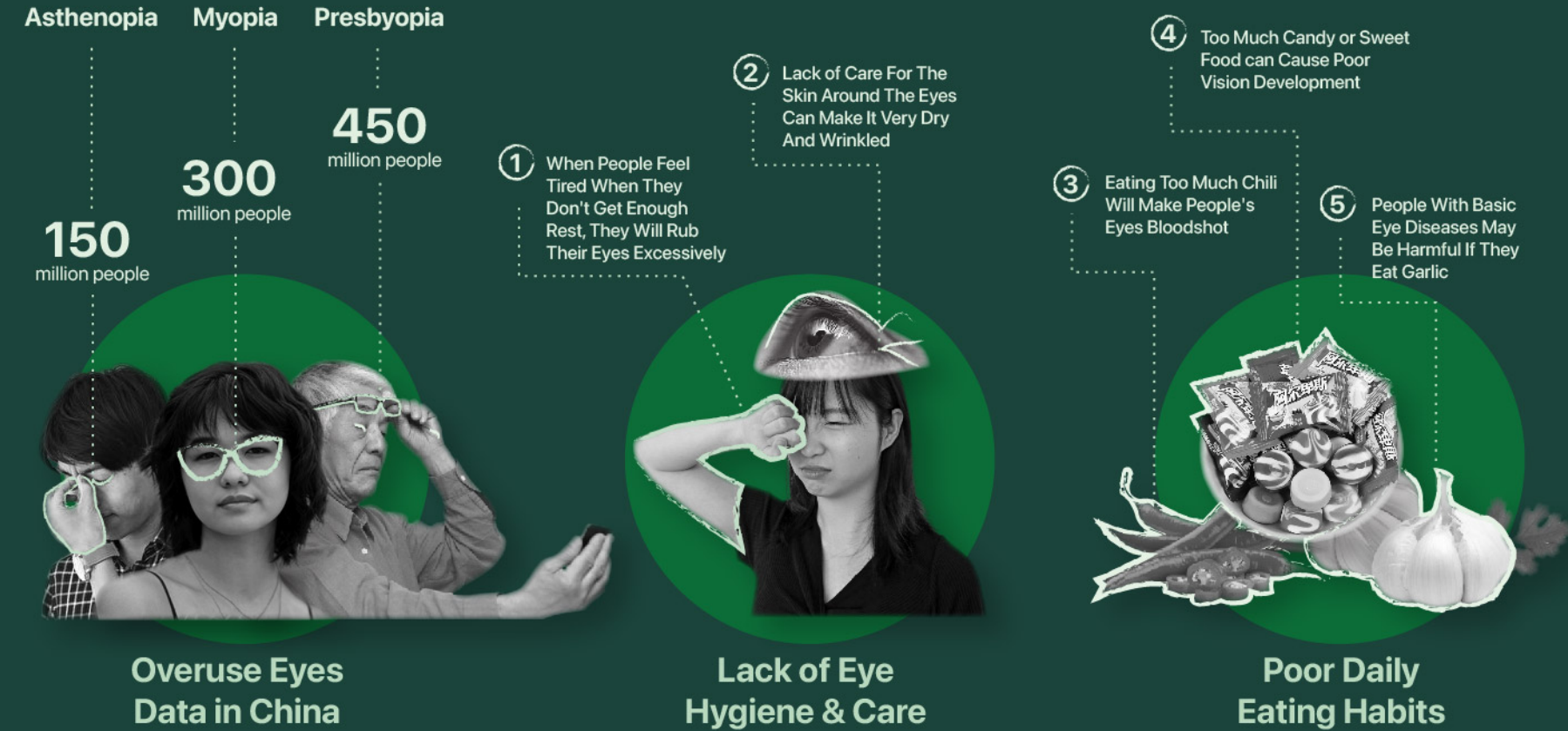
- 1 Take 1.5-6 grams to crush
- 2 Put it under your eyes
- 3 Stand for 15 Minutes
- 4 Repeat Three times a week

