

# LIFEELING:

## A 'Detox' Metaphor-Based Fitness Tracking and Reminder Device designed for Elderly

Long Ling<sup>1\*</sup>, Xiyu Zheng<sup>1\*</sup>, Jiayu Pan<sup>1</sup>, Hao Chen<sup>1</sup>, Yuting Diao<sup>2</sup>, Guanhong Liu<sup>1†</sup>

<sup>1</sup>: Tongji University, <sup>2</sup>: Tsinghua University, \*: Equal contribution, †: Corresponding author



### 01 Abstract

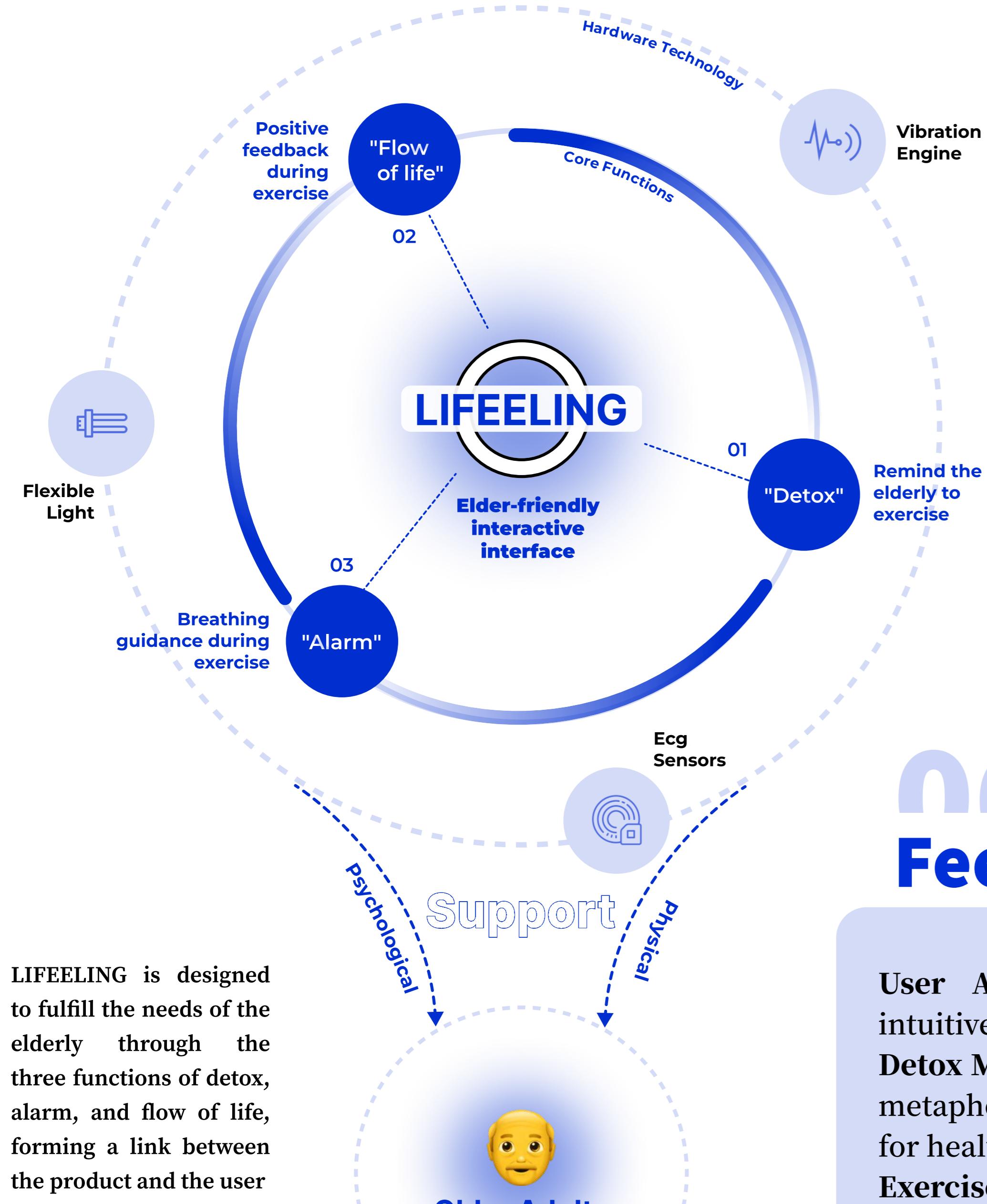
With society aging, electronic wearable devices (EWDS) can be a viable option to promote healthy living among the elderly. However, these devices often present complex graphics, difficult interfaces, and inappropriate assistance features, which hinder their use by older individuals. To address this, we conducted a formative interview and found that the elderly need simple and positive signals, psychological support through objects, and guidance for preventing over-exercise in EWDS. Thus, we propose LIFEELING, a fitness tracking and reminder system that combines the traditional bracelet form factor with the prevalent concept of "detoxification" among the Chinese elderly. Additionally, LIFEELING can provide positive psychological sustenance using the metaphor of "detoxification" and mimic design. Meanwhile, it can monitor the user's heart rate and assist with breathing adjustments. A preliminary study helps us understand how the elderly perceive it and better position our contributions.

