

BIXEPS

MITOCHARGE TECHNOLOGY

Bringing Added Exercise Benefits without Physical Strain
A Patented Technology by NUS (Singapore) & ETH (Zurich)



ABOUT BIXEPS

Our company, QuantumTX, was founded in 2019 by NUS Associate Professor Alfredo Franco-Obregón and Professor Lee Chuen Neng.

Leveraging decades of research, they developed the Muscle Magnetic Mitohormesis (MitoCharge) patented technology, which provides users safe and gentle muscle activation and empowers them to get fitter, healthier and enhances their capacity for exercise.

Today, QuantumTX has launched our first muscle activation device: BIXEPS that allows users to stay active and healthy as they age, enhancing their muscle recovery, performance and overall quality of life!



Photo by One Wellness Medical, Eu Yan Sang

This device is intended to improve general wellbeing and to maintain a healthy lifestyle. It is not intended to be used for any medical purpose, management or treatment of any medical condition or disease. Please consult a physician for any medical advice required.



1. MitoCharge Technology

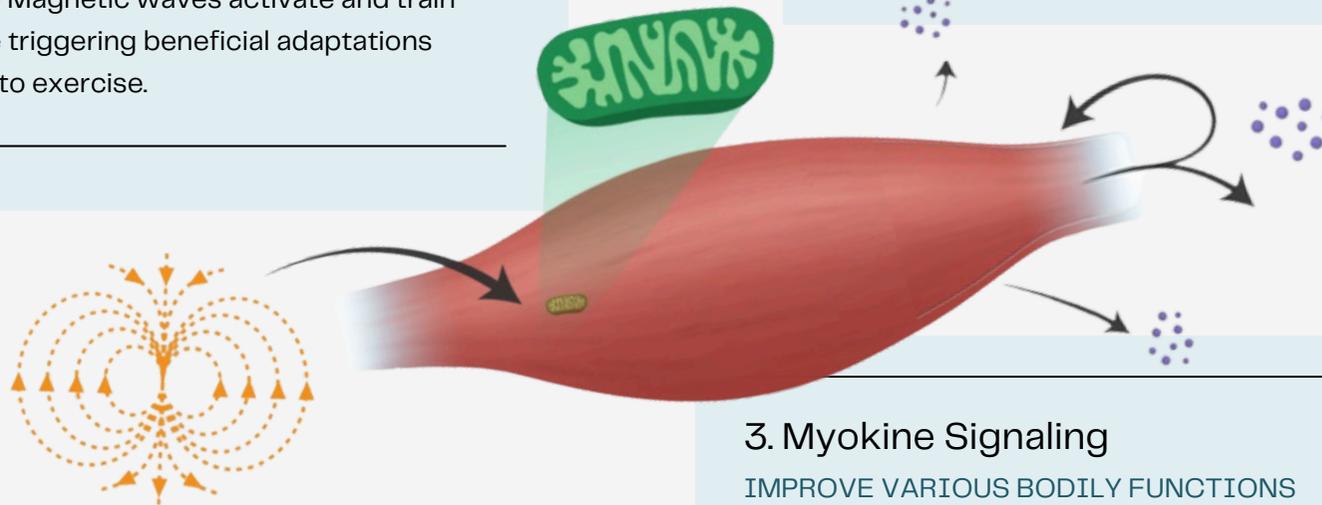
ACTIVATE MUSCLE
WITHOUT PHYSICAL STRAIN

Electro Magnetic waves activate and train muscle triggering beneficial adaptations similar to exercise.

2. Mitochondria Activation

INCREASE ENERGY OF CELLS

Mitochondria turn on and create energy needed for work, repair and rebuilding.



3. Myokine Signaling

IMPROVE VARIOUS BODILY FUNCTIONS

Muscle signals (called "Myokines") are released to improve other bodily functions like metabolism, regeneration, moderating inflammation, etc...

HOW BIXEPS WORKS



BENEFITS OF BIXEPS

BIXEPS Brings You The Benefits Of Exercise Without Physical Strain

- Improves muscle energetics and performance
- Promotes muscle rebuilding and recovery
- Enhances metabolism
- Improves function and aids transition to healthier and more active lifestyle

Pilot studies were conducted from 2015 to 2017 at National University of Singapore, Yong Loo Lin School of Medicine, Department of Surgery.

BIXEPS fields were shown to improve muscle energetics, providing energy for recovery. The treated group also had higher blood-based signals that encourage muscle regeneration.

Ongoing local and international clinical trials continue to explore the potential of our technology for broader applications in areas such as diabetes, stroke recovery, osteoarthritis, and sports rehabilitation.

To date, thousands have benefitted from BIXEPS.

They experienced strength and endurance gains, and enhanced mobility contributing to their overall well-being and performance.



Awadh Salim
Process Technician

There has been a lingering pain and tightness in my right knee and calf muscle which I have been suffering from for years. I have tried many methods, including taking curcumin pills, acupuncture, deep tissue massage, and cupping.

My colleague, Yung, introduced me to BIXEPS. Signing up for the 12 week programme was the best decision I have made thus far. By the 3rd session, I felt much better. After completing my first round of BIXEPS, I joined my wife last week for a 10km run. I enjoyed my run without any problems all thanks to BIXEPS.



Theresa Wong
Retired Tour Guide

After a couple of weeks of BIXEPS sessions, my legs felt stronger. I am able to walk further and for longer. Previously I was inclined to hop into a taxi/private hire car, but now I find taking a bus or MRT a breeze. In addition, my weak knees are not bugging me as much.



George Teo
Retired

Prior to the BIXEPS programme, I had a lot of weakness in my legs. It was painful in my hip and feet when I took even a few steps. I could not climb stairs the normal way, and had to rely on the handrails to balance myself.

After about a month of treatment on the BIXEPS machine, I felt some relief when I walked. My hips weren't that tight and I could walk quite normally. My movement up and down the stairs was much faster, with better balance.

At the end of 12 sessions, I felt that my leg movement had returned to normal, and I could go up and down stairs without using the handrails. Indeed I am grateful to the QuantumTX team for their gentle service. BIXEPS is painless and helped to restore my movement. Thank you QuantumTX for this treatment to restore my mobility.



Colin Soh
Retired Senior Executive

At age 61 I was unable to do much jogging because I had injured both my feet arches. Even light walking was painful. Was introduced to BIXEPS and I was intrigued enough to try out a 10 treatment package. It turned out to be a great decision! I slowly but surely began noticing strengthening in my legs after 6 -7 sessions. By the last session I was sure that I wanted to sign up for another 10 treatments. While I experienced little change early on, I can certainly testify that my legs and overall fitness has noticeably improved compared to 4 months ago. I certainly recommend BIXEPS to anyone who is not able to do any physically demanding exercise.