### Research Summary

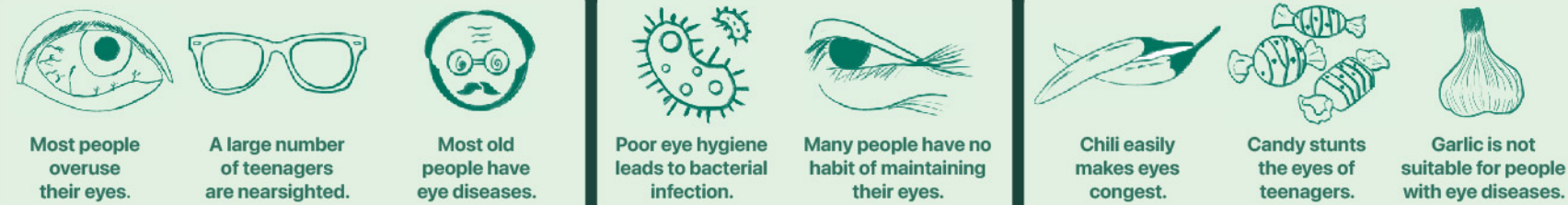
Through in-depth research and study on the pharmacology of traditional Chinese medicine and the role of the chemical components of mint, and **mint has a magical healing effect** on the eyes. It immediately reminded me that there is a **very big hidden danger** in the habit of **using eyes** of modern **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?



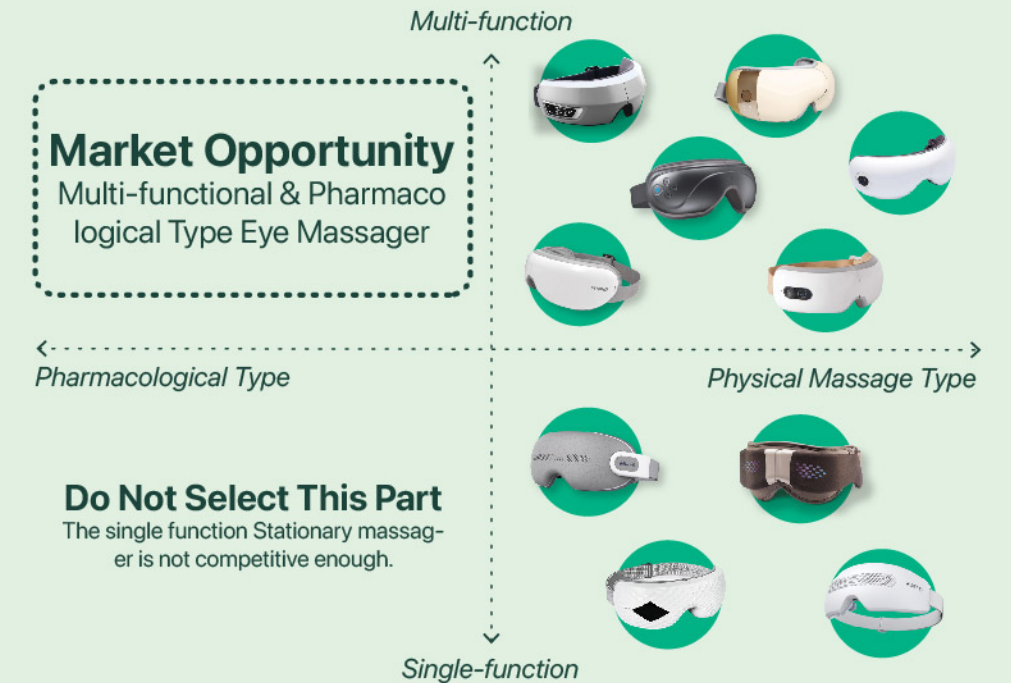
The portability of the eye massager is poor, because the volume is too

## 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



It has the Healing effect of pure natural herbs.



Massage eye mask with light touch and comfort.



It has three functions: air massage, heating and cooling application



# 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



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



## Experimental Tools & Materials

### Materials :

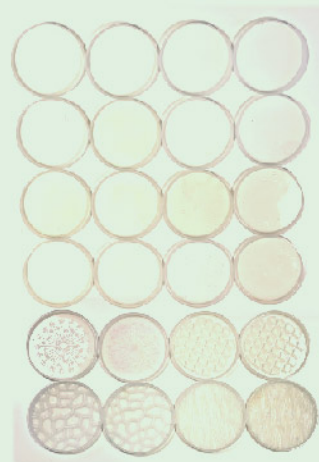
Mint,  
Edible glycerin,  
Gelatin,  
Edible pigments.

