An illustration of a woman's torso in shades of pink. Two hands are placed on her chest. Several stylized flowers in various colors (pink, yellow, white, purple) are scattered around the chest area. The background is a solid light pink.

*"1 out of 8 women in US will be
diagnosed with life threatening
breast disease in their lifetime"
According to American cancer society*

Making Breast Health Monitoring

Simple, Accurate, Accessible, Safe

Revolutionary "breast health risk"

Monitoring system for Early Detection

Introduction

Breast Disease

Why Early Detection



Mammography (MMG)

2D standard MMG is the most common modality of screening women for Breast health

A considerable time gap between annual screenings

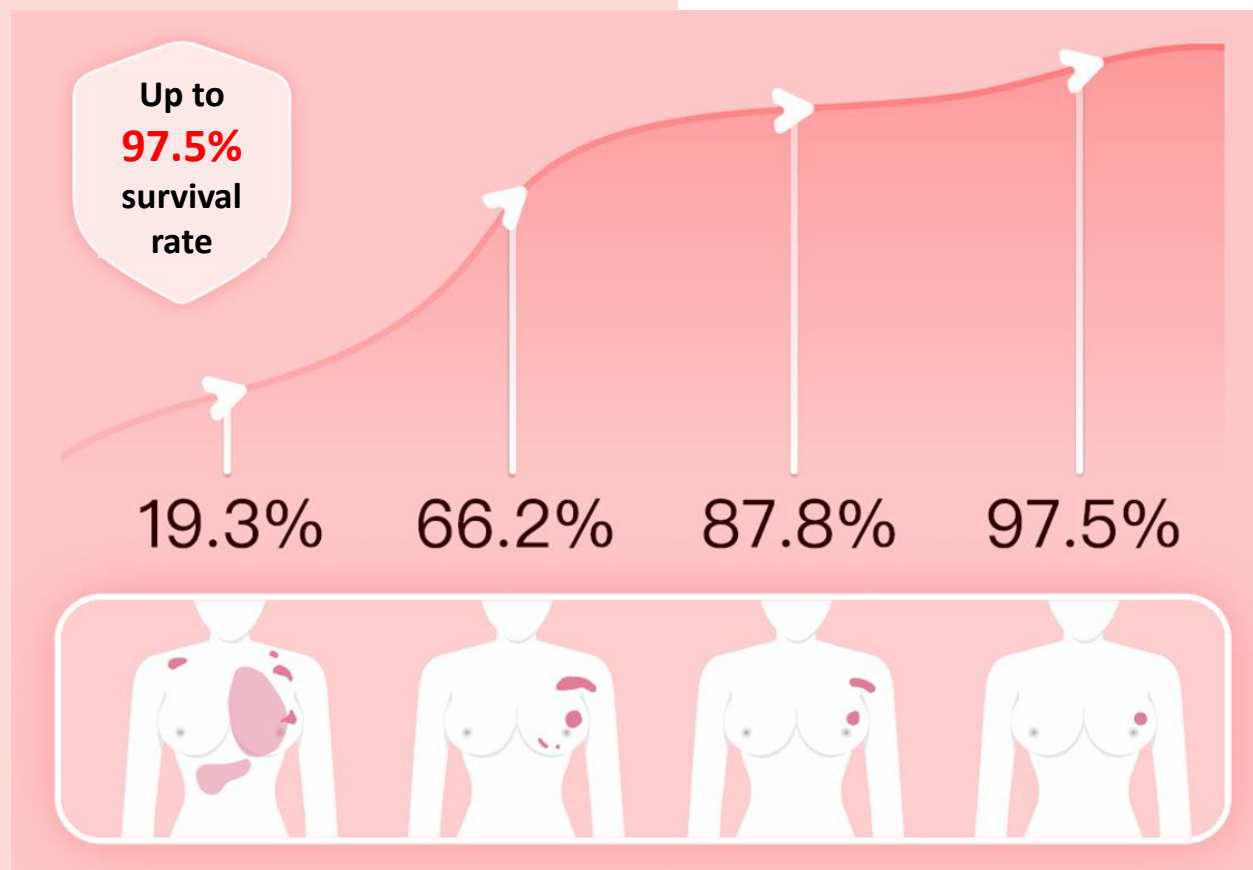
~82% of patients were already symptomatic when they are diagnosed, with most in middle and late-stage breast

~91% of breast disease were of invasive type when first spotted by self-detection by chance

Some aggressive malignant cells **double in size in 25 days**, Regular annual medical examinations cannot detect quickly enough, resulting in **over 82% of patients needed intensive treatment**, causing damages to the body and required long-term recurrence preventive therapy

Breast Disease

Why Early Detection



Over 2+ billion women worldwide are at risk of Major Breast Health Issues.

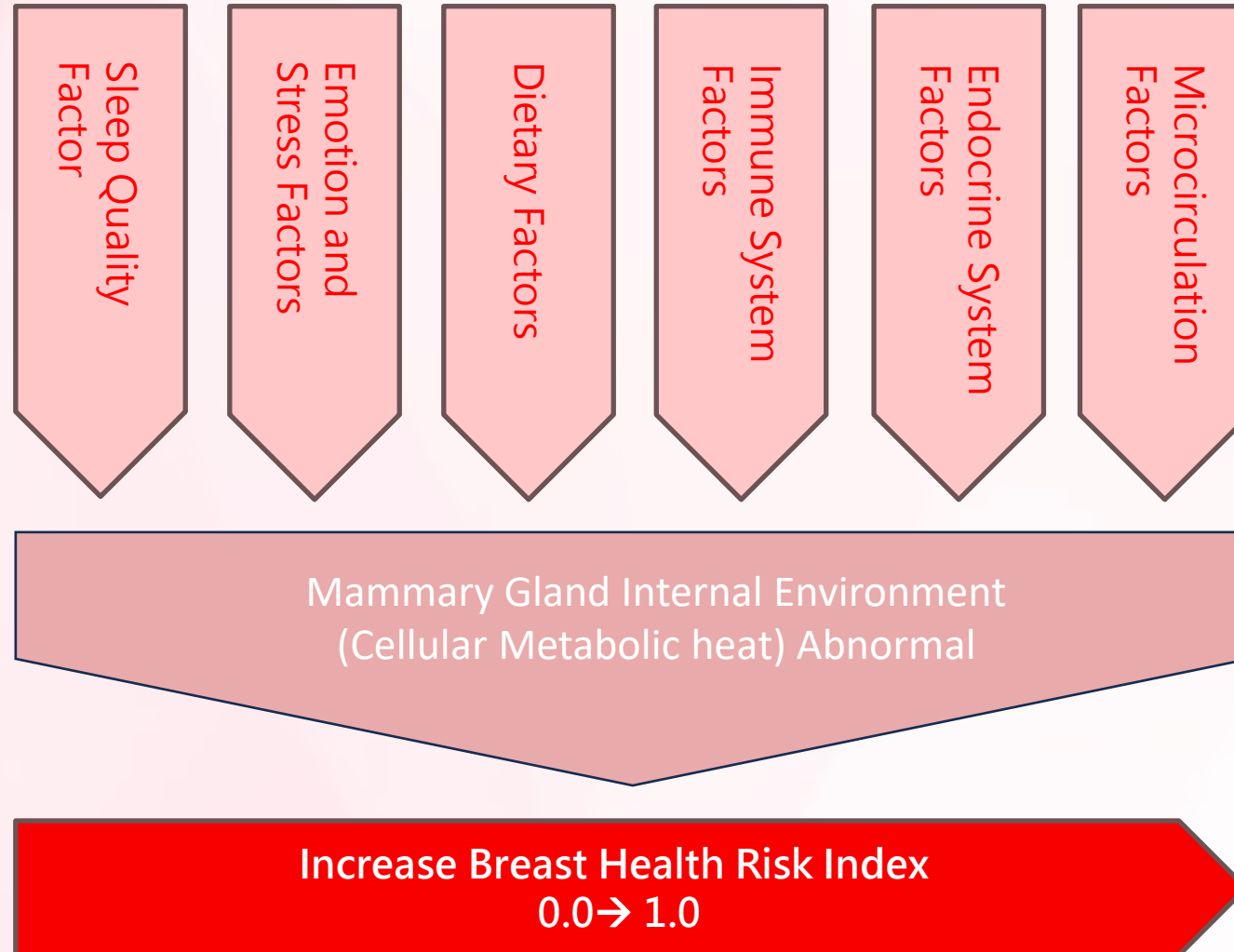
Early detection can improve breast severe disease survival rate up to 97.5%.