POWERING BETTER HEALTH WITH MITOCHONDRIA

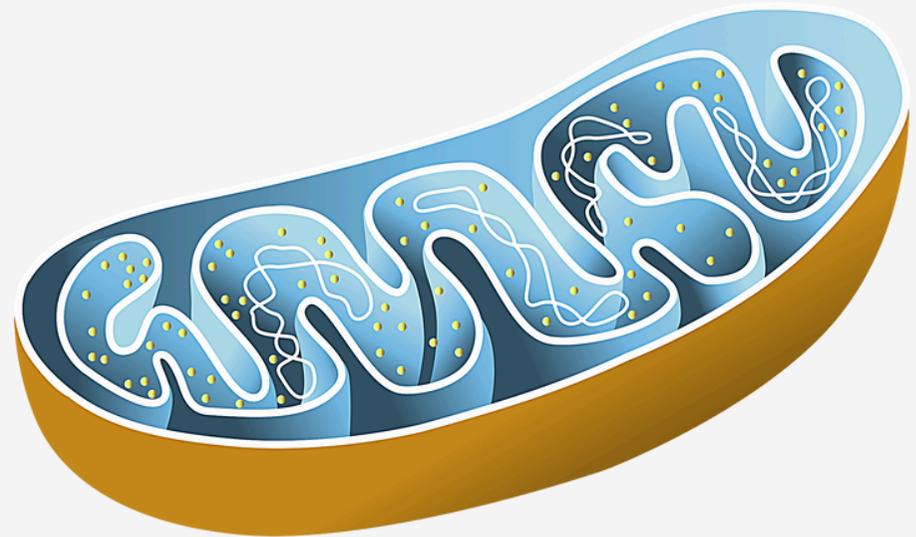
Mitochondria are the powerhouses of our cells. They produce energy that is essential for the functioning of our body, and for recovery and regeneration.

As we age, the quantity and quality of our mitochondria decline.

This can lead to reduced energy production and contribute to the feeling of fatigue and decline in overall physical performance.

Maintaining mitochondria health as we age is vital for our well-being. Regular exercise remains as one of the most effective ways to activate and maintain healthy mitochondria.

BIXEPS MitoCharge technology supplements exercise and provides additional **muscle and mitochondria activation**, leading to **better muscle energetics, enhanced physical performance, improved recovery and regeneration**, and a general boost to our health.



The concept of MitoCharge

MitoCharge is a process of giving mitochondria a healthy amount of stress to train them and enhance their efficiency and capacity. BIXEPS MitoCharge sessions help muscle and mitochondria to adapt and become fitter over time.

FRANCO-OBREGÓN, A. (2023). Magnetic mitohormesis: A non-invasive therapy for inflammatory disorders?. BIOCELL, 47(2), 239–244.

IMPROVING MUSCLE ENERGETICS

By improving mitochondrial health and efficiency, we improve energy production and usage in muscles.

Better muscle energetics supports our training, leading to **improved physical performance and training capacity.**

Greater energy availability also supports the repair and regeneration of muscle tissue, facilitating **faster and easier recovery.**

Together BIXEPS muscle activation supports both our training and recovery, leading to **improved fitness levels and training adaptations.**



BIXEPS uses MitoCharge technology to activate and train mitochondria optimising our muscle energy production and usage.

Stephenson, Mary C., et al. "Magnetic field therapy enhances muscle mitochondrial bioenergetics and attenuates systemic ceramide levels following ACL reconstruction: Southeast Asian randomized-controlled pilot trial." *Journal of Orthopaedic Translation* 35 (2022): 99-112.

PROMOTING MUSCLE REBUILDING

Starting around age **40**, muscle mass **decreases** by about **8% per decade**.

After **70**, muscle mass **decreases** by about **15% per decade**.

This is dangerous because muscle mass plays a key role in our health. Muscle plays a vital role in regulating our metabolism, regeneration and even immune response.

Muscle loss is a natural process of ageing, largely accelerated by inactivity. Regular exercise is the best way to reduce muscle loss. Maintaining healthy levels of muscle mass can help to maintain activeness, independence and quality of life in seniors as they age.

Kirwan, Richard, et al. "Sarcopenia during COVID-19 lockdown restrictions: long-term health effects of short-term muscle loss." *GeroScience* 42.6 (2020): 1547-1578.
Prado, Carla M., et al. "Implications of low muscle mass across the continuum of care: a narrative review." *Annals of medicine* 50.8 (2018): 675-693.
Argilés, Josep M., et al. "Skeletal muscle regulates metabolism via interorgan crosstalk: roles in health and disease." *Journal of the American Medical Directors Association* 17.9 (2016): 789-796.



Further, it becomes harder to build muscle with age

Interventions for muscle loss focus on increasing physical activities. However, many elderly and frail individuals may find these challenging due to age-related aches and pains and muscle weakness.

K. Ahlund, B. Öberg, N. Ekerstad, and M. Bäck, "A balance between meaningfulness and risk of harm – frail elderly patients' perceptions of physical activity and exercise – an interview study," *BMC Geriatrics*, vol. 20, no. 1, p. 490, Nov. 2020, doi:10.1186/s12877-020-01868-2.

In frailer and older individuals, improving muscle health and muscle energetics can help to reduce deconditioning, and support muscle rebuilding.



Professor Tay Boon Keng

Emeritus Consultant, Orthopaedic Surgery, Singapore General Hospital

“The significance of muscle loss is that the patient may be weak and be at risk of falling. After undergoing BIXEPS treatment, a significant proportion of such patients improve to a position where they feel stronger. We can objectively measure them and see that they are more stable on their feet and therefore stand less risk of falls and injury.”

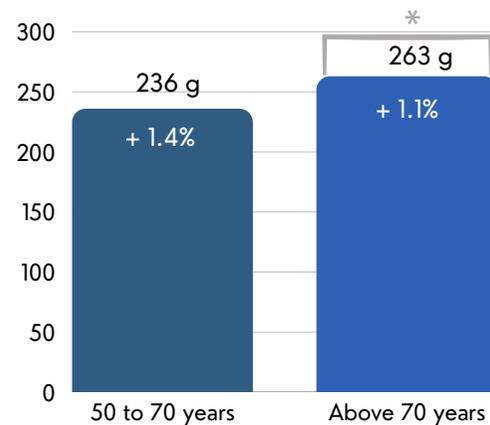
In 2022, QuantumTX evaluated the changes in Skeletal Muscle Mass of 33 users in a pilot study and showed that weekly 10-minute BIXEPS sessions helped slow the loss of muscle mass.