### 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.

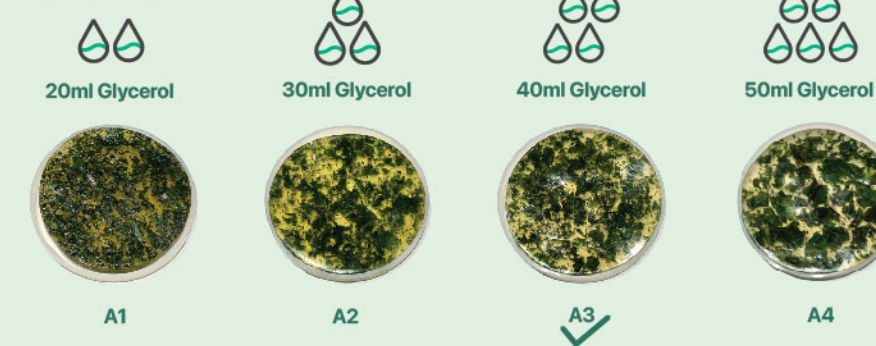


# Stage 1 Test: Effect of Formula, Thickness & Mint Amount

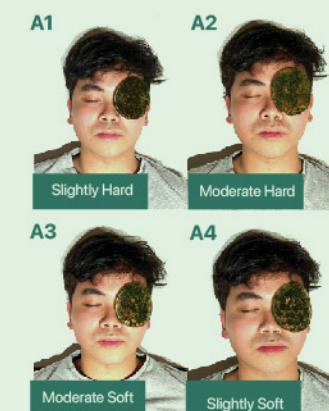
## Group A: Basic Formula Test With Glycerin As Variable

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.

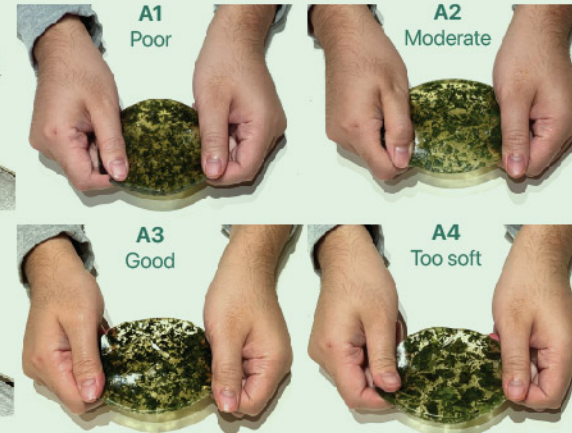
### Overview



### Tactile Comfort Test



### Toughness Tensile Test



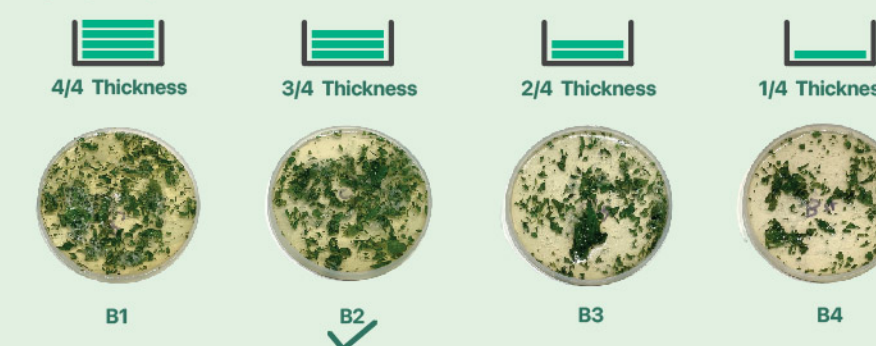
## Group A Conclusion



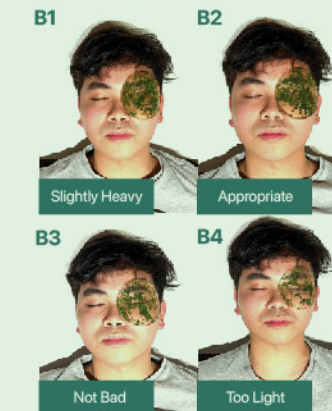
## Group B: Material Effects of Different Thicknesses

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.