HOWEVER...

Breast Awareness or other screening technologies are proven unable to achieve early detection.

Breast Disease

Early Symptoms



Breast Disease

Early Symptoms

Most Common Breast Diseases			
	Breast Disease Types	Symptoms	Breast Cancer Risk
1	Breast Fat Necrosis	This is a benign lesion characterized by nodules of fatty deposits in the breast, often caused by accidental or surgical injury.	Fat necrosis does not increase breast cancer risk
2	Benign Breast Hyperplasia	This is one of the most common reasons. Due to changes in female hormone levels, breast cell proliferation and life extension lead to breast hyperplasia, and then the formation of nodules, some of which may be malignant.	Having atypical hyperplasia slightly increases breast cancer risk in some people
3	Breast Infection	This is a benign lesion. If a woman secretes a lot of milk during lactation and cannot expel the milk in time, bacterial infection or inflammatory stimulation may cause nodules in the breast. It is characterized by the formation of tender nodules in the breast, accompanied by nipple discharge, and is more common in lactating women.	Women with mastitis have higher risk of breast cancer
4	Fibrocystic Breast	This is a benign lesion characterized by the formation of multifocal nodules in the breast, the nodules vary in size and tough texture, and it is more common in women over the age of 35.	Women with fibrocystic breast and a family history of breast cancer have a slightly higher risk of breast cancer
5	Fibroadenoma	This is a benign tumor consisting of fibrous and glandular tissue, characterized by the formation of painless nodules in the breast, mostly round or oval, elastic, usually more common in young women under the age of 40 common. Fibroadenoma is a long-term risk factor for breast cancer.	Women with complex fibroadenomas, proliferative disorders, or a family history of breast cancer are at increased risk.
6	Breast Simple Cyst	It is generally benign and is characterized by the formation of fluid-filled cysts in the breast. The cysts are highly active and often appear before menstruation and subside after menstruation. They are more likely to occur in women over 30 years old or near menopause.	Both fibrosis and simple cysts will not increase breast cancer risk
7	Breast Complicated and Complex Cyst	Complex cysts, characterized by a mixture of fluid and solid components, and complex breast cysts, characterized by cysts with thick walls, thick septa, intracystic masses, or other discrete solid components.	For complex cysts, the possibility of cancer is less than 2%. Complex breast cysts, up to 20% more likely to become cancerous
8	Intraductal Papilloma	Usually benign, characterized by the formation of nodules under the areola, accompanied by painless bloody nipple fluid, and occurs in women over the age of 45.	A single papilloma does not increase the risk of breast cancer , however, multiple papillomas slightly increase breast cancer risk
9	Breast Cancer	Breast cancer is a malignant condition usually caused by the uncontrolled proliferation of breast cells and is characterized by the formation of irregularly shaped, ill-defined, firm nodules in the breast. Occurs in women who are perimenopausal or approaching menopause.	

Existing Screening technology

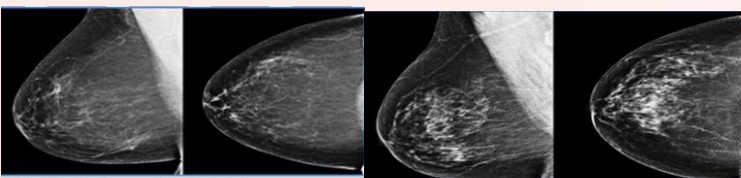
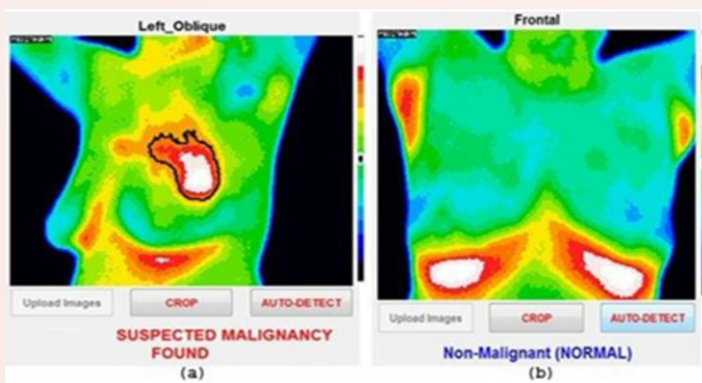


Figure 150 — The breasts are almost entirely fatty.

Figure 151 — There are scattered areas of fibroglandular density.

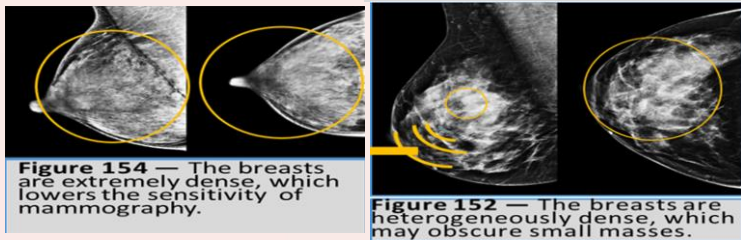


Figure 154 — The breasts are extremely dense, which lowers the sensitivity of mammography.

Figure 152 — The breasts are heterogeneously dense, which may obscure small masses.

- Only close to 3 million cells or structural changes larger than 1-2 mm in size may be detected, which is in the middle and late stages.
- Since the existing screening methods rely on image technology, it is necessary to judge symptoms visually through the experience of Radiologist.
- Asian women with dense breasts are more likely to get false negative results.
- Because mammograms are x-rays, they expose the breasts to radiation and should not be done frequently.

Early detection devices requirement

Annual
bodychecks
are
insufficient
to cover the
risk



Difficulties
of Home-
based
Cancer Risk
Warning

- ❖ In the past, Home-based breasts self-examinations are conducted by touching or observing changes in size, shape or appearance of breasts, which lacks accuracy and sensitivity



**WE NEED A HOME-BASED SCREENING
DEVICE FOR EARLY DETECTION OF
BREAST SEVERE DISEASE**



Our Solution



Breast Guardian

Breast Guardian is the world's first breast health monitoring platform that successfully combines IoT device, cloud algorithm and big data technology. It uses the bio-rhythm heat pattern to predict breast health and assess related health risks, allowing you to conduct self and scientific breast health monitoring every month and build your own lifelong breast health database.



