

# **Advances in health technology**

Today's world is  
consumer centric  
like never before



**The metric that kept  
the healthcare industry  
moving forward, has  
changed**

**because so has the  
healthcare consumer**



# **Yesterday's patient is today's healthcare consumer**

In the last decade healthcare has moved toward customized, individualized treatment.

**And the healthcare consumer is getting demanding.**

**Faster, better and more holistic demand at several delivery points of healthcare.**

**AND TECHNOLOGY IS AT THIS CONSUMER'S SERVICE**

# **Technology permeates every dimension**

**Assessment and monitoring of patients**

**Access to vital information**

**Enhancing communication**

**Improving networking**

**Coping with diseases**

**As today's students and future healthcare influencers you will be a vital part of the creation and consumption of technology.**

**YOU SHOULD BE EXCITED**

**PRODUCTS**



## Reducing cardiac emergencies

Mobmon an- Ultra-portable heart monitor that turns an Android mobile or tablet into a 12-lead ECG recorder and pulse oximeter.

Weighing less than 2kg

Mobmon can share a Live ECG (real-time) feed anywhere in the world using the mobile's data connection (Wi-Fi, 2G, or 3G). It can also share via Email, WhatsApp, web browser and more.

Reducing crucial delays in treatment that could be life threatening.



# WEARABLES & DEVICES

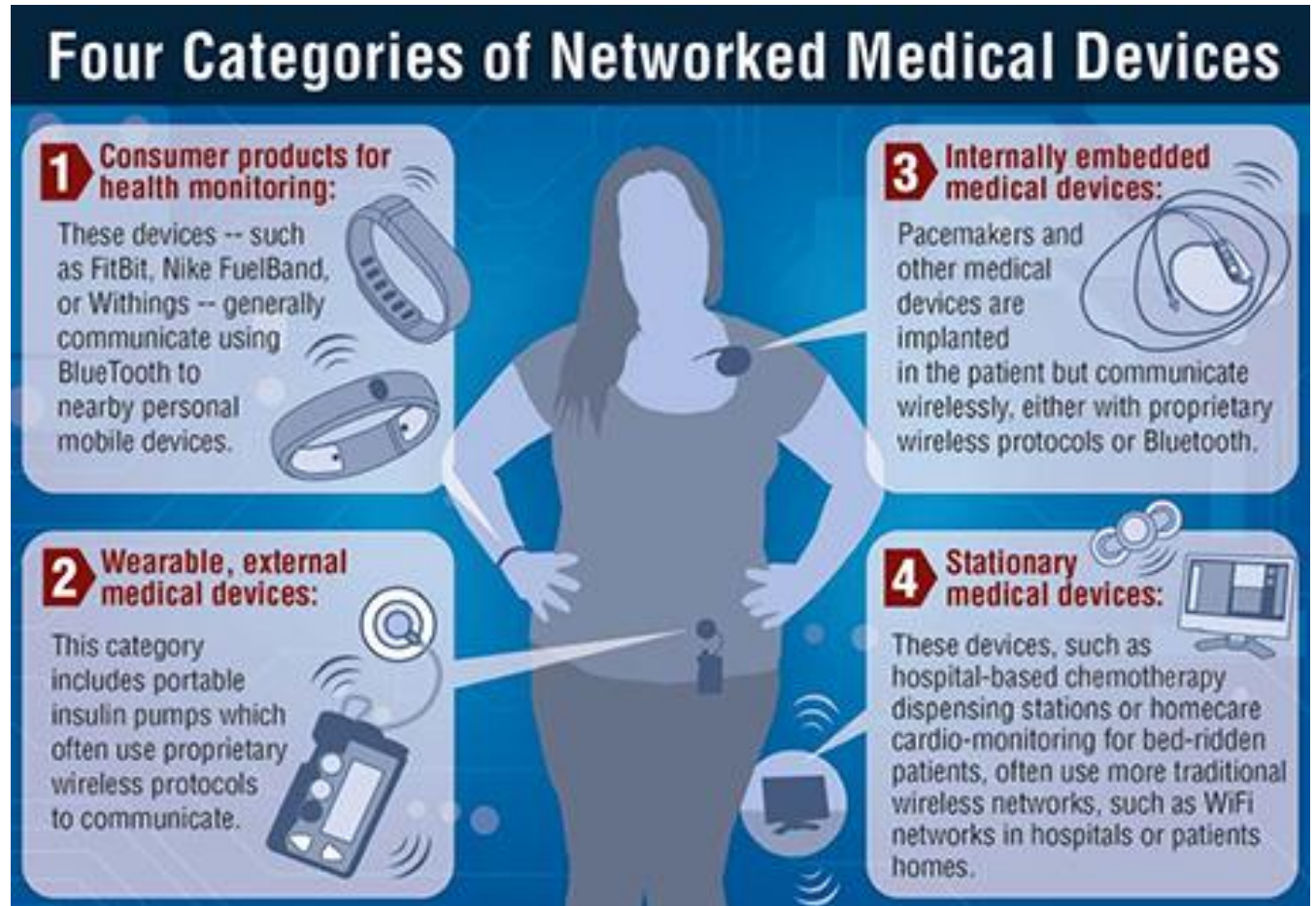
## Networked Medical Devices

From devices that can do early detection of lifestyle ailments

Dispensers that can help manage medication

wearables that can help keep a track of your vitals,

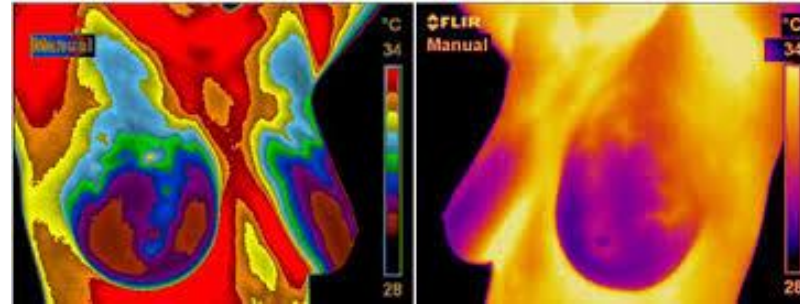
Medical equipments with in-built technologies like IoT, AI, etc are solving complex global problems.



## Fight Breast Cancer

Mammography works only for women over 40. There has been a prevalence of breast cancer among young women, where Nirmai is useful. Artificial Intelligence for pain-free breast cancer screening. Nirmai's screening device can detect tumours much smaller than what a clinical exam can catch. Machine learning and big data analytics with thermography images develop reliable and low-cost diagnostic methods.

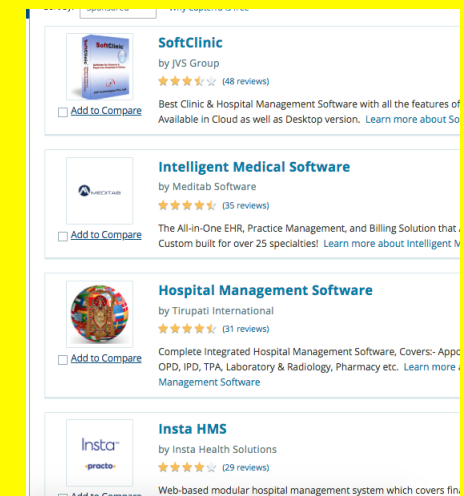
iTBra, developed by [Cyrca Health](#), uses a wearable to change the game of early detection. The dual breast patches are worn and can monitor circadian metabolic changes in heat



**EFFICIENCY**

## Smarter medical reports

From collecting samples, managing patient records, diagnosing them and generating reports, to billing and inventory; several options are available today that intervene at each step, making the process smarter and more efficient.