### 02 Motivation

The challenges of complex interfaces, stigma, and insufficient psychological and fitness support in current wearable devices motivate the exploration of an elderly-friendly fitness wearable that aligns with seniors' cultural beliefs and psychological needs in China.

### 05 Design

#### System Map



### 06 Feedback

**User Acceptance:** Most found the device intuitive, portable, and suitable for daily use.  
**Detox Metaphor Appeal:** Participants liked the metaphor, suggesting clearer colors/symbols for health status.  
**Exercise Tracking Needs:** Strong interest in features for long-term data and personalized workout adjustments.

### 02 Background

#### Cultural Beliefs

##### Detoxification Health Concept

The "detoxification" philosophy in Chinese culture suggests that detoxification can promote the smooth flow of vital energy and bodily fluids, thereby enhancing organ functions and their coordination, boosting the body's positive energy, and maintaining a healthy state, avoiding sub-health or disease conditions.

##### Object Attachment

Many elderly Chinese associate their health with symbolic items. In this context, many elderly people carry jade, silver bracelets, bead strings, and other religious items, believing that these objects reflect their health status.

#### Challenges in Existing Devices

1. Many elderly users struggle with wearable devices due to their complex interfaces, small buttons, and intricate controls, leading to low adoption rates.
2. Studies have shown that older adults experience a sense of stigma when using wearables, as designers often fail to address aesthetic preferences, privacy concerns, and acceptable usage behaviors for seniors.
3. Furthermore, seniors often find it difficult to comprehend data displayed on small screens, especially given age-related vision decline, which complicates the usability of such devices.