Our Solution

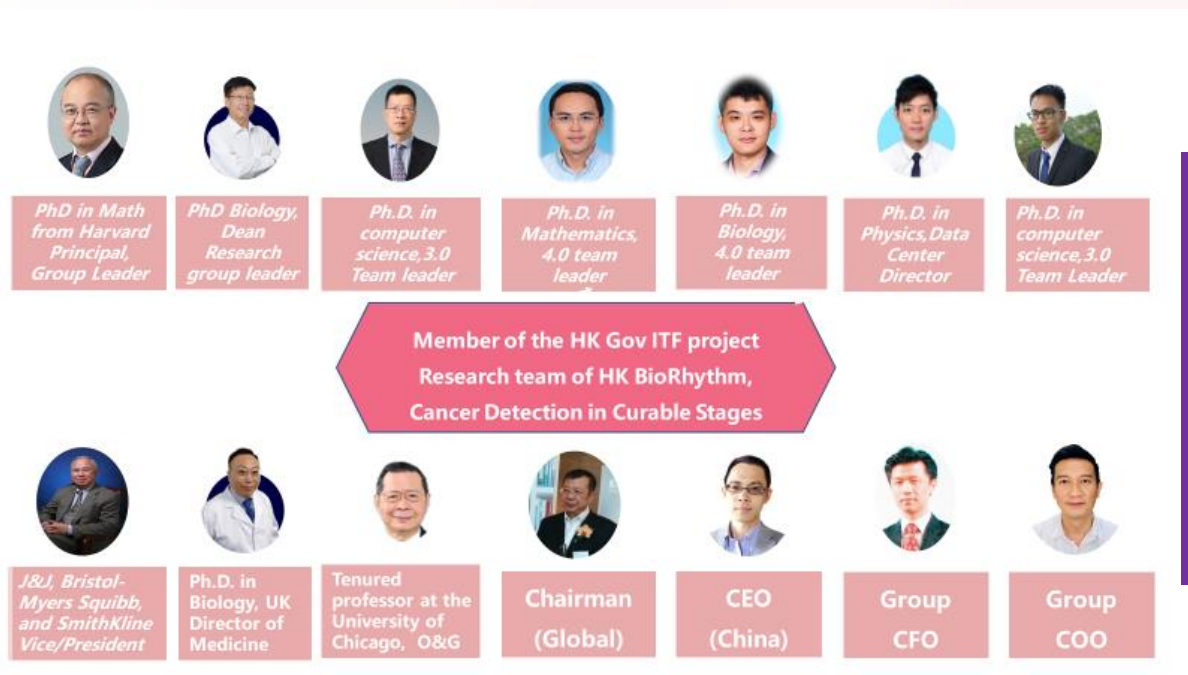
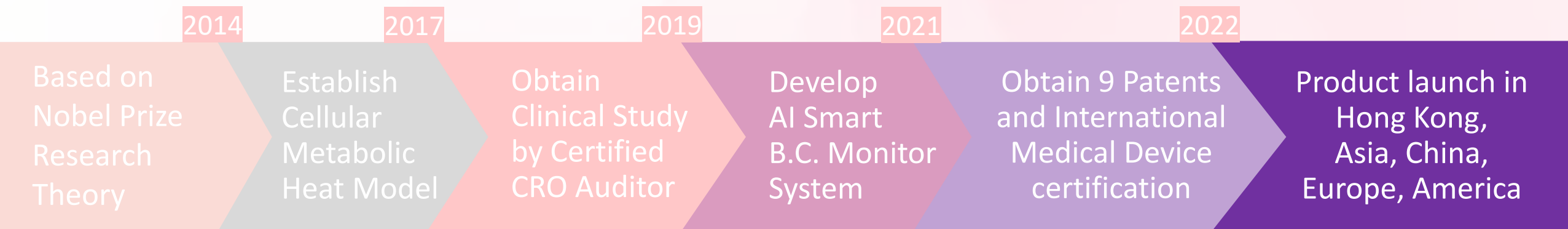


Breast Guardian

- ✓ Based on Nobel Prize-winning research theory
- ✓ Clinically Proven Accuracy Rate up to 85.9%
- ✓ Easy-to-Use, Non-invasive, No Pain, No radiation
- ✓ Suitable for women over 20 years old, especially with breast diseases
- ✓ Class II Medical Device Grade



Company Milestones



International Renowned PhD R&D Team
Eight Years of Research and Development

Uniqueness: Obtained 9 patent certifications, World's first breast health detection system

Accuracy: Accuracy rate 85.9% proven by Certified Medical Clinical Research Institute

Reliability: Certified by International Authority. Class II Medical Device Grade

Recognition: Selected and Used by Hong Kong medical channels (including medical examination centers, O&G/Oncology doctors)

Our Science behind



Engineered Scientifically with Nobel-Prize-Awarded Theories: *Recognize Cancerous Local Heat Pattern*

The Warburg Effect

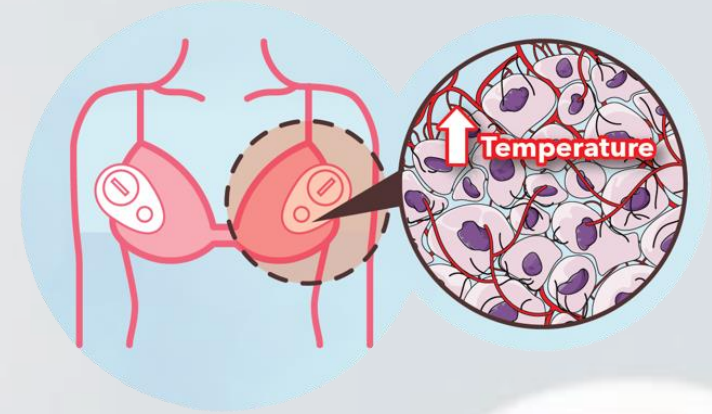
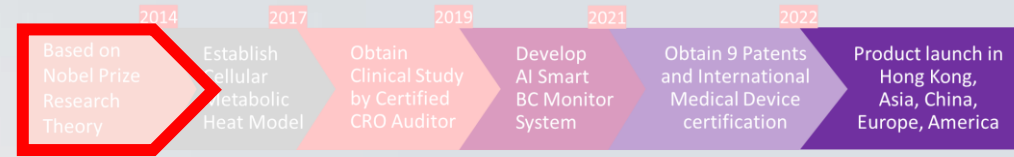
(Otto Heinrich Warburg, 1931 Nobel Prize winner
Cancer cells mainly use aerobic glycolysis and have a
higher metabolic rate than normal cells, hence
generating **more heat energy**)

Angiogenesis

(Judah Folkman, a pioneer of
angiogenesis research)
The increased and constant blood flow
increases tumors' **local temperature**

Cancerous Local Metabolic Heat Pattern

The increase in regional temperature becomes an
independent heat pattern



Cellular Metabolic Heat Model

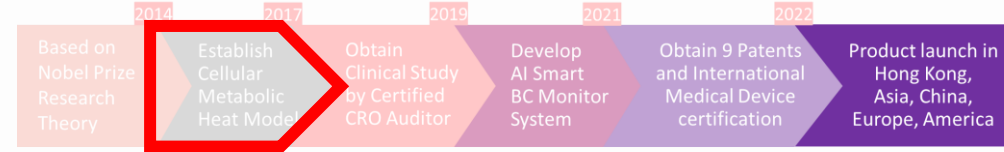
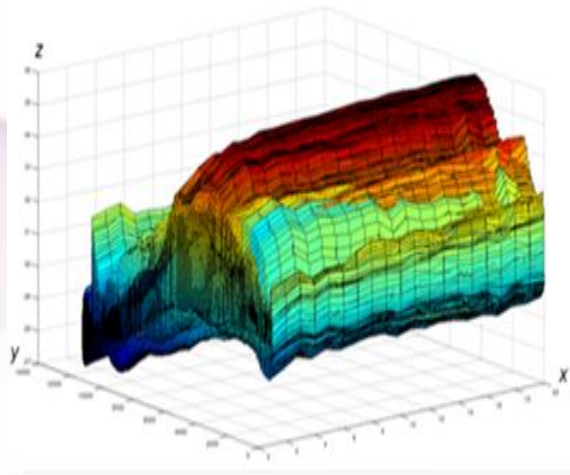
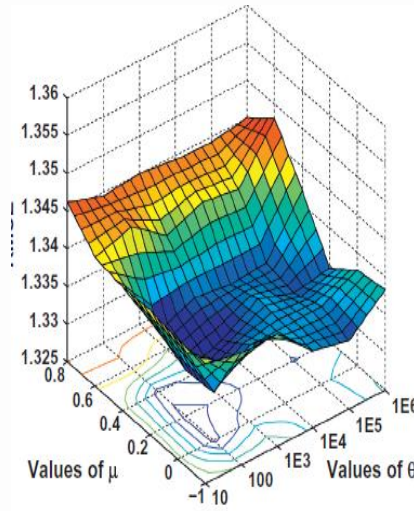


Image feature analysis methods-multi-dimensional data visualization methods



Relationship between blood perfusion rate and metabolic heat production



The relationship amongst blood perfusion rate, metabolic heat production and water molecular dissipation

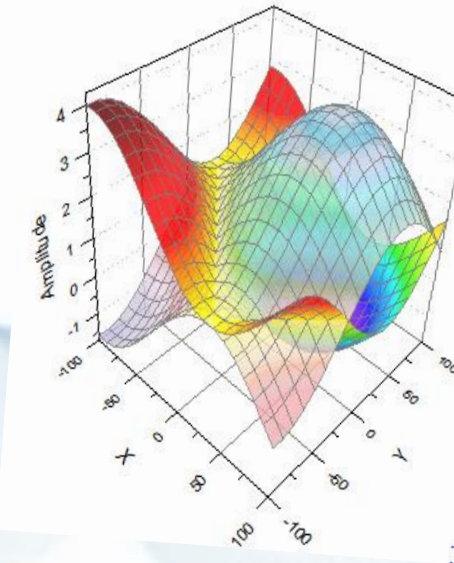
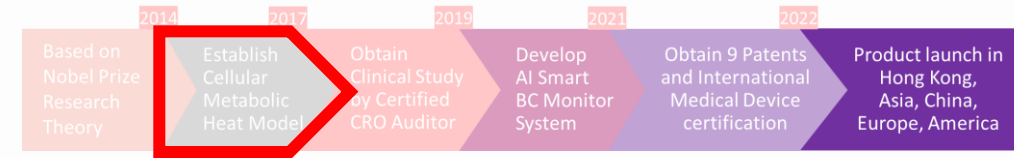