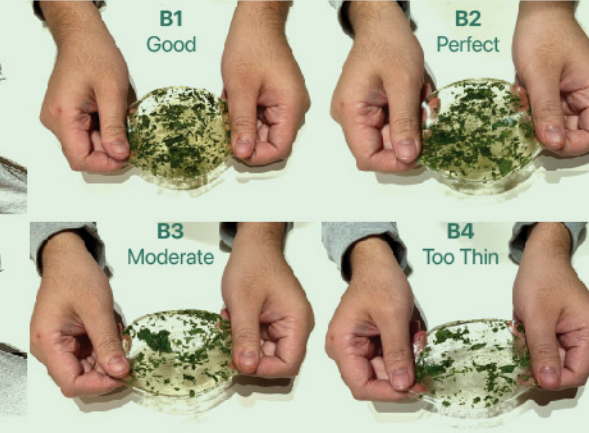
### Overview



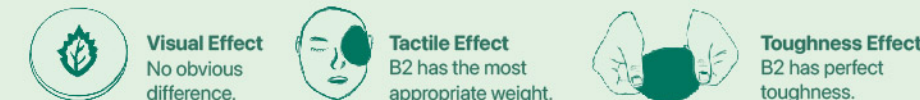
### Tactile Comfort Test



### Toughness Tensile Test



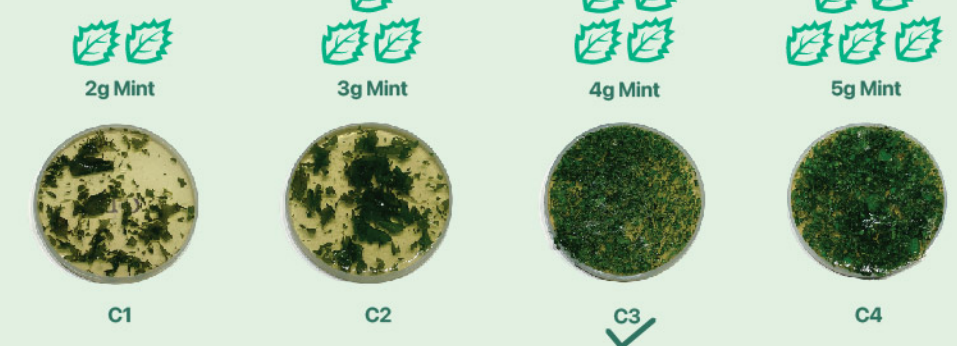
## Group B Conclusion



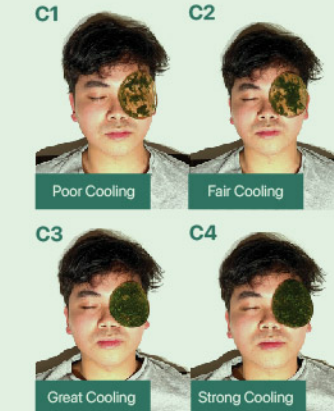
## Group C: Cooling Effect Caused By The Amount of Mint

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.