With BIXEPS, **64%** of all users and **71%** of inactive individuals experienced an increase in skeletal muscle mass.

Users gained 252g in Skeletal Muscle Mass (+1.2% from baseline) after 8 sessions of BIXEPS.

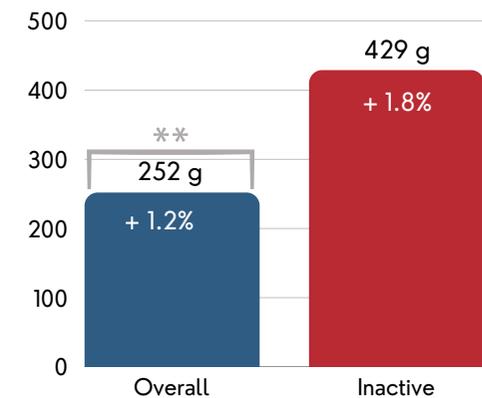
Gains in muscle mass were significantly higher for older and weaker individuals.

Older seniors gained more muscle mass



Average Muscle Gain by Age
Absolute Gains (g), % gains over baseline

Inactive individuals gained more muscle mass



Average Muscle Gain by Functional Aptitude
Absolute Gains (g), % gains over baseline

* p < 0.1, ** p < 0.05

Of note, while muscle mass gains can be a positive signal towards better muscle health, our “slow-twitch” muscle-fibres required for daily activities are usually non-bulky and can **improve in function, even without noticeable gains in mass.**

UNDERSTANDING KNEE PAINS

Many adults experience knee problems as a result of aging and continual stress on the knee joint. Knee pain, tightness, stiffness, and swelling are common complaints in older adults. Age-related knee problems are often commonly associated with the following causes:

1. General wear and tear from daily activities

Our knees absorb a huge amount of pressure with every step — typically 1.5 times our body weight. That pressure, plus regular wear and tear from daily activities takes a toll over time. Muscles and ligaments get weaker, leading to greater strain on the joints.

2. Osteoarthritis

Osteoarthritis is the most common type of arthritis that affects the knee. It is a degenerative process where the cartilage in the joint gradually wears away, affecting older adults. When the cartilage is worn, the bones rub against each other, leading to pain, stiffness, and swelling.

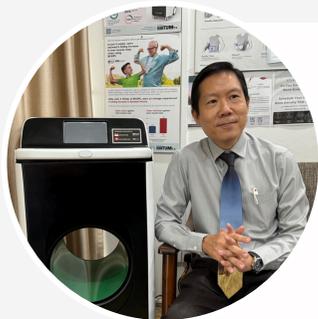


3. Muscle weakness

Age-related muscle weakness in the legs results in reduced support to the knees. Boosting muscle strength in the legs stabilizes the knee joint, and helps the muscles absorb stress placed on the knee.

4. Sports related injuries

Active adults who run or play sports that involve jumping or quick pivoting are also more likely to experience knee pain and problems such as sprained or strained ligaments, cartilage tears, and tendonitis.



Dr Yoon Kam Hon

Director of El Shaddai Arthritis and Rheumatism Specialist Medical Centre

“Because of knee pains, patients don’t walk so much, leading to disuse atrophy of leg muscles and weakness. BIXEPS technology helps to regenerate muscles. We know that at least 60% of patients after one cycle of treatment find that they can walk longer, have more strength and power for daily living, and see reduction of pain and functional symptoms.”

Dealing with knee discomfort can be challenging, as it affects mobility, quality of life, and ease of completing daily tasks such as walking and climbing stairs. Furthermore, it hinders our ability to get the exercise that is necessary for strengthening and rebuilding the joints.

Around 1 in 4 BIXEPS users have knee troubles. These users were assessed for balance, gait speed and lower limb strength before and after 12 weeks of BIXEPS.

88% of users with knee issues saw **improvements in lower limb function and strength.**

75% of them reported **reduction in their knee discomfort over the 12 weeks of BIXEPS use.**

BIXEPS muscle activation trains and strengthens muscle, supporting more physical activity. Activated muscles also release pro-regenerative signals that relieve many complaints that may build up with inactivity.

Yvette Cheak



After many falls my right leg became very weak and the knee often buckles. A friend introduced me to BIXEPS as she said she benefitted from it. So I signed up for BIXEPS in Sept 2021. Since using it, there was less swelling at the ankle and knee, and I became more energetic. My knee became less painful. After the first package, I decided to sign up for a second package. Since then, my knee does not buckle as much and someday, I am able to walk at home without the walking stick.

Charlie Yi

Executive in Venture Capital



I had an issue with my right knee with a torn meniscus after a cardio workout. It was too small to operate so the doctor recommended physical therapy. As expected after 1.5 years the knee was much better but not 100%. Fluid still remained, where it was visibly noticeable and I could not fully extend my knee. It affected my regular walking and physical activities. After 3 sessions with BIXEPS in December of 2021, the fluid went away instantly and now I can fully extend my leg. Truly remarkable. I have continued to use it ever since then. I am now back to my normal, 3-4 work out sessions per week without any discomfort.