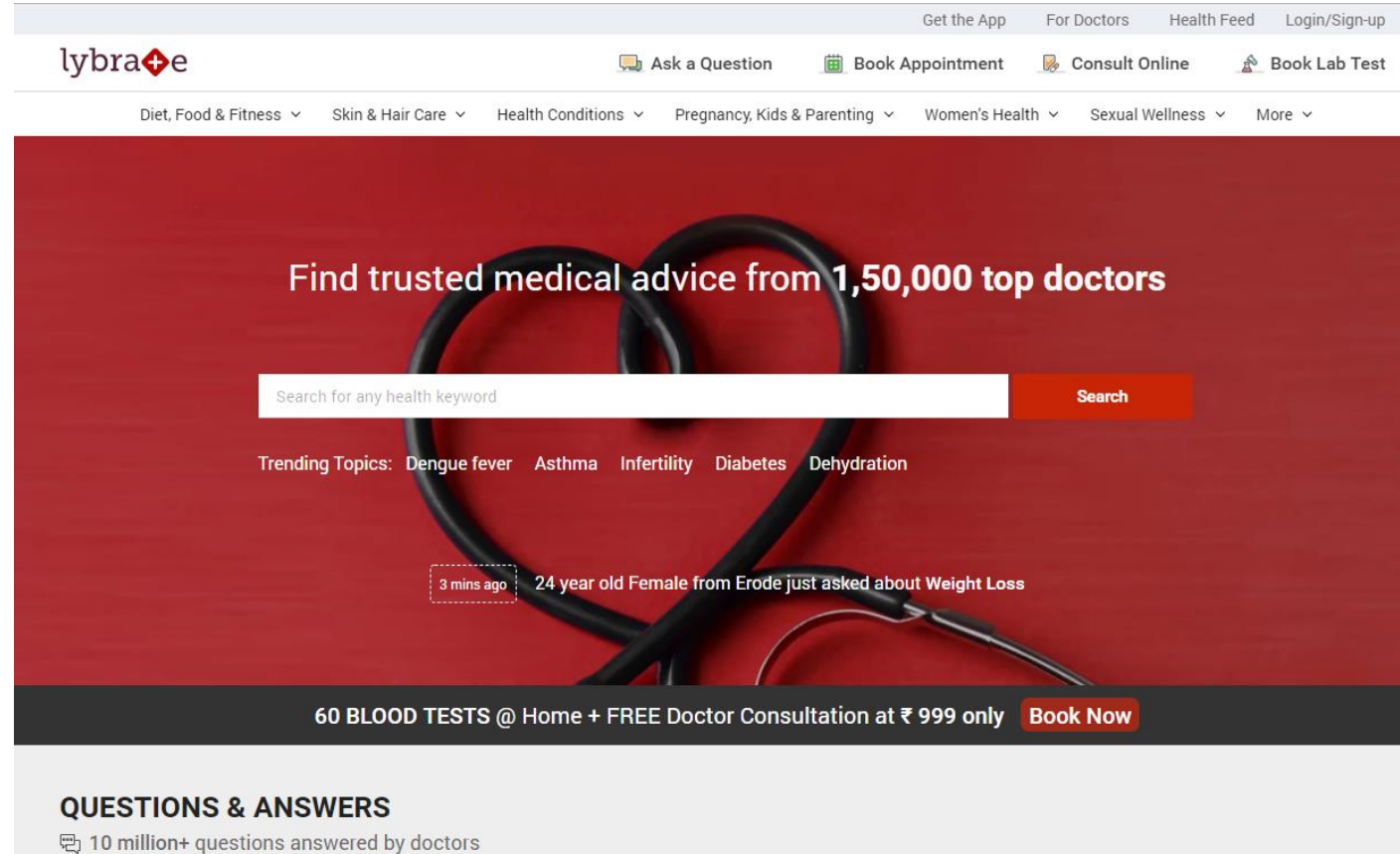


**CONSULTATION, APPOINTMENTS,  
SECOND OPINIONS**



## Instant advice from doctors

Lybrate helps patients communicate with a network of doctors, while keeping their anonymity intact. Lybrate has over 1,00,000 + doctors across different specialization connected with its service.