### 04 Key Findings

#### User Interview

##### Need Simple and Positive Signals

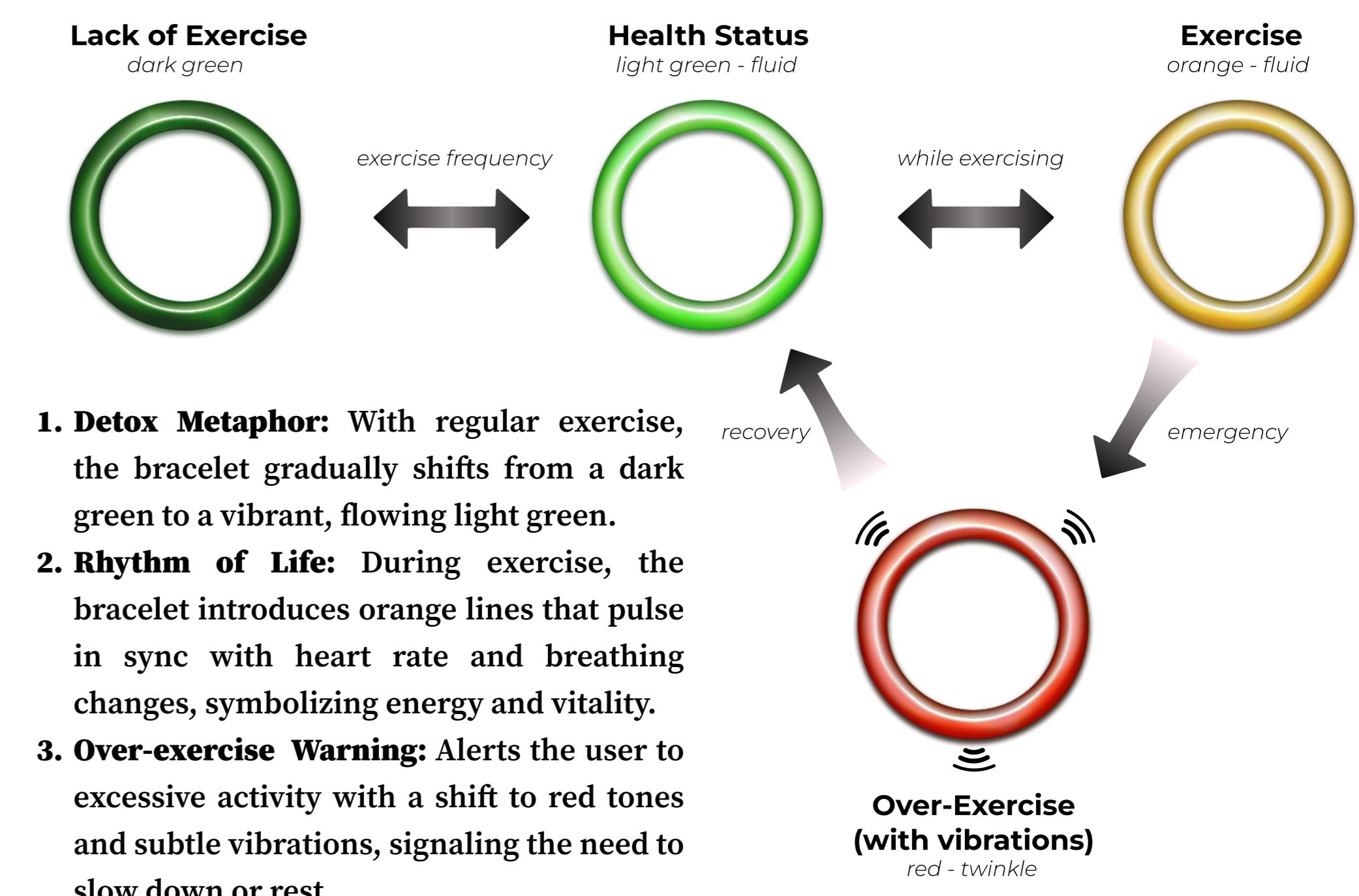
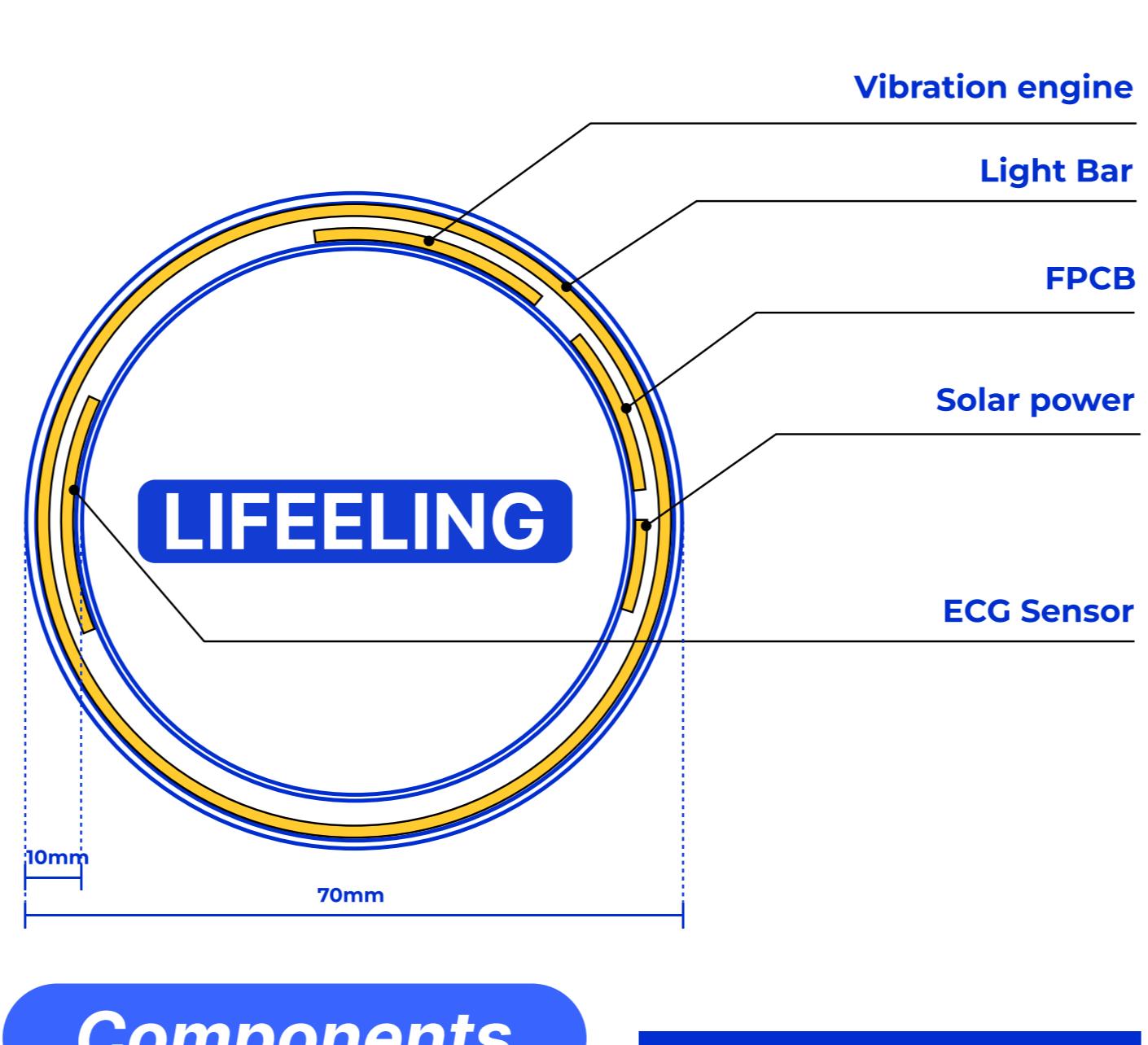
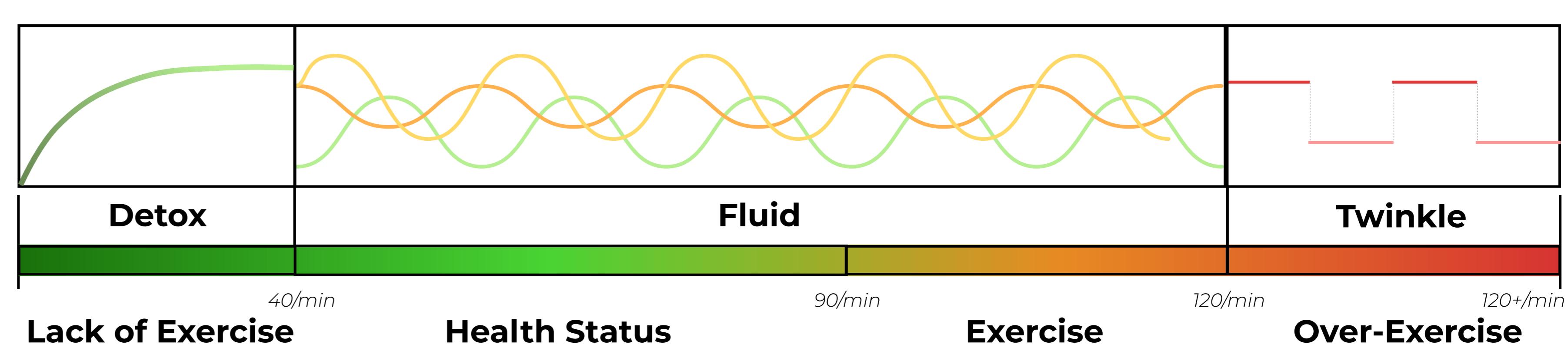
Elderly people expect simple, easy-to-understand, and visible signals to show the positive effects of exercise.

##### Have Psychological Reliance on Objects

Influenced by Buddhist culture, some older people tend to assign health-related symbolic meanings to specific objects as safeguards.

##### Expect Guidance to Prevent Over-exercise

They wanted to stay energized through exercise and felt that challenging exercise could increase confidence and physical health.



### 07 Future Work

**User Testing Expansion:** Broaden to diverse participants, focusing on privacy and comfort.

**Refined Metaphor Design:** Integrate cultural symbols like "yin-yang" for intuitive elderly health wearables.

**Wider Applications:** Apply metaphor design to smart home, health, and education devices, enhancing quality of life.