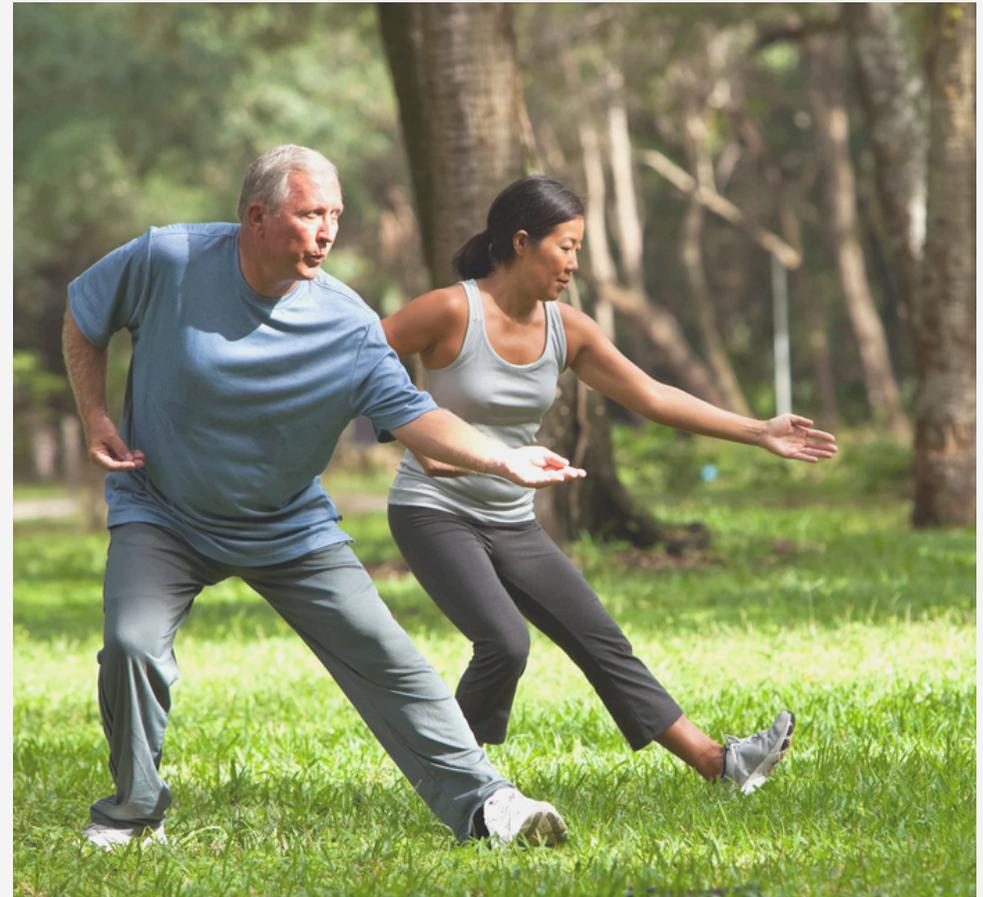
ENHANCING PHYSICAL FUNCTION

As we age and experience a natural decline in physical function — such as reduced muscle strength, balance, and coordination — our risk of falls tends to increase due to decreased stability and mobility.

Falls are a leading cause of disability, injury, institutionalization and death in elderly people. 1 in 3 community-dwelling elderly aged 65 years and above will have at least one fall within a year. This risk increases with age. These falls result in serious injuries that affect the livelihood of many.

Exercise is needed to strengthen lower limbs and improve balance in order to reduce falls. However, due to fears of falling or worries of their own frailty, 2 in 5 elderly avoid exercise, inadvertently further increasing their risk of falls.

Ang GC, Low SL, How CH. Approach to falls among the elderly in the community. Singapore Med J. 2020 Mar;61(3):116-121. doi: 10.11622/smedj.2020029. PMID: 32488276; PMCID: PMC7905119
Hornyak V, Brach JS, Wert DM, Hile E, Studenski S, VanSwearingen JM. What is the relation between fear of falling and physical activity in older adults? Arch Phys Med Rehabil. 2013;94(12):2529-2534. doi:10.1016/j.apmr.2013.06.013
Yap, J.L.Y., Tai, Y.K., Fröhlich, J., Fong, C.H.H., Yin, J.N., Foo, Z.L., Ramanan, S., Beyer, C., Toh, S.J., Casarosa, M., Bharathy, N., Kala, M.P., Egli, M., Taneja, R., Lee, C.N. and Franco-Obregón, A. (2019), Ambient and supplemental magnetic fields promote myogenesis via a TRPC1-mitochondrial axis: evidence of a magnetic mitohormetic mechanism. The FASEB Journal, 33: 12853-12872. <https://doi.org/10.1096/fj.201900057R>

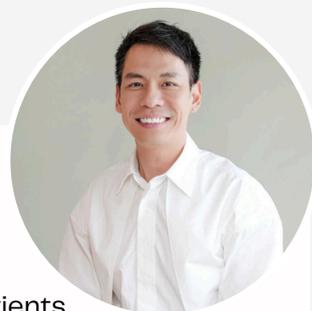


BIXEPS uses MitoCharge technology to bring users the benefits of exercise without physical strain. Thus, increasing balance, gait speed and leg strength for better function.

Users in the community aged 60 and above were assessed for balance, gait speed and lower limb strength before and after 12 weeks of BIXEPS. Results show the improvements as seen to the right.

The majority experienced functional gains after 12 weeks (74–85%). Most users in the high-fall risk categories noticed improvements (80–100%). Many ‘graduated’ with low-fall risk scores after 12 weeks of BIXEPS (25–47%).

An extended study with users over 20 weeks showed that their balance and mobility continued to improve significantly with longer term use.



Dr Chua Ee Min
Aesthetic Physician at
KCS Medical Group

“I use BIXEPS for my older patients as a primer to optimise strength and performance. This helps with the wellness exercise training programme that we provide to them.

I prioritise wellness in my practice. I want my patients to not only look good, but feel good as well. By incorporating BIXEPS into my practice, my patients will experience better sense of wellbeing, stronger muscles, and a more holistic sense of improvement to their wellbeing.”

Better Balance

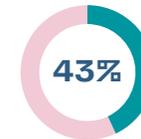
Timed Up and Go timings



of seniors improved,
with average gains of
16.3%

For seniors with slower timings
associated with high fall risk

100% improved



moved out of
high fall risk
category

Greater Leg Strength

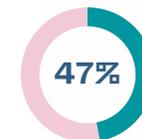
5 Times Sit to Stand timings



of seniors improved,
with average gains of
14.2%

For seniors with slower timings
associated with high fall risk

100% improved



moved out of
high fall risk
category

Better Mobility

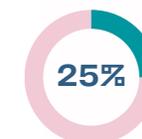
4m Gait Speed test



of seniors improved,
with average gains of
24.9%

For seniors with slower timings
associated with high fall risk

80% improved



moved out of
high fall risk
category

BIXEPS

USER TESTIMONIAL



Darren Lim, National Cyclist

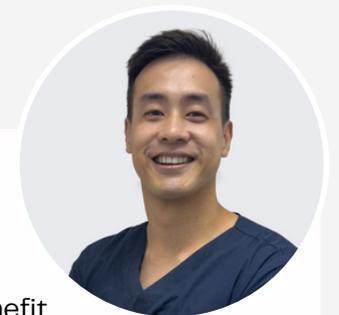
Before using BIXEPS, I found it harder to recover. After using BIXEPS, my **power outputs are a lot better, and I don't feel that my legs are very heavy** as I unclip after a hard ride.

There's definitely been **improvements in endurance**. The difference comes in after the third or fourth week, I feel so much easier (to cycle) and my heart rate is lower as well.

SPORTS RECOVERY

Enhanced muscle energetics can improve recovery. This shortens recovery times between training intervals. It also allows athletes to train harder for longer.

BIXEPS muscle activation helps maintain physical form during training downtime, enabling a quicker return to their 'A' game!