The screenshot shows the Lybrate website homepage. At the top, there is a navigation bar with links for 'Get the App', 'For Doctors', 'Health Feed', and 'Login/Sign-up'. Below this is the Lybrate logo and a row of service links: 'Ask a Question', 'Book Appointment', 'Consult Online', and 'Book Lab Test'. A secondary navigation bar lists various medical categories with dropdown arrows: 'Diet, Food & Fitness', 'Skin & Hair Care', 'Health Conditions', 'Pregnancy, Kids & Parenting', 'Women's Health', 'Sexual Wellness', and 'More'. The main content area has a red background with a stethoscope graphic. It features the headline 'Find trusted medical advice from 1,50,000 top doctors'. Below the headline is a search bar with the placeholder text 'Search for any health keyword' and an orange 'Search' button. Under the search bar, there are 'Trending Topics' listed: 'Dengue fever', 'Asthma', 'Infertility', 'Diabetes', and 'Dehydration'. A recent question is displayed: '3 mins ago 24 year old Female from Erode just asked about Weight Loss'. At the bottom of the red section, a dark grey banner promotes '60 BLOOD TESTS @ Home + FREE Doctor Consultation at ₹ 999 only' with a 'Book Now' button. The footer section is light grey and contains the text 'QUESTIONS & ANSWERS' followed by '10 million+ questions answered by doctors'.

lybrate

Get the App For Doctors Health Feed Login/Sign-up

Ask a Question Book Appointment Consult Online Book Lab Test

Diet, Food & Fitness Skin & Hair Care Health Conditions Pregnancy, Kids & Parenting Women's Health Sexual Wellness More

Find trusted medical advice from 1,50,000 top doctors

Search for any health keyword Search

Trending Topics: Dengue fever Asthma Infertility Diabetes Dehydration

3 mins ago 24 year old Female from Erode just asked about Weight Loss

60 BLOOD TESTS @ Home + FREE Doctor Consultation at ₹ 999 only Book Now

QUESTIONS & ANSWERS

10 million+ questions answered by doctors



## Appointments, health records

One-stop destination for appointments, calendar, consultations, health records, insurance, and ordering medicines online.

Connecting Several Indian cities, Singapore, Indonesia, the Philippines, and Brazil.

Based on online sources Practo currently caters to 25 million patients every year.

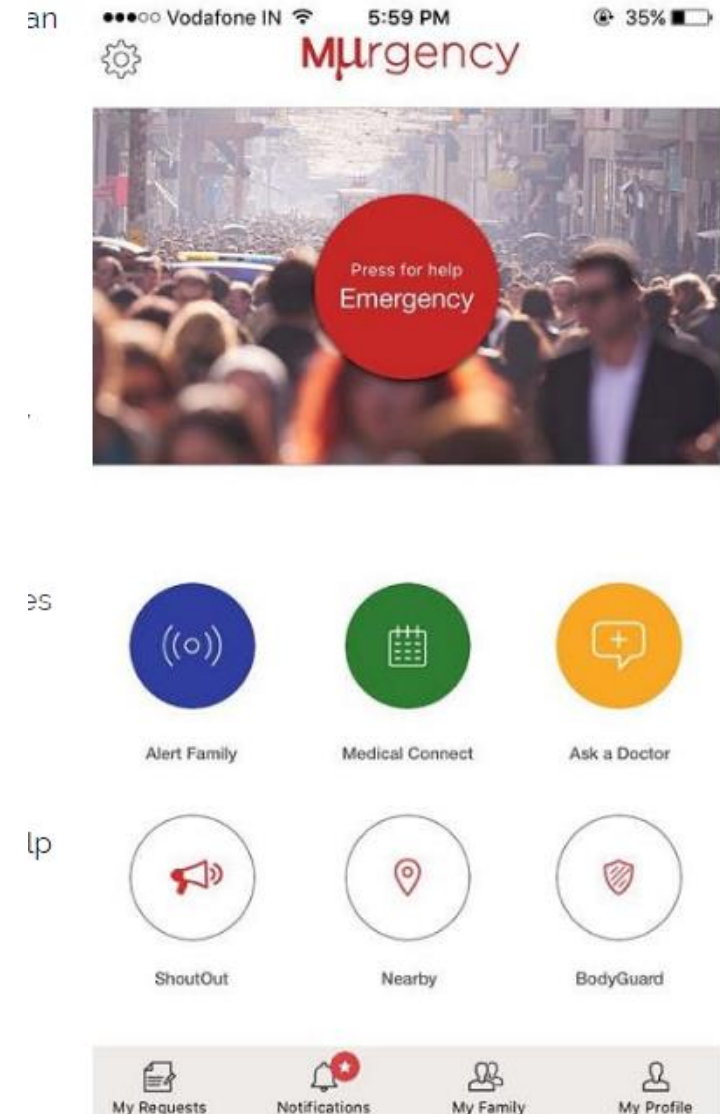


## Medical urgencies

Aggregators bringing together varied emergency services – doctors, nurses, paramedics, ambulances, and first-aid assistants – all on one platform.