Figure 4: Single temp. point area vector representation

Cellular Metabolic Heat Model



Express cells (mitochondrial wear & tear) tissue metabolic rhythm **dissipation structure**

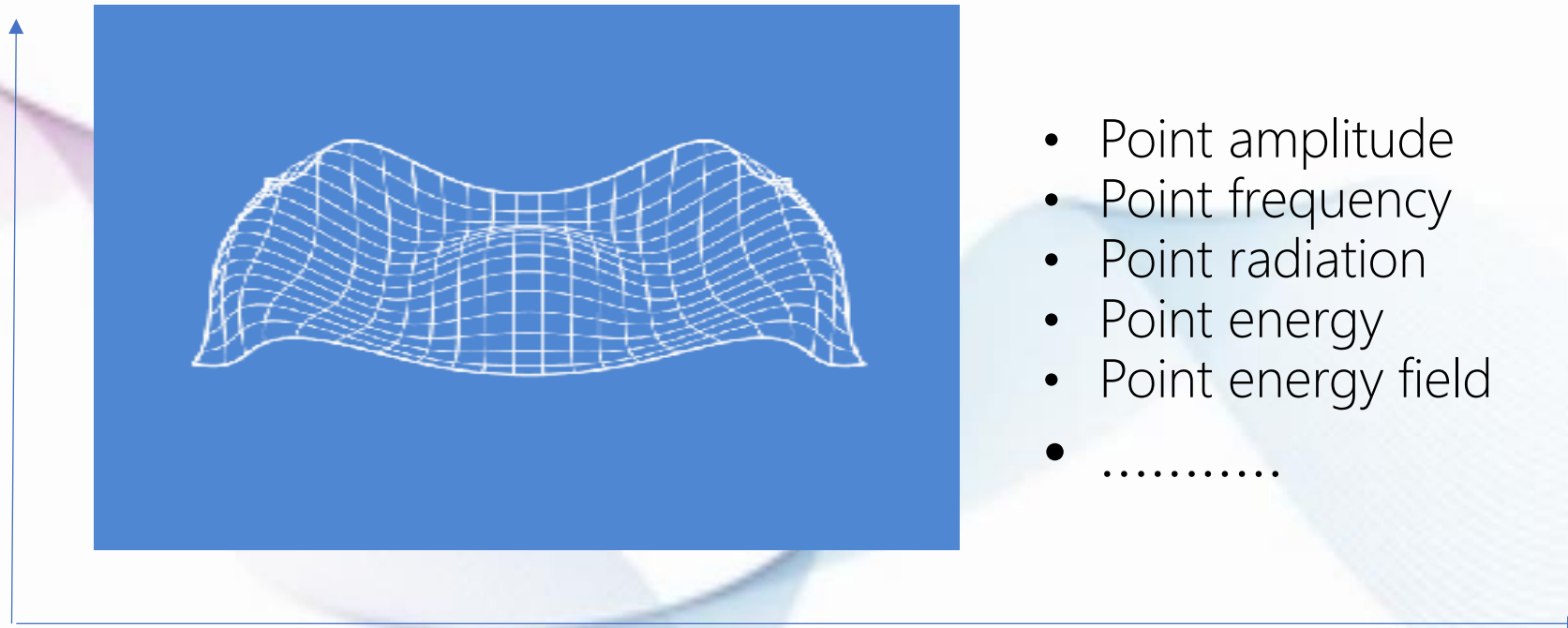
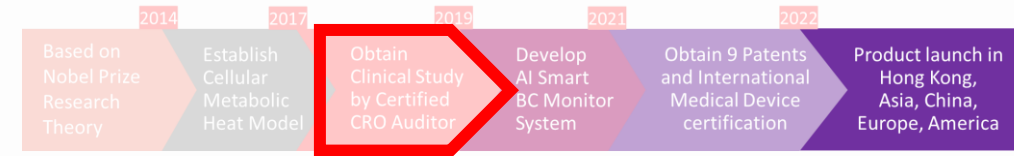


Figure 5: Single temp. point dissipation structure expression (temperature field)

Our Clinical Study



Designed for home-based, high-frequency tests

For yearly routine checks in hospitals or medical centers

Our System ⁽¹⁾		Ultrasound ⁽²⁾	X Ray ^(3,4)	PET-CT ⁽⁷⁾	MRI ^(4,5,6)
Sensitivity	97.7%	80.1%	85.7% ⁽³⁾	77-90%	97.5% ⁽⁴⁾
Specificity	76.6%	88.4%	88.8% ⁽³⁾	69-80%	83.8% ⁽⁴⁾
False Positive	23.4%	11.6%	11.2% ⁽³⁾	20-31%	16.2% ⁽⁴⁾
False Negative	2.3%	19.9%	14.3% ⁽³⁾	10-23%	2.5% ⁽⁴⁾
Positive Predictive Value	76.8%	86.0%	76.0% ⁽⁴⁾	97%	71.4% ⁽⁶⁾
Negative Predictive Value	97.7%	80.0%	99.0% ⁽⁴⁾	<60%	99% ⁽⁵⁾
Accuracy	85.9%	46.9%	63.5% ⁽⁴⁾	83-86%	88-96% ⁽⁴⁾

Above clinical study report conducted by
TigerMED (Contract Research Organization)

Ref. No.: RXSC_201500C

Breast Biorhythm Monitoring System are highly
comparable with traditional diagnostic methods

Our Data Tech behind



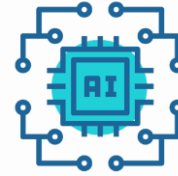
Cloud-based Bio-marker Library

All biological data (“Bio-Markers”) collected through the Proprietary AI Analytics System will be stored in our Bio-Marker Library (and encrypted with blockchain technology). As data volume expands, our researchers apply big-data analysis and machine learning to refine and enhance the depth and breadth of the Proprietary Analytics System, making it an ever-improving tool for cancer risk assessment.



Personalized mobile application

Channeling data between data-collectors and our Big Data Analytics System, offering seamless user experience, and on its way to becoming the only personal health “Super-APP” on the market



Proprietary Big Data Analytics System

Developed by our academic experts and medical professionals, and proven by clinical trials, the system offers reliable data-monitoring and analyzing features, to conduct time-series analysis (personal level) and cross-comparatives (community level), and sending users’ risk-level categorizations and warning well in advance