Dr Nigel Lim
Family Physician at
1doc Medical Centre

“Competitive athletes can benefit from the BIXEPS device. I used to be a national swimmer in the past, and am very familiar with the hectic training schedules as well as the impact of musculoskeletal injuries on athletes.

BIXEPS has been proven not only to improve recovery time, but also helps to enhance endurance as well as increase muscle strength which is definitely very beneficial for this group of athletes.”



Adrian Ng

Tennis Coach and
Cycling Enthusiast

Exponential Recovery.

I am a tennis coach and have been coaching for almost 30 years.

While coaching, I have to move around the court for long hours, and that causes my knees to hurt a bit as I have torn my meniscus previously.

I also cycle once to twice a week if time permits, and I normally always cramp after cycling.

After attending the BIXEPS programme, the cramps I used to get after cycling have gone away. I can feel that my legs are stronger and I am able to last longer on my bike rides.

I am also starting to play a bit more tennis compared to before the program.



Marian Thng

Softball Player

More Power

Power and strength were what I'd always lacked.

When my friend introduced BIXEPS to me, I was initially skeptical; I thought to myself: "Sure or not? I'm doing my bat sets every day, and BIXEPS can help me improve?"

Well, I signed up with BIXEPS eventually. There was no noticeable effect after my 1st 2 sessions. However, from my 3rd session onwards, I feel I was able to utilize the strength from my thighs especially and transfer the strength to my bat swings. And the extent of my hits got better with subsequent sessions.

I do feel more powerful when I execute my bat swings.

Thank you BIXEPS. You got a fan in me!



Foo Pei

President of Singapore
Baseball & Softball
Association
(SBSA)

A New Way.

"I am a weekend-warrior training for a Masters (age 35 and above) softball tournament, and I only has 6 months to get myself up to speed to meet the demands of a competitive softball tournament.

Since the game of softball is a highly explosive sport with many start-stop movements to maneuver, it was clear that I needed to put in many more hours of high intensity training in between the weekend trainings.

Then I was introduced to BIXEPS! I started to feel the effects from just 3 to 4 sessions of BIXEPS treatment. My game was improving as I was more nimble on the field and I was feeling more "connected". I could string my batting and fielding movements together better. Even my coaches and teammates noticed the difference.

Thank you BIXEPS for allowing me to enjoy my game at a more competitive level again.

BOOSTING METABOLISM

Mitochondria, the primary site of metabolism, convert food into energy mainly using fat as the most efficient source. When activated, they increase the rate of fat metabolism, leading to a reduction in harmful fat around the body. Mitochondria dysfunction with age leads to accumulation of harmful fat over time.

The dangers of visceral fat

Visceral fat accumulates within the abdominal cavity and surrounds vital organs. Unlike subcutaneous fat, visceral fat is metabolically active and can release harmful substances including inflammatory adipokines and free fatty acids – causing inflammation, insulin resistance, and other metabolic disturbances.

BIXEPS has been shown to activate our fat stores by increasing the number of mitochondria in a process called 'fat browning'. This enhances the ability to burn fat for energy – helping to **reduce visceral fat accumulation**.

Individuals with higher baseline BMI values show a higher response rate and greater reductions in visceral and total body fat levels with BIXEPS.



Our prior research on fat metabolism

Prior pre-clinical studies have shown that exposure to MitoCharge fields accentuated fat browning and insulin sensitivity in mice. Prior clinical trials showed 16 weeks of BIXEPS also increased fatty acid metabolism.



Dr Tan Wang Theng

Aesthetic Doctor at Moyem Medical Aesthetics

“Our skeletal muscle does way more than allow us to stand, walk or squat. It is also an endocrine organ that secretes important chemicals such as myokines that influence other tissues – such as fatty tissues, our digestive system and immune system – to positively impact our metabolic health. BIXEPS promotes stronger muscles and provides far-reaching benefits for our metabolism and overall health.”

QuantumTX evaluated the changes in Total Body Fat and Visceral Fat Area of 70 users over a period of 12 weeks.

We showed that weekly 10-minute BIXEPS sessions helped to reduce both visceral and total body fat in **~65%** of all users.

After 12 sessions of BIXEPS, users saw:

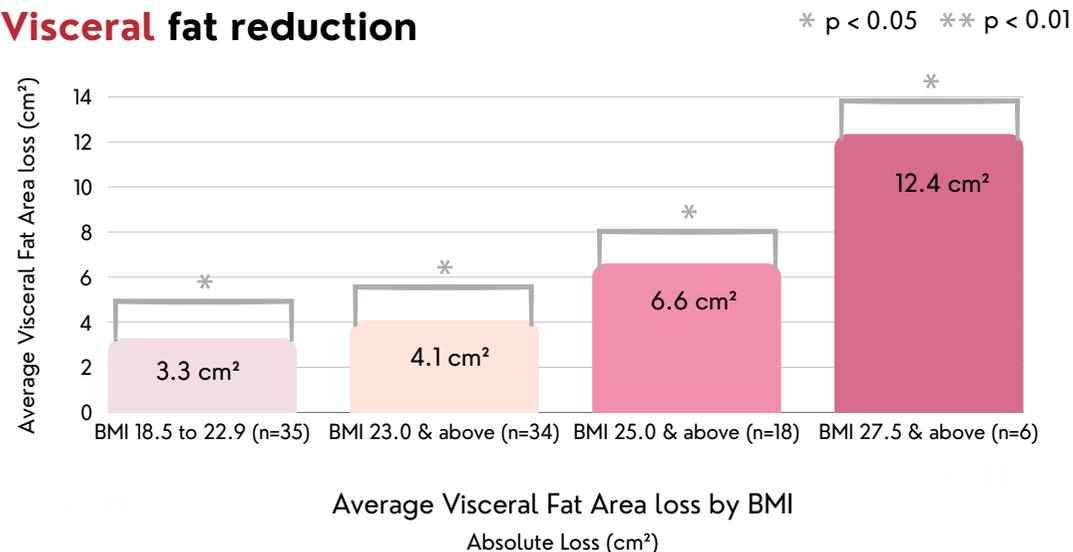
- **Reduction of 3.67 cm² in Visceral Fat Area (-3.2% from baseline)**
- **Reduction of 723g in Total Body Fat (-3.8% from baseline)**

Loss in total body fat and visceral fat was dependent on users' starting BMI.