Users can call for emergency medical response and assistance. Notification will be sent to all the nearest emergency responders, allowing them to accept the demand and provide timely assistance.

Automatic alerts to the patient's family and/or friends who are registered as emergency contacts..



## Bringing doctors and paramedics to the patient's doorstep - Home Health

Home visits from doctors, nurses, physiotherapists and technicians.

Using remote diagnostics, point-of-care devices, and remote monitoring equipments; doctors and medical professionals can monitor patients who can't travel to hospitals. The patient data is uploaded using smartphones to an EMR platform, which uses predictive analytics to understand health trends in the patient



**Nightingales**  
THE HOME HEALTH SPECIALIST



**Thyrocare**<sup>®</sup>  
World's largest thyroid testing laboratory

# Aggregating nursing services to hospitals

AI for Nurse Staffing – Day and night, hospitals require high-quality clinical staff for their patients. To meet their needs, aggregators channel and direct nurses in close proximity.

The screenshot displays the cerebro mobile application interface. At the top, the cerebro logo is on the left, and navigation links "Get Started", "Read Our Blog", "Frequently Asked Questions", and "Contact Us" are on the right. The main content area shows a job listing for "ICU - Day" at "Cedars Sinai Medical Center" (Los Angeles, CA, 3 miles away). The listing includes a map, a table with pay details, dates, time, and desired qualifications. At the bottom of the listing are buttons for "REQUEST ASSIGNMENT" and "ASK A QUESTION".

Pay Per Shift	Shifts	Your Pay
\$1,020	5	\$5,100

DATES: June 10 (Wed) - July 15 (Fri)  
3 shifts / week  
TIME: 07:00 - 19:00

DESIRED QUALIFICATIONS  
Certs: ACLS, NREMT  
Skills: Deep Sedation, Intravenous Therapy

REQUEST ASSIGNMENT  
ASK A QUESTION

Background text: Welcome to the Un-Agency. Pick up RN shifts at nearby hospitals without an agency in the middle.

Get Started

# PERSONALIZED HEALTH AND LIFESTYLE



## Wearing health is the new fashion statement

Health is getting strapped on to wrists, pockets, body and head  
and no one's complaining!

Entertainment and informative wearables,  
your Fitbits and Apple watches

phone-connected, body-mounted sensors

people with diseases like asthma or atrial fibrillation,

or just navigating the streets

[Air Louisville](#) has used sensors for a different kind of danger: the terrible air quality of the city. The GPS-enabled sensor, which is made by [Propellor Health](#), was attached to over 1,200 rescue inhalers. The sensor also tracked the weather and pollutants in the air at every use. The data identified “hotspots” of respiratory distress in the community, which was used to [inform policy on air pollution](#) and “better understand how environmental drivers are influencing these patterns.”





“The doors are just a couple  
steps ahead of you,  
on your left—it’s a revolving door,”

**AIRA**





“You can enjoy a day out!”