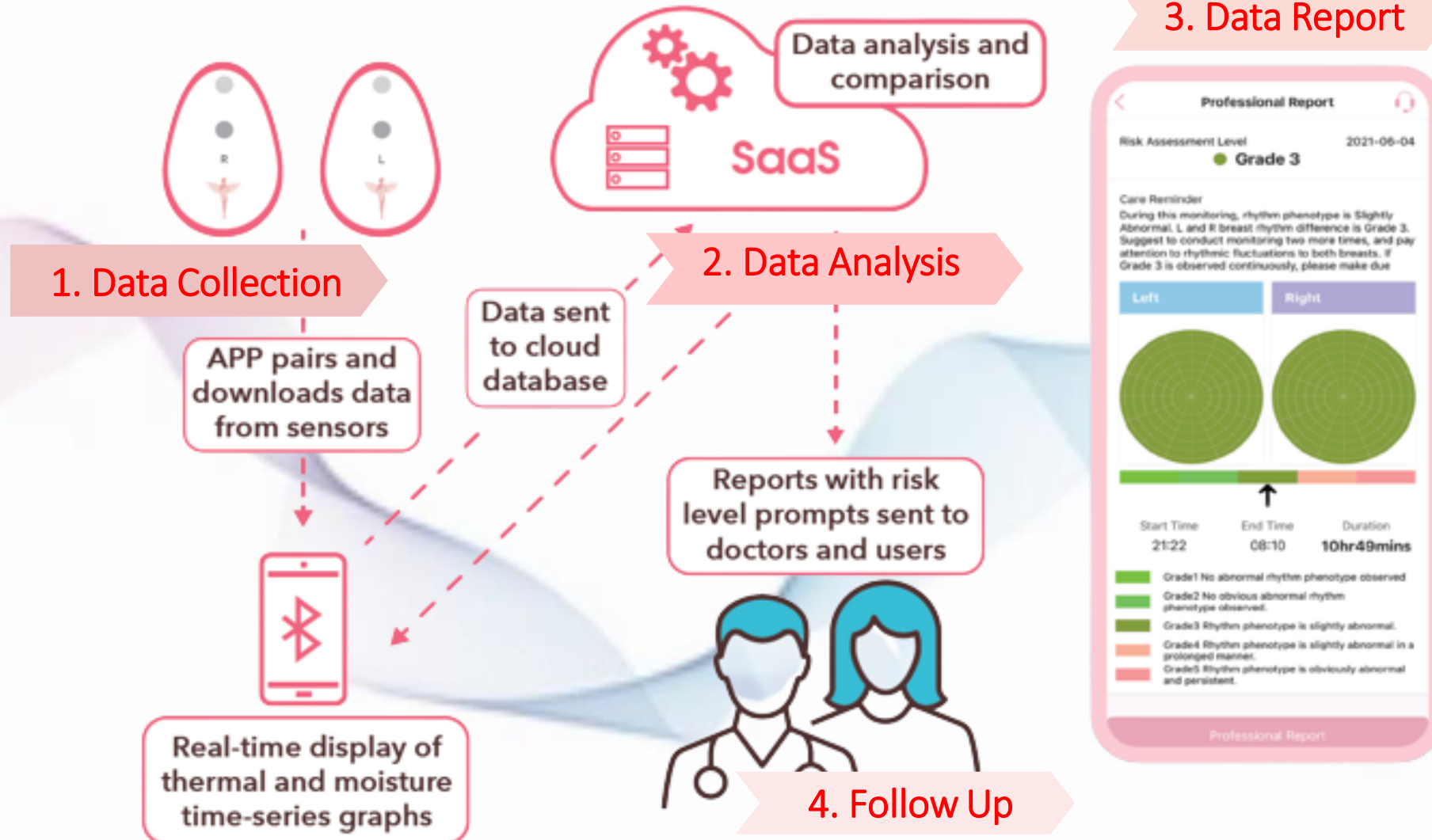
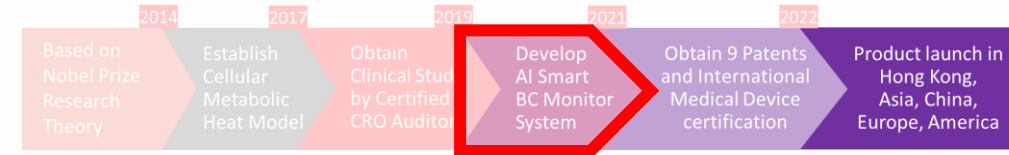


Advanced IoT data-collectors

Record micro-signs of users, including contact temperature, ambient heat release temperature, humidity, and their subtle variations



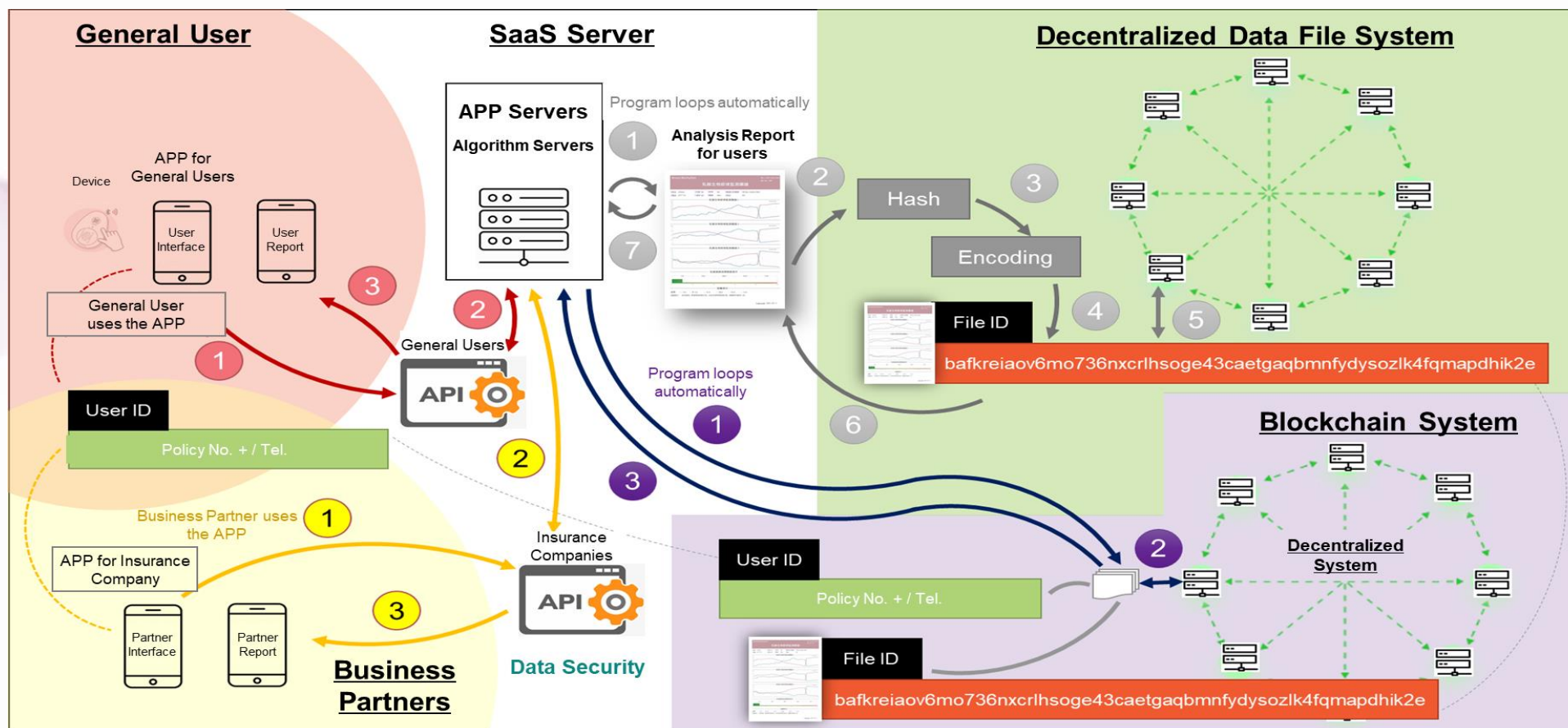
Our Data Tech behind



Our Data Tech behind

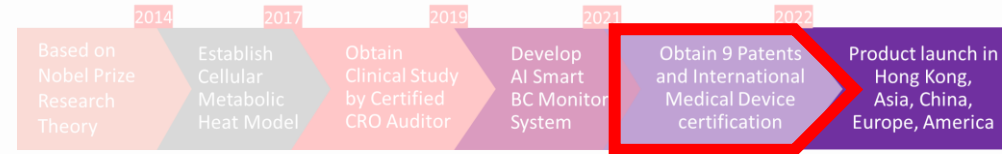


Closed-loop data security management



Early screening enabled by Big Data algorithm

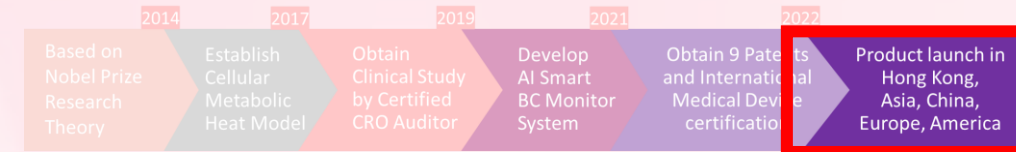
Our Patent and Cert



- 9 core patents
- NMPA Class II Medical Device Certification
- CRO Clinical Study Report
- CE European electronic product safety certification

Our Product Spec

Components inside the package	<ul style="list-style-type: none"> • 1 pair of sensors • 1 piece of bra / 28 pcs of Plasters • 2 coin cell battery
Report	12 Reports valid for 12 Months
Report type	Professional report (risk grade 1-5)
Recommended use	<p>Monthly monitoring:</p> <p>For the 1st month, wear device at least 3 times</p> <p>For the subsequent months, wear device once a month</p>
Certification	<p>1. CE : Directive 2014/30/EU EMC</p> <p>2. CE : Directive 2014/53/EU RED</p> <p>3. NMPA : i. 20222070784; ii. 20222210785</p>