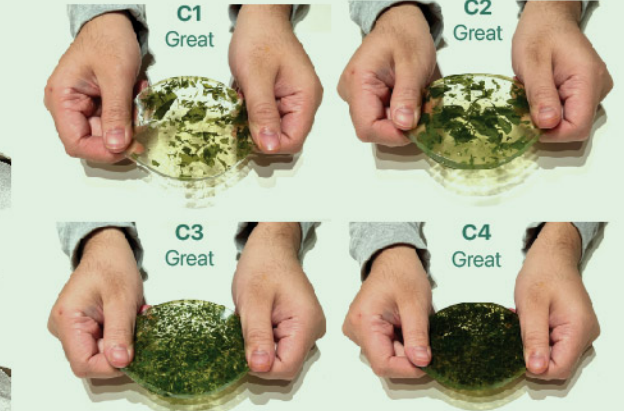
### Overview



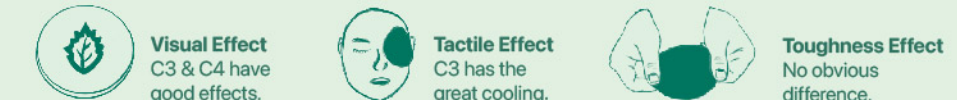
### Tactile Comfort Test



### Toughness Tensile Test



## Group C Conclusion





# 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

Whole Leaves



D1

Residue



D2

Juice



D3

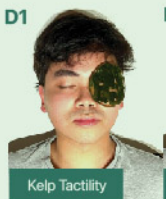
Dried Leaves



D4

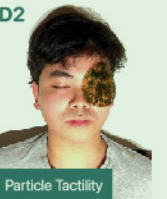
Tactile Comfort Test

D1



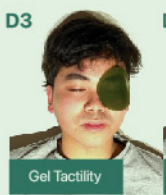
D1

D2




D2

D3



D3


D4



D4


Toughness Tensile Test

D1




D1 Great

D2




D2 Great

D3



D3 Perfect

D4



D4 Great

Group D Conclusion

Visual Effect

D3 "Juice" is the best.

Tactile Effect

D3 has the best softness.

Toughness Effect


D3 has the best toughness.

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

Shell




E1

Muscle Fiber




E2

Firework



E3

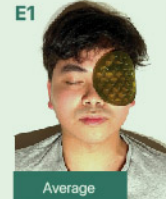
Cell Block



E4

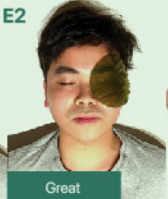
Tactile Comfort Test

E1



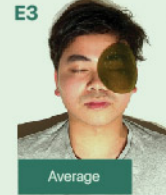
E1

E2



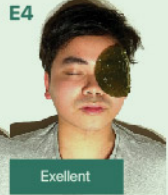
E2

E3



E3


E4



E4


Toughness Tensile Test

E1




E1 Perfect

E2




E2 Great

E3



E3 Fair

E4



E4 Perfect

Group E Conclusion

Visual Effect

The texture of E2 & E4 is the best.

Tactile Effect

E4 has the best tactile.

Toughness Effect


E1 & E4 has the perfect toughness.

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

F1




F1

F2



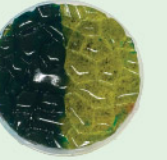
F2

F3



F3


F4



F4


Tactile Comfort Test

F1




F1

F2




F2

F3



F3


F4



F4


Toughness Tensile Test

F1




F1 Perfect

F2




F2 Great

F3



F3 Fair

F4



F4 Perfect

Group F Conclusion

Visual Effect

The effect of F4 is fairly good.

Tactile Effect

F4 has the best tactile.

Toughness Effect


F1 & F4 has the perfect toughness.

# Experiment Conclusion


## Final formulation of Eye Mask Materials

Basic Materials


35ml Water




7g Gelatin



4g Mint




40ml Glycerol




Appearance Effect


Beat mint into juice



Mold with "Cell Block"



3/4 Thickness



## Characteristics of the Formula

Visual Effect

The convex texture of "Cell Block" makes users feel comfortable in massage.


Tactile Effect

Its weight and softness are moderate, and user can feel the cool and smell of mint.

Toughness Effect

The optimal formulation and 3/4 thickness control make the toughness effect very ideal.