Daily Asthma Forecast- Propellar





## Chatbots



**47%**

Booking  
appointments



**42%**

Managing  
prescriptions



**38%**

Diet and exercise  
tracking and advice



**36%**

Heart rate and blood  
pressure monitoring



**32%**

Reviewing symptoms  
and advice



**29%**

Reporting symptoms  
and illness



**25%**

Mental health  
support

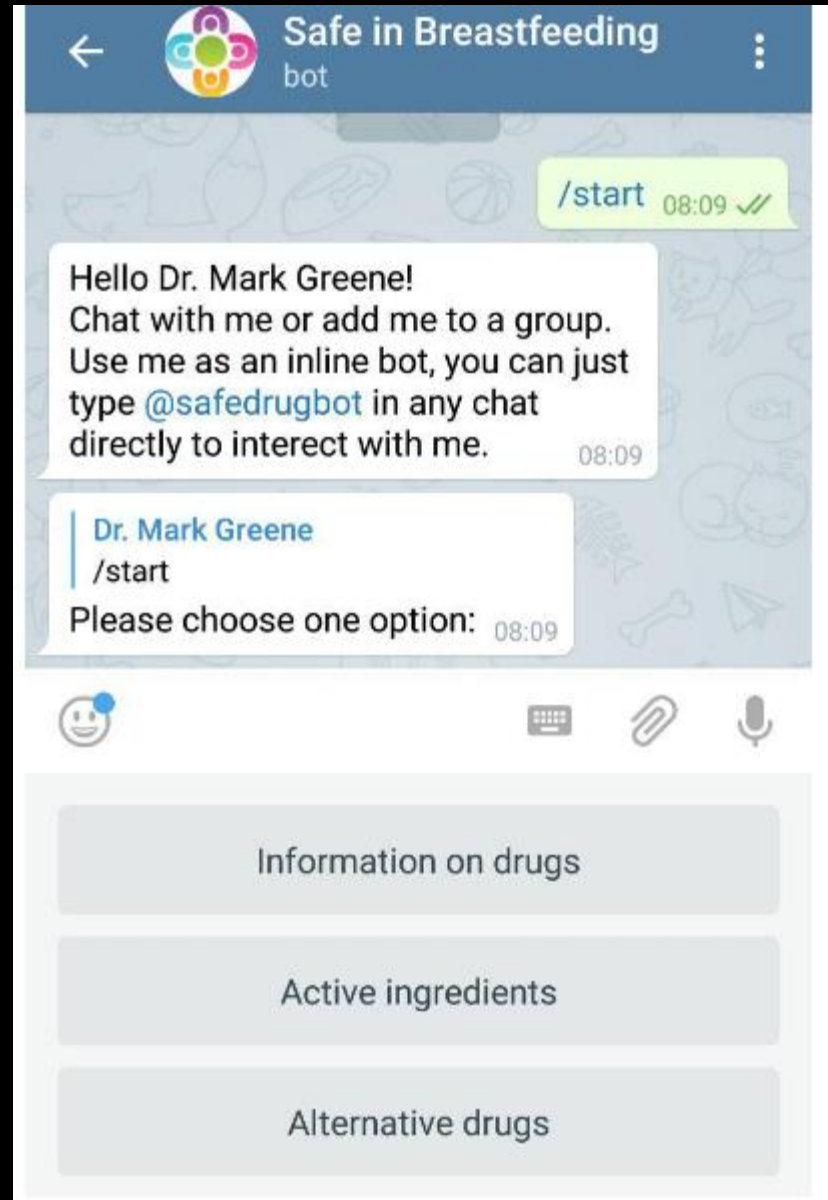


**23%**

Messaging with  
medical services

# Chatbots

use of drugs during  
breastfeeding



# **CREATING BETTER CONNECTED COMMUNITIES**

# Online communities are shaping like never before

Health care professionals cannot  
be far behind





# THE GOODNESS OF GATES...

## They need the goodness of gates

Gates that allow only fellow peers...qualified, registered medical practitioners with whom professional cases, opinions and practice parameters can be shared privately

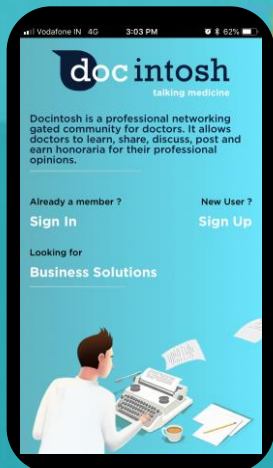




Docintosh allows peer to peer connectivity. It allows doctors to share cases, exchange opinions and ask queries on a secure platform. It also allows doctors be visible in their own professional circle. They can share published papers, proprietary procedures and facilities for better referrals.

## Welcome to Docintosh

Docintosh is an online gated community of registered medical practitioners only. Doctors are verified and segregated into specialty circles.