Contact sensor

Measures breast skin temperature



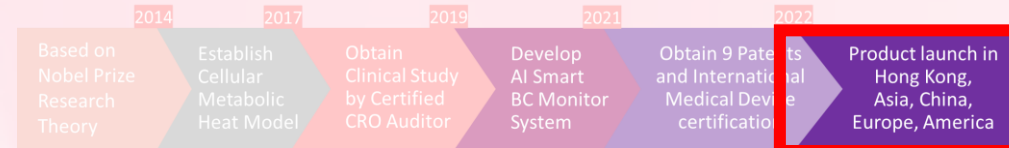
hours of valid data collected

Non-contact smart sensor

Measures temperature and humidity of local tissues



Our System flow



1. Data Collection



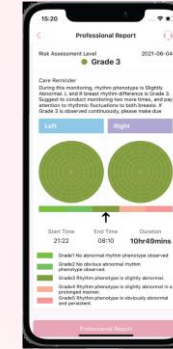
- Users wear the device while sleeping (capture 6 hours valid data each time)
- Smart sensors continuously collect and transmit the data consist of temperature and humidity of the breast via Bluetooth to mobile phone

2. Data Analysis



- Users' mobile phone sends data to the cloud database
- After preliminary processing of the data various analysis and comparison are performed to generate a test report.

3. Data Report



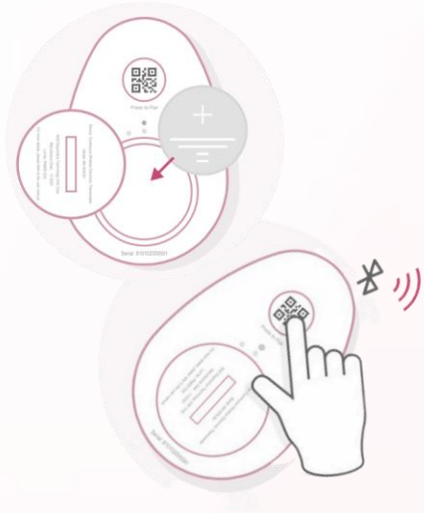
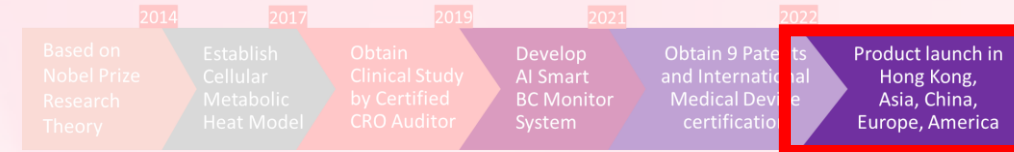
- Reports are sent to **users / doctors** to be displayed in APP and provide risk level prompts

4. Follow Up

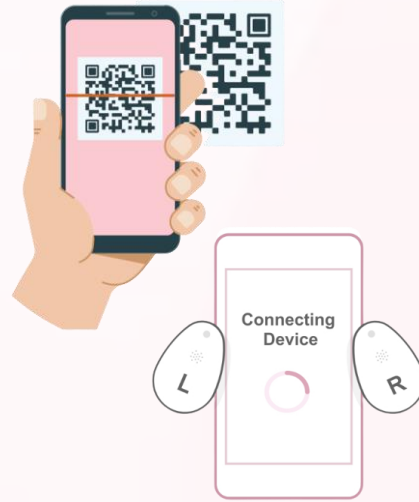


- (Consumer version) Our CS team to follow up with customer via IM/hotline
- (Doctor version) Doctors portal will be available for Doctor to follow up for their patients

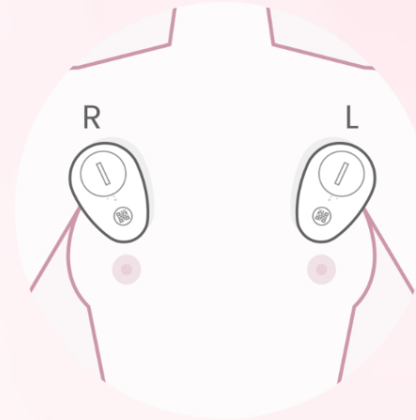
How To Use



Step 1: Insert the battery cell and press and hold the switch until the blue light is on



Step 2: Scan the QR Code on the box, download the Breast Guardian and connect the device via Bluetooth to the APP.

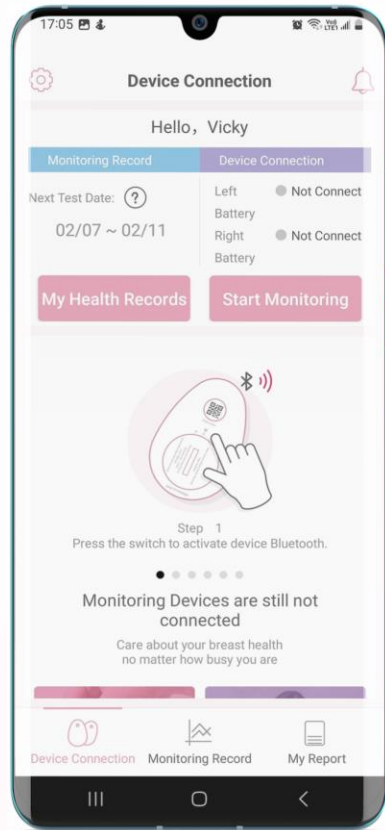


Step 3 : Make sure that the device with the letter L/R is pasted with our plasters on the left/right breast, and the silver detection point should be aligned with the left/right nipple respectively.

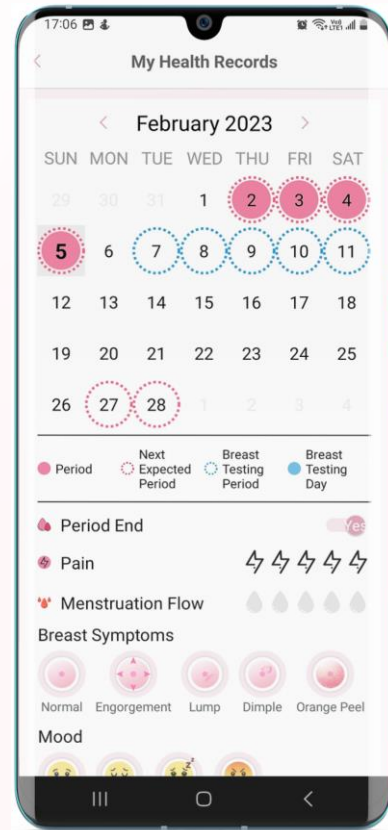


Step 4 : Two daily screening to generate monthly report. The Report will show the grading of the health risk.