# Production & Sales System

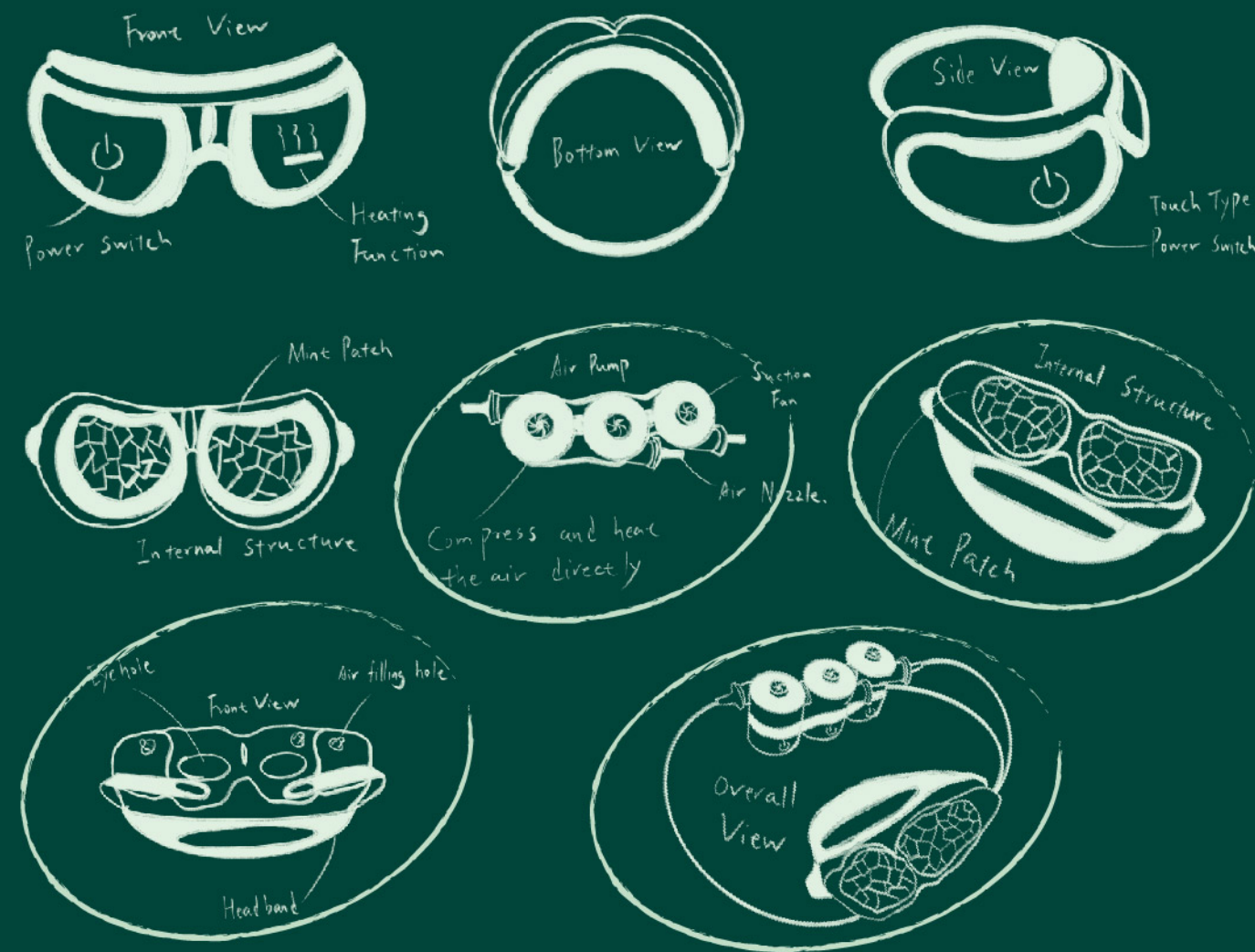


```
graph TD
    Factory[Factory Supporting Production] --> Materials[Eye mask materials]
    Materials --> Stores[Stores]
    Stores --> Customer[Customer]
    Customer --> Recycle[Recycle Used Eye Mask Materials]
    Recycle --> Factory
    Stores --> Recycle
    Recycle --> Reward[Reward]
    Recycle --> Service[Customized service]
    Reward --> Stores
    Service --> Stores
```

The flowchart illustrates the production and sales system. It begins with 'Factory Supporting Production' leading to 'Eye mask materials'. These materials are then distributed to 'Stores', which serve the 'Customer'. The 'Customer' can return 'Recycle Used Eye Mask Materials' to the 'Factory' or 'Stores'. The 'Stores' also offer 'Reward' and 'Customized service' to the 'Customer'. The 'Reward' and 'Customized service' are linked to the 'Recycle Used Eye Mask Materials' process.