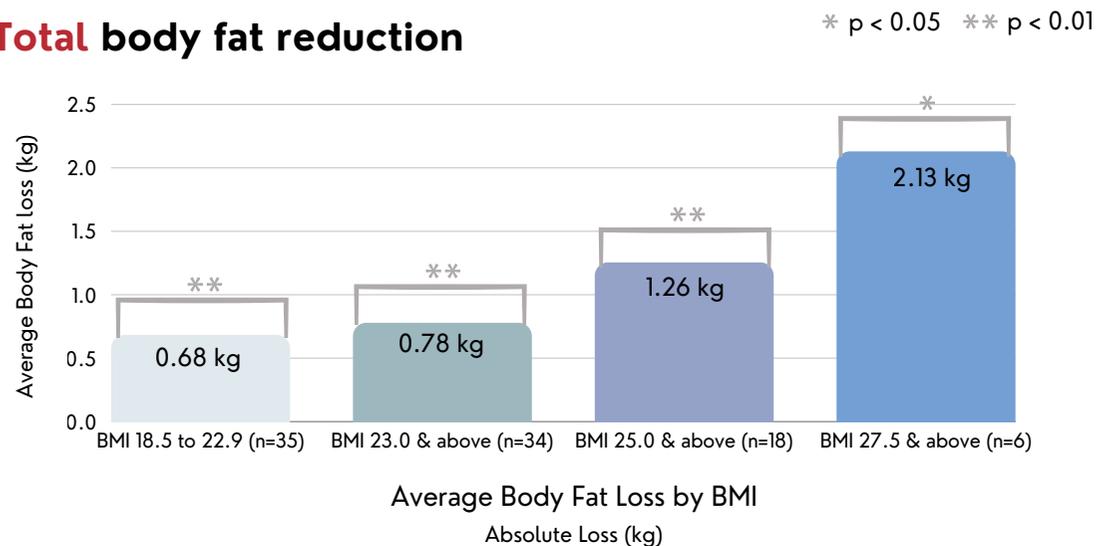
Individuals with higher baseline BMI values showed a greater tendency to respond and larger reductions in fat.

| | |
|------------------|--------------|
| BMI 18.5 to 22.9 | Normal |
| BMI 23.0 to 24.9 | Overweight |
| BMI 25.0 to 27.4 | Mildly Obese |
| BMI 27.5 & above | Obese |

Visceral fat reduction



Total body fat reduction



CASE STUDY: COMMUNITY ELDERCARE

Between September 2020 to February 2021, QuantumTX partnered with Toa Payoh Care Corner (TPCC) for a 20-week community **double-blind study** involving >40 seniors.

The aim of the study was to evaluate the use of BIXEPS as a supplement to existing exercise programmes, to further improve their function and fitness. Brief 10-minute weekly BIXEPS sessions were easy to comply with, and enjoyed by more than 90% of seniors.

With BIXEPS, seniors enjoyed larger gains in their functional performance compared to exercise alone. A larger proportion of seniors with BIXEPS achieved clinically meaningful functional gains. Qualitative surveys showed that 91% of participants had improvements in quality of life. Reported benefits included: greater ease in completing daily-activities, better endurance during exercise and fewer impairments when navigating stairs or getting around the neighbourhood.



After using BIXEPS, I am completely healed. I **no longer have cramps**. I like to walk. After walking for long distances, my legs still have strength. I also no longer need support when I walk at home anymore. **I can move around freely!**



After using BIXEPS for some time now, **I can get up without pain**. I can walk up and down stairs better, it has improved a lot. I just feel more comfortable.



BIXEPS is good for our bodies. **My walking is very good now and feels comfortable**. I hope to continue BIXEPS because it is good for our bodies and our legs.



After going through the programme, I feel less lethargic. **I have more energy so I can exercise more and a lot better without any pain**. I can go on walks with my wife more often and I can walk longer than before.



Before BIXEPS, I was always very tired. I would feel very weak, especially in my legs, when I woke up in the morning. I have cramps on and off all the time, but after using BIXEPS for 10 weeks, I feel very good. My **nerves and cramps have also improved**. I now wake up feeling fresh in the morning, and **I have gained at least 20% of my energy after using BIXEPS**. I would recommend BIXEPS to senior citizens as it works and is very convenient.

The benefit (of BIXEPS) is that I can walk further than what I usually walk. Now, when I walk for more than 5 kilometers, **I don't feel as tired as I used to**. It is very beneficial because now **I can walk independently and I can go anywhere** I want with the strength I have gained after using BIXEPS. I think it is very good.



I have been in this programme for quite some time. By the 7th session, I do feel a difference. Now, **I can walk better and more steadily, for longer distances without feeling strained**. In general, I feel that my condition has improved and **I am more active nowadays**. In fact, at home, I do a lot of chores, and I feel that I am able to do them better now.



After using BIXEPS, I am better. My health has improved. Before BIXEPS, my health was not great. My legs felt weak. After BIXEPS, **I can walk faster without feeling breathless**. The greatest benefit is **my body feeling better and healthier**.



After using BIXEPS, I feel that I have built more energy. **I can now walk more and for a longer duration**. I really enjoy it.

USER TESTIMONIALS FROM ALL WALKS OF LIFE



Mr Yoshiyuki Hiraoka

Managing Director of
Dialog OTEC

I was not walking well, my legs were in pain and I needed a walking aid. Even I went to do some exercise/treatment but there was not much improvement. After BIXEPS, my legs improved a lot and I felt less tired. I am so thankful for such a big improvement even at my age (75), and I hope I can introduce this device to others.



Dr Shi Xu

Founder of Nanofilm
Technologies International Pte Ltd

Our family has been using BIXEPS for 1 month now. My wife and I feel our walking less tiring and legs less strained. My father-in-law is now 85. After using BIXEPS for 2 weeks, his steps are much firmer and he is now willing to go outside for walking. More amazingly we all felt that his mind state seemed better and sharper.



Lee Kheng Meng
Retired Private Banker

I was introduced to BIXEPS through a family member, and have been using it for 20 weeks so far. After using BIXEPS regularly, I feel lighter on my feet. When walking and climbing stairs, there is less pressure and strain on my joints. During my regular table tennis sessions, I feel my reflexes and muscle reaction improving, and am less tired after each game.



Jennifer Tay

Self Employed/ Preschool
Teacher

I was looking for treatment for what became a chronic low to medium grade pain in both my legs when I was introduced to BIXEPS. With some desperation I signed up for the 10 sessions. After each 10 minute session, I felt some immediate relief in my calf muscles. After about 3-5 sessions I felt that the pain and strains in both my legs were easing. Today I'm able to move around faster and I can swim continuously twenty laps (600m) effortlessly. I would certainly recommend BIXEPS to my friends and relatives any time!