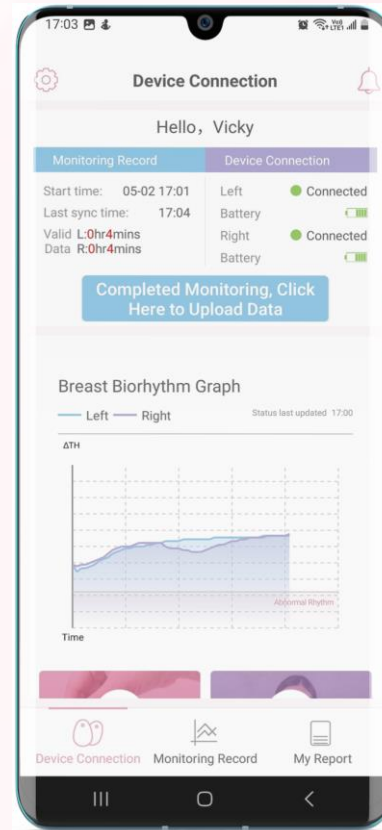
“8 hrs Test” APP Flow



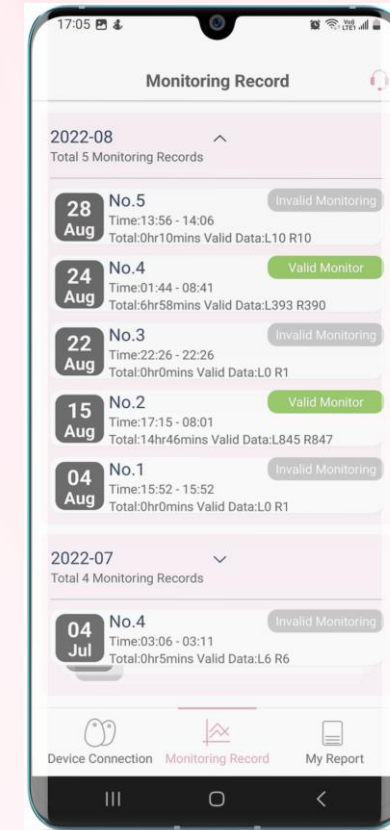
First time
Device Setup



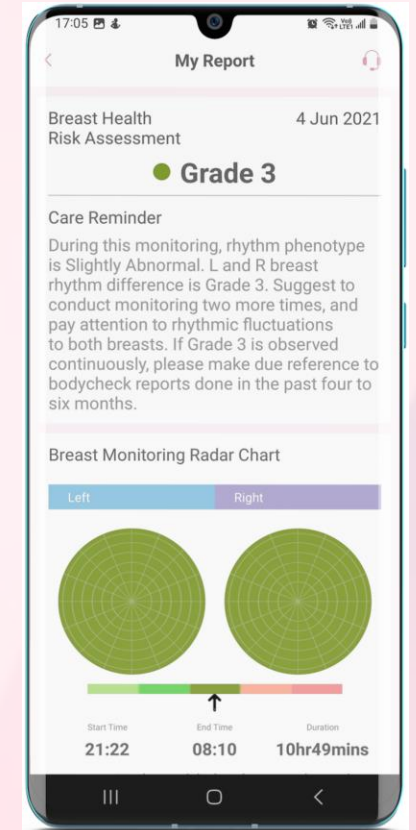
Screening
schedule
Setup



Device
connection

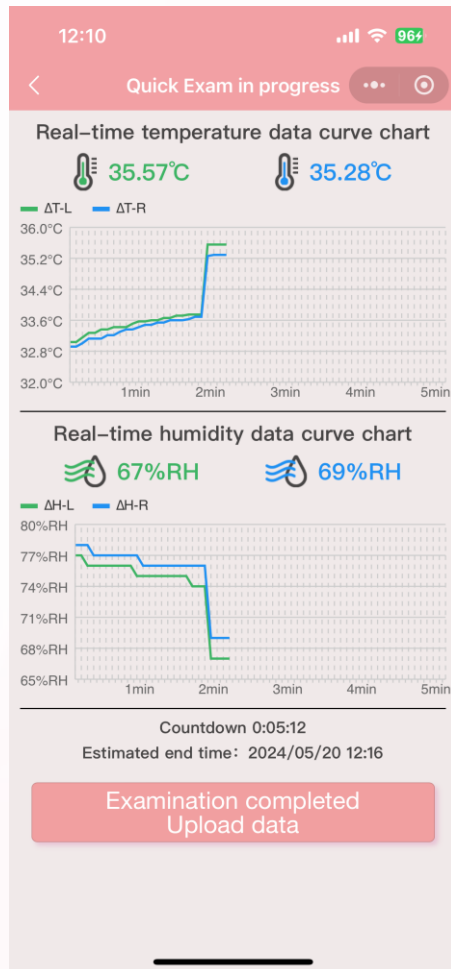


My Monthly
Report Record

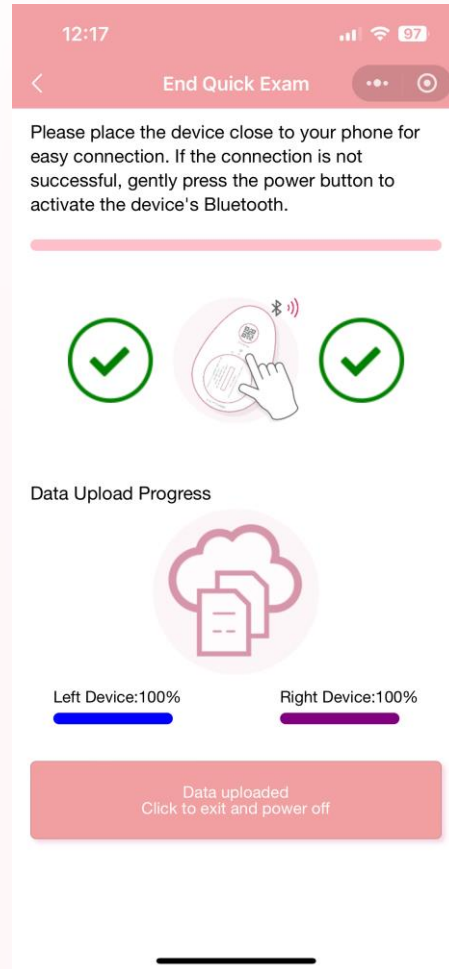


Report detail

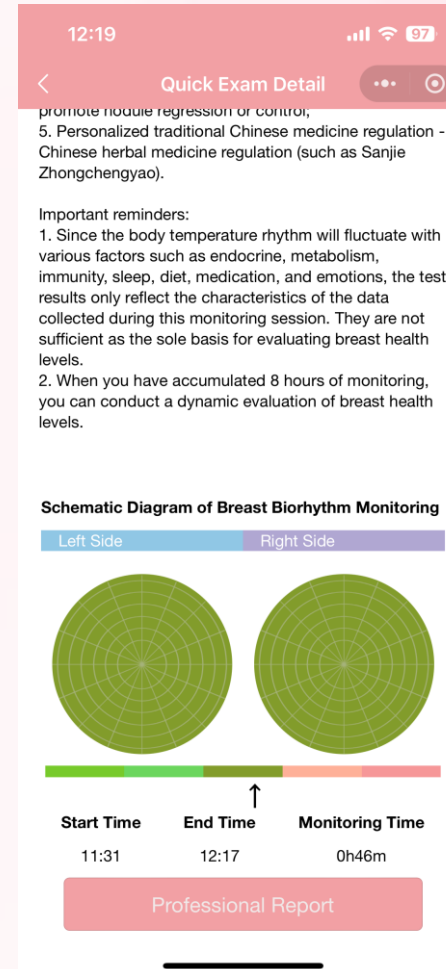
“1 hr Test” APP Flow



Real Time
Report



Upload
data

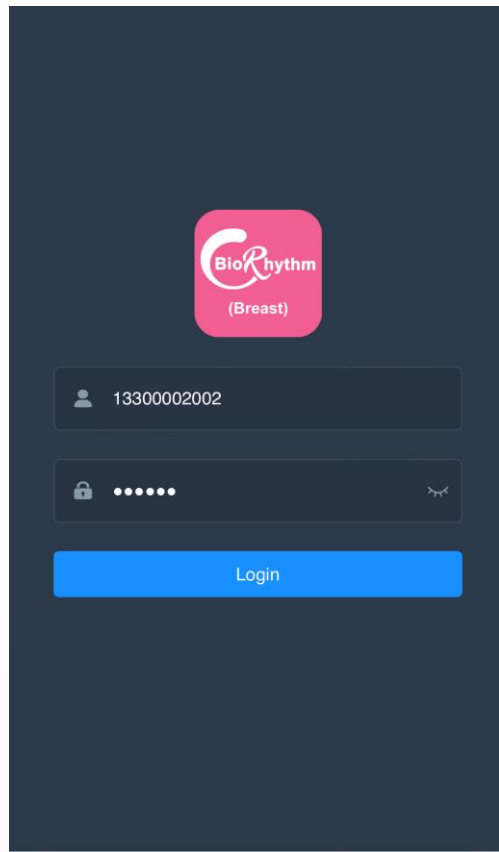


View
Report

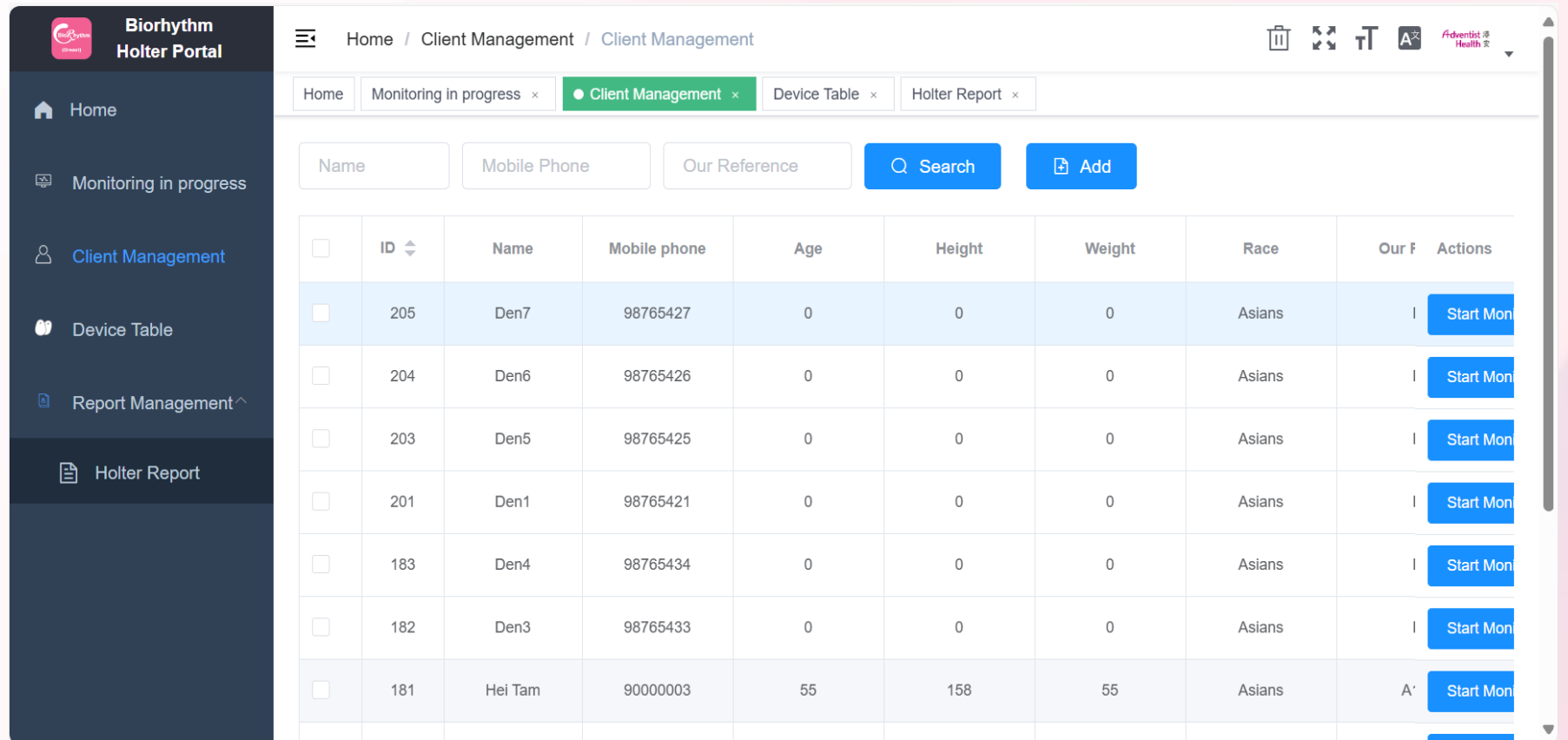


Send to
User

“Holter Portal” Web Flow (Enterprise Version)

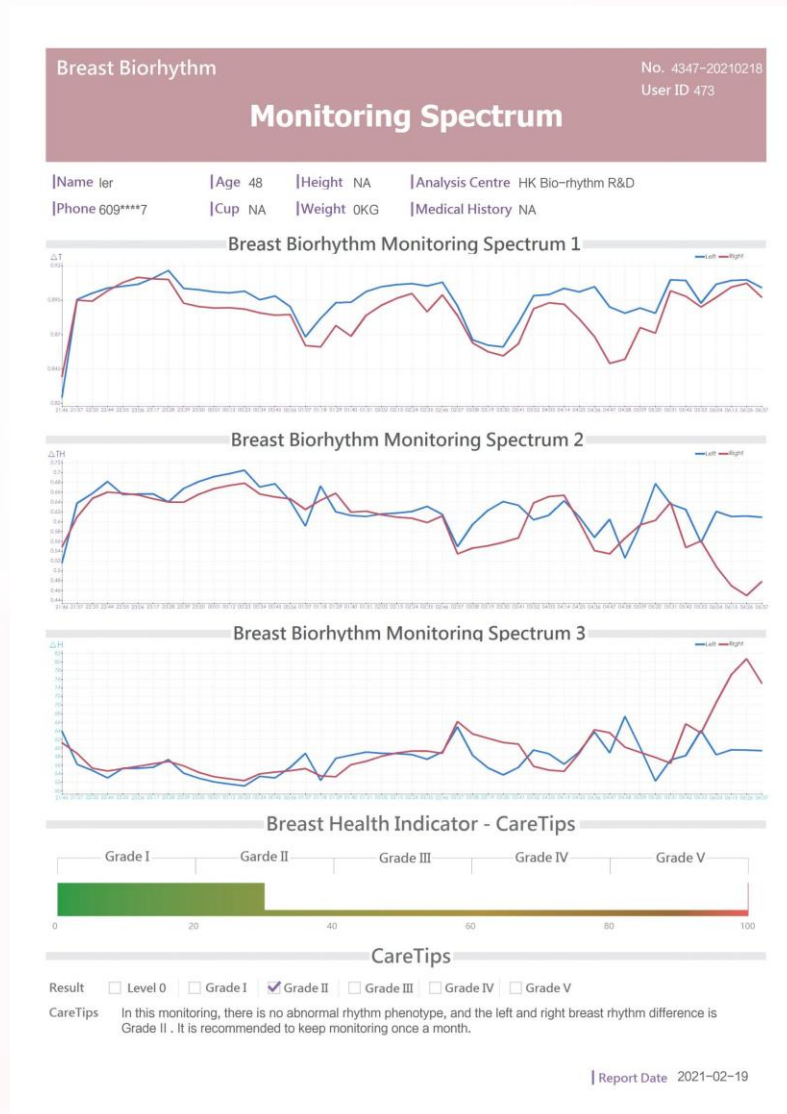


Login to Portal



Confidential

“8 Hrs Home Use” APP Report (B2C)



Grade1	There was no abnormal rhythm phenotype fluctuation. It is recommended to monitor once a month.
Grade 2	There was no obvious abnormality in the fluctuation of the rhythm phenotype. It is recommended to insist on monitoring at least once a month and pay attention to the changes in the rhythm of the left and right breasts.
Grade 3	The rhythm phenotype was slightly abnormal. It is recommended to monitor it twice to pay attention to the fluctuation of the rhythm of the left and right breasts. If it is still grade 3 after 2 consecutive monitorings according to the correct method, you need to refer to the physical examination report within 4-6 months.
Grade 4	The rhythm phenotype was mildly abnormal for a long time. It is recommended to continue to monitor twice this month, each monitoring for 24 hours. If it is grade 4 for two consecutive times, it is recommended to find a professional doctor for examination within one month.