# Thumbnail Sketches of Product Design

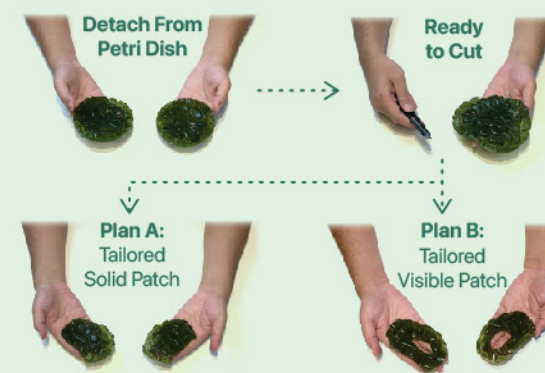


## Summary of Reasons for Choosing this Design

- 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



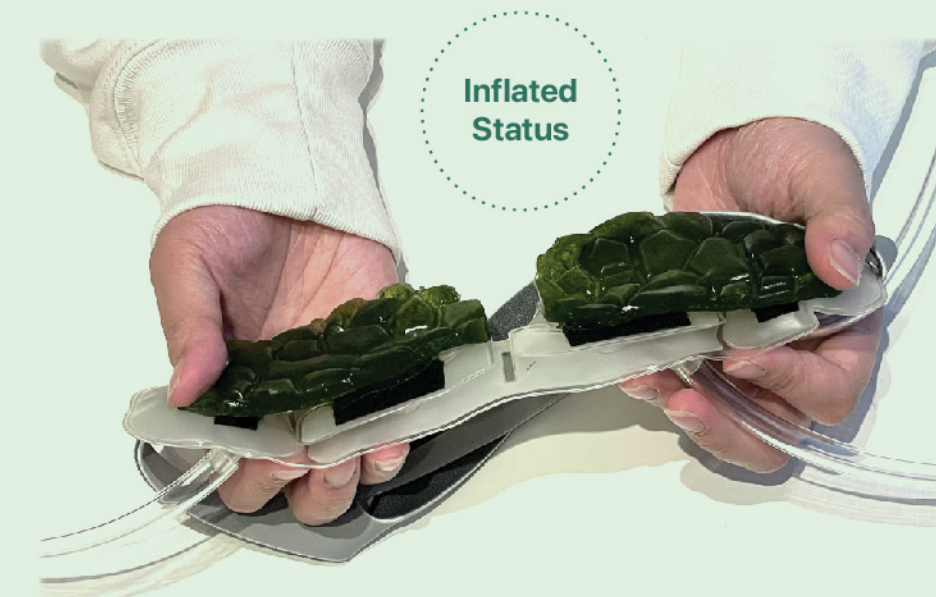
## D Installation Steps of Air Pump Device



## 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.



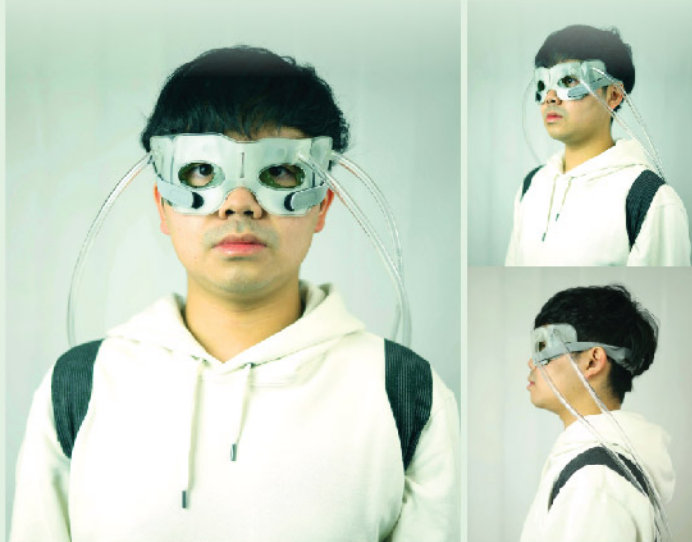
Close Up of Face: Plan A Eye Massager



**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.