Mr Abdul Razak Jaffar

Project Director of
Borneo Properties Sdn Bhd/
Ex-National Badminton Player

I play badminton twice a week, it is quite intense. We have 2 hour sessions typically, and this is quite a regular occurrence. I used to have a lot of body aches after each session. After BIXEPS, what I realised was that the aches are not so intense, and the recovery seems to be much faster. Since we are playing twice a week, I realise that on a daily basis, the recovery gets faster and faster, so it makes quite a big change to my routine.



Mr Chin Choon Fong

Retired Lawyer/Banker (ADB)

I credit BIXEPS for accelerating the recovery of my left ankle in early 2021. I had pulled or strained the ligaments there badly such that I was often hobbling around in pain. Rest and targeted stretches helped. But it was only after I supplemented with regular BIXEPS sessions that my left ankle improved rapidly. After 3 or 4 months, I can rest my weight fully on my left ankle without experiencing any discomfort. I'm able to exercise, take long walks and climb multiple flights of stairs again.



Mr Yoh Chie Lu

Founder of Biosensors
International Group Ltd

My helper and I have been using BIXEPS for more than three months regularly (once every three days). We find our energy level has increased sharply both physically and mental awareness/sharpness. I am 70 years old and feel as energetic as if I was in my 50s. My helper is in her 40s and feels less tired after starting to use the device.



Mr Andrew Chan

Founder of
The Soup Spoon

That pain that I used to have for quite a long time, after about 3 to 4 times of BIXEPS progressively disappeared. I find that there is a lot more strength in my legs now. Where I used to wake up and feel like my legs are a bit stiff when I go down the stairs, there is a lot less of such pain now. And on long cycling rides where I put a lot more power to my legs, I do generally feel that the legs have a lot more power and the endurance has increased, including noticeably even in my tennis.



Datuk Dr Edward Ong

Founder of
Sutera Harbour Resort

My wife, Enung and I have been using BIXEPS for the last 3 months and I find that I have more strength in my legs which has helped me walk further and not tire easily. I used to have balancing issues if I stand up after sitting for a long time but now I'm able to balance when I stand up. Generally, I feel more confident and independent in my walking and less concerned about the distance I walk. Thank GOD for BIXEPS!



Ms Clare Wee
Regional Head (Asia)
INSOL International

My mother and I have both been using BIXEPS for over six months. Her restricted movement caused by a surgical procedure was much improved. For myself, my painful arthritic knee improved to the point where I now feel no pain. Best of all, BIXEPS has helped me to remain strong and more able to continue all the sports I enjoy!! I highly recommend BIXEPS to all.



Loo Chai Kee
Retired

I am a dialysis patient, and I was introduced to BIXEPS by my cousin. Because my feet are usually weak after dialysis, I often feel heavy when I stand up, and my knees have deteriorated due to dialysis, so I decided to try it. Then after the first time I did it, I felt light on my feet when I got up and felt remarkable results. After 12 sessions, my mobility assessment also showed significant improvement, so after one package was over, I decided to join the twice-a-week (24 sessions) program and keep using it again.



Lilian Koh
Retired

Before I started the BIXEPS treatment, I had difficulty walking and climbing stairs and felt weak in my feet. Then, the right knee caused pain problems due to bone spurs. After the 7th session with BIXEPS, I can walk without crutches and even climb stairs. My legs are stronger and stronger now. Pain in the right knee also dropped from 7 to 1 on the VAS pain scale.



Valarie Eramanis
Retired relocation consultant

I started using BIXEPS after an ankle injury. I learned about BIXEPS through the radio and wanted to find out more. The staff was most knowledgeable and helpful in explaining the treatment and how it could help me. I had surgery on my left ankle and started using BIXEPS to prevent muscle deconditioning and help with recovery. With BIXEPS, I noticed that the healing process and recovery were easier and faster compared to other surgeries I had previously. My doctors were pleased with my progress, and I have recommended others to try BIXEPS too. Now I am feeling stronger and can carry on with more muscle-building exercises at the gym.



Pastor Timothy O'Connell
Pastor

In recent years, I have noticed a progressive weakness in my legs. One of the concerns was numbness and instability whenever I would make abrupt turns while walking. I also needed more confidence due to instability whenever I would climb up steps. I became alerted to BIXEPS and its new technology in early 2022. I could appreciate some of the testimonials that many participants experienced, seeing that I had similar issues with my legs. This inspired me to give BIXEPS a try for myself. The BIXEPS treatments have resulted in a notable improvement in my leg strength. I could feel beneficial effects after the 1st treatment, but longer-lasting improvements became noticeable around my 5th session. I completed the 12 sessions and am now enjoying the benefits of greater strength in my legs and confidence while walking that I did not have before. I am now motivated to undergo some strength training for my legs. I would not be surprised to see further benefits from my BIXEPS sessions. The sessions are painless and enjoyable due mainly to an attentive and caring staff. I am grateful to the QuantumTX team for this new treatment concept, as I am now experiencing new strength, confidence, and mobility in my legs. Wishing the best to QuantumTX and to those who utilize its service.



Zac
Shipping Operator

I went through a few surgeries to correct my deformed foot. I have lengthened my left foot Tendon Achilles, and corrected the bunion on my big toe. I was informed that it would take at least six weeks before I could start walking and exercising. I was introduced to BIXEPS after the surgery and followed through with the weekly sessions. In the 4th week, I felt significant strength on my left leg. I was able to put strength on my feet. By the 8th week, I gained enough strength to walk normally. The doctor advised that patients usually require at least 12 weeks to walk normally. BIXEPS had shortened my recovery period significantly.

CHINESE MEDIA COVERAGE

2023年5月24日 星期三
国大研发10分钟无痛疗程

联合早报



磁力疗法如练腿改善年长者行动能力

在使用仪器八个星期后，研究对象中有72%的人骨骼肌力量获得改善，身体的总脂肪和内脏脂肪也减少；85%参与者的运动能力有所提高。

赵世楚 报道
zhao@sp.com.sg
新加坡国立大学研究团队研发新仪器，可利用电磁脉冲信号刺激腿部肌肉，达到类似体育锻炼的效果，帮助身体孱弱、患有慢性疾病的年长者改善行动能力。

患有慢性病或腿脚不便的年长者只须每周把一只腿放入名为磁线圈和电脉冲系统（BIXEPS）的仪器中，等待10分钟，治疗全程无痛。

仪器采用专门电磁脉冲信号（proprietary pulsed electromagnetic field, 简称PEMF）模拟人体的运动状态，促进患者下肢的血液循环和新陈代谢，逐渐改善他们腿部的肌肉力量。