Grade 5	The abnormal rhythm phenotype was more obvious and persistent. It is recommended to monitor 3 times in a month, and each monitoring lasts for 24 hours. If it is grade 5 for three consecutive times, it is recommended to go to the hospital for examination immediately.

Our Company

HK Bio-Rhythm R&D Limited Company, established in 2019, is a leading life technology company that engages in the research and development of a series of home health products using IoT, artificial intelligence and big data technology.

Our team consists of members from various research institutions and ex-employees from multinational pharmaceutical companies such as Novartis, Johnson & Johnson, Sino-US SmithKline and other famous international medical institutions.

Our research work is based on the innovative application of "Cellular Thermodynamics" and "Modern Biorhythm" producing a series of high-quality, wearable healthcare equipment and intelligent monitoring systems.



*PhD in Math
from Harvard
Principal,
Group Leader*



*PhD Biology,
Dean
Research
group leader*



*Ph.D. in
computer
science, 3.0
Team leader*



*Ph.D. in
Mathematics,
4.0 team
leader*



*Ph.D. in
Biology,
4.0 team
leader*



*Ph.D. in
Physics, Data
Center
Director*



*Ph.D. in
computer
science, 3.0
Team Leader*

Member of the HK Gov ITF project
Research team of HK BioRhythm,
Cancer Detection in Curable Stages



*J&J, Bristol-
Myers Squibb,
and SmithKline
Vice/President*



**Ph.D. in
Biology, UK
Director of
Medicine**



**Tenured
professor at the
University of
Chicago, O&G**



**Chairman
(Global)**



**CEO
(China)**



**Group
CFO**



**Group
COO**



Thank You!