# **GAMIFYING RECOVERIES**

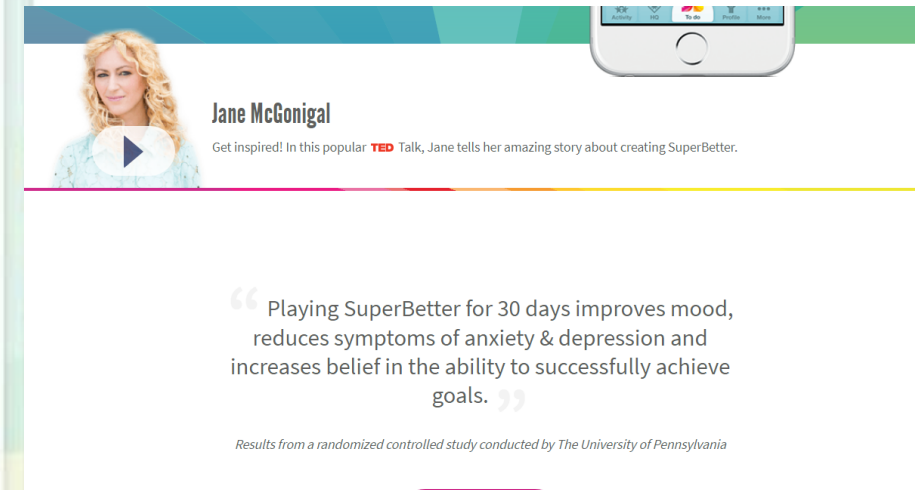
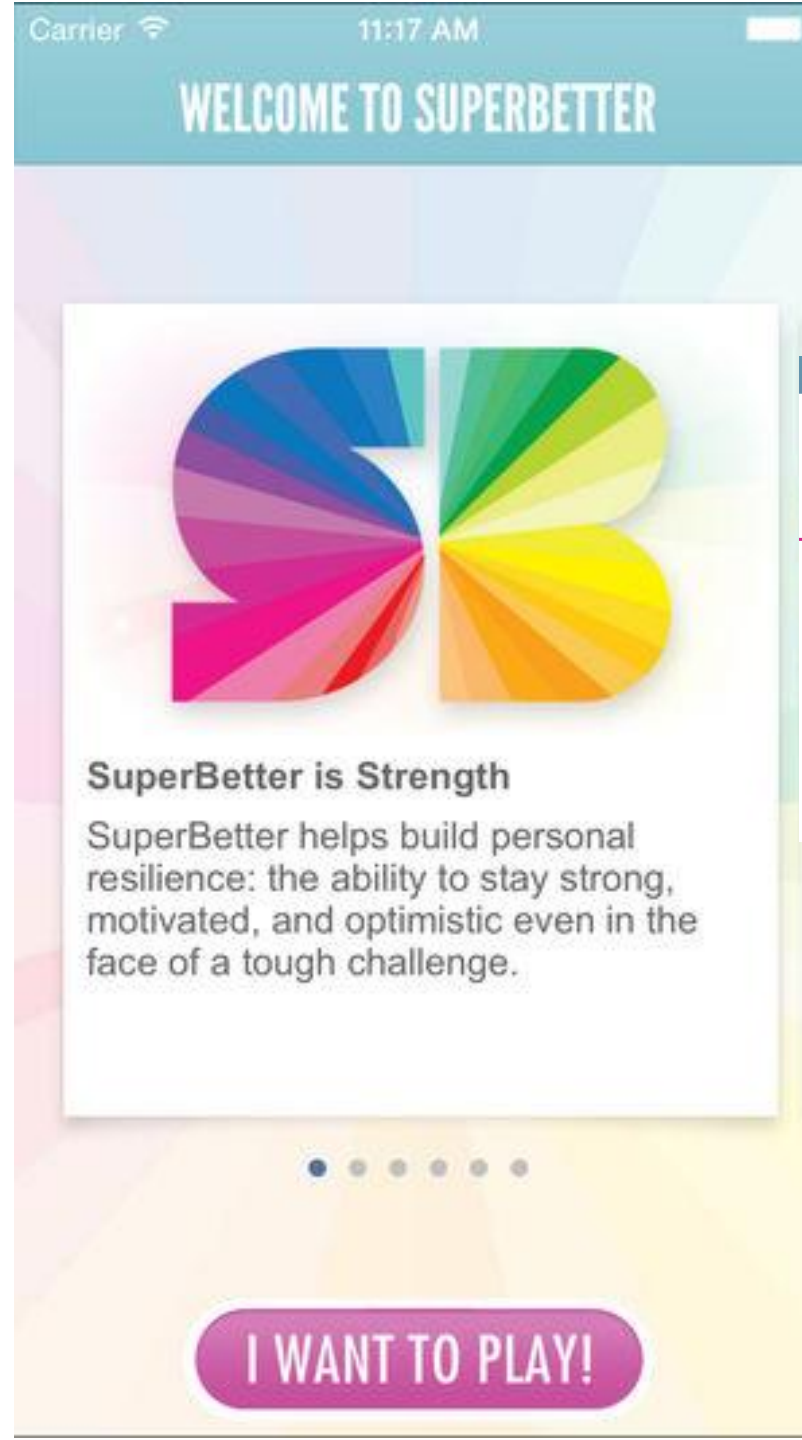
## Stay Strong through mental ups and downs

She suffered a debilitating concussion. It affected her sleep, eating and her social life. When nothing worked she decided to play through her concussion!

Jane McGonigal created a concussion recovery game based Called SuperBetter.

Has helped 250000 people recover from their problems of anxiety, chronic pain and traumatic brain injuries.

Clinical trials suggest the game could be more effective than drugs in alleviating some symptoms of depression.





## Diabetes: Minecraft for Type 1 Diabetes

“We ran a live event with fourteen children last Friday, testing Minecraft for Type 1 Diabetes. In 15 minutes flat, the kids were grasping the relationship between carbs, insulin, and blood glucose, while having a great time playing together.”



## Severe Burns

Burns pain is of the worst kinds. To fight, University of Washington has helped developed a game called SnowWorld3.

SnowWorld was designed around the concept of snow because cold and ice is the antithesis to burning fire,

For burn victims, the healing process can be excruciatingly painful. Nurses must regularly remove staples and stitches, clear away dead skin, clean the wounds, and determine if the healing process is moving along properly. This process, known as wound care, is often described as just as painful as experiencing the burn itself.

Narcotic drugs are typically given to burn victims to help get them through this process, but often this is not enough to mask the intense pain.



The VR experience, known as SnowWorld, features a snowy scene where users score points by throwing snowballs at snowmen, penguins, woolly mammoth and flying fish. To play the game, users point their head slightly in the direction they want to throw a snowball and then press a button to launch it.

## Severe Pain - VR analgesia

**works in this setting because it reduces the brain's concentration on the pain.**

“The brain is amazing. In a battlefield situation, for example, a soldier can be critically injured but not notice it because he is so busy, or in a case of an automobile accident, a person can do superhuman things when they have a broken leg because they are focused on just surviving—it is all about distraction. If we give them something to concentrate on that is immersive and that is consuming, then it takes away from what is going on around them.”

In a sense, VR analgesia is similar to the concept of using traditional anesthesia to block out pain,

Brain scans on patients playing VR while experiencing pain have shown a reduction in pain-related brain activity. This demonstrates that not only is the VR changing how the patient is interpreting the incoming pain signal, it is actually changing the way the brain processes the pain signal,



Autism:

Children with autism show pronounced impairment in face recognition. Elizabeth Whyte a researcher in Developmental Neurosciences at Penn State has created a game where autistic patients are detectives for a bank robbery. They have to correctly identify the facial expressions of potential suspects.



## Stroke Rehab

Nintendo Wii4 platform is being used to rehabilitate stroke victims.

There's growing evidence that virtual reality gaming systems like the Wii™ can help stroke victims regain some arm function and even improve balance and visual impairments



## Responsible Use of Technology

In the hands of wrong intentions technology can be dangerous

Technology can have large impact on user's mental and physical health. Being over connected has the risk of psychological issues such as distraction, expectations of instant responses, depression, anxiety and physical issues like neck and wrist strains.

Technology needs clinical significance

It should not intrude on privacy

It should have the intention of solving genuine problems

**Master Technology. Don't be it's servant.**

The power that technology confers requires that we use it appropriately, safely, equitably, and humanely.

Like Michael Jordan  
says Just Play. Have  
fun. Enjoy the game.