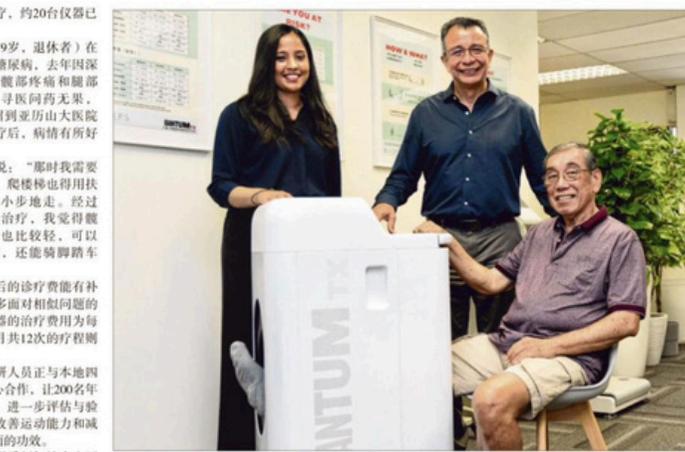
2020年1月初至2022年10月底，101名年龄在38岁至91岁的本地居民在社区研究实验中持续使用这个仪器。参与者平均年龄为65岁，其中87%的人有不同程度的行动障碍。

赵世楚和（79岁，退休者）在50岁前后患上糖尿病，去年因深静脉血栓导致腿部疼痛和腿部肿胀。他四处寻医问药无果。去年9月经介绍到亚历山大医院接受新仪器治疗后，病情有所好转。

他受访时说：“那时我需要拐杖才能走路，爬楼梯也得用扶手，一小步一小步地走。经过四次10分钟的治疗，我觉得腿部不痛了，脚也比较轻，可以走两三个小时，还能骑脚踏车了。”

他希望日后的诊疗费能有补贴，帮助到更多面对相似问题的同龄人。新仪器的治疗费用为每次50元，三个月共12次的疗程则定价500元。

此外，科研人员正与本地四家社区护理中心合作，让200名年长者参与研究，进一步评估与验证这款仪器在改善运动能力和减缓慢性疼痛方面的功效。



在起步公司QuantumTX临床研究员沙兰亚（Sharanya Venugobal）（左起）和国大医疗健康创新与科技研究院法兰柯（Alfredo Franco-Obrigón）副教授的帮助下，患者赵世楚在接受新仪器治疗后，行动能力有了大幅改善。（张忠庆摄）

2023年5月23日 星期二

新明日报

使用电磁脉冲治疗改善年长者行动功能

齐鲁 报道 luqu@sp.com.sg
新加坡国立大学研究团队发现，对于身体孱弱、不方便腿部的年长者来说，使用电磁脉冲信号刺激腿部肌肉，能达到类似锻炼的效果，增强肌肉力量，助年长者恢复行动力。

2020年1月初至2022年10月底期间，101位38至91岁的本地居民参与了一项由国大研究团队进行的社区研究。参与者平均年龄为65岁，87%的人在一定程度上行动不便。参与者在12周内，每周都接受10分钟的磁线圈电脉冲系统（BIXEPS）治疗。使用者每次将一条腿放入BIXEPS装置，装置会发送电磁脉冲信号，刺激腿部的肌肉细胞。

主要研究员法兰柯（Alfredo Franco-Obrigón）副教授说，经过12周的治疗后，85%的参与者就表现出行动功能上的改善，尤其是年长者。因此，相信电磁脉冲信号治疗能帮助年长者跳出“越虚弱越不敢锻炼、越不敢锻炼越虚弱”的恶性循环。

目前约有20台BIXEPS装置已在亚历山大医院和贺氏药房等10个合作地点推出，使用者每次需付50元治疗费。研究团队也在淡滨尼、惹兰峇株等四个社区关怀中心，选出200名年长者进行进一步试验。



Source: Channel News 8 TV 23 May 2023

医疗技术公司加强研发 稳步拓展

Lianhe Zaobao (9-Jun-2022)

周文龙 报道
cheuw@sp.com.sg

新冠疫情加快数码化的步伐，过去两年不少本地科技起步公司利用疫情这股顺风，筹集到更多资金进行扩展计划。

但同样作为起步公司，本地医疗技术公司QuantumTX这两年却面对许多逆风，不仅业务因疫情而连连中断，也难以取得投资者青睐。

QuantumTX首席执行官吴介文接受《联合早报》访问时有点无奈地说：“同人不同命，我们虽是起步公司，但在这起步生态环境中，投资者较喜欢金融科技、区块链或人工智能等更吸引眼球的行业，像我们这类以医疗器械为主的起步公司，扩展速度较慢，相对较不吃香。”

尽管如此，他坚持自己的理念，选择寻找志同道合的合作伙伴，加强产品研发并按着公司步伐稳步扩大。

他的坚持如今获得回报，QuantumTX今年入围阿里巴巴创业者基金/汇丰JUMPSTARTER 2022环球创业比赛，成为10强队伍之一。



本地医疗技术公司QuantumTX入围了今年的JUMPSTARTER 2022环球创业比赛，是比赛10强之一。右起为QuantumTX首席执行官吴介文、首席工程师李京泽，以及杨浦区医学院外科学系副教授法兰柯。（龙国雄摄）

2021年04月20日 星期二

联合早报



孙慧敏/报道
邵耀文/摄影

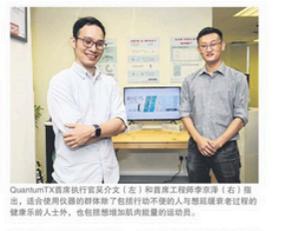
新技术协助激活肌肉能量

利用以往曾尝试过通过膝部不同治疗改善疼痛问题的，但效果并不理想。他受访时说：“那时我需要拐杖才能走路，爬楼梯也得用扶手，一小步一小步地走。经过四次10分钟的治疗，我觉得腿部不痛了，脚也比较轻，可以走两三个小时，还能骑脚踏车了。”

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吴介文说，BIXEPS仪器使用者一般是大腿肌肉萎缩，主要问题是无法将下肢肌肉的肌肉纤维之一。不过，使用者也



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AWARDS



by Ageing Asia



by U.S. National Academy Of Medicine



Winner of Healthcare Innomatch 2022



by Ageing Asia



Company of Good- 1 Heart by NVPC

1. IS BIXEPS SAFE?

BIXEPS is safe and reliable. It uses low frequency and low energy electromagnetic fields that are safe and non-ionising (100Hz–10kHz range). These signals have magnetic field strengths that are a thousand times less than conventional MRI equipment, and are at levels similar to those of everyday household appliances like hair dryers or shavers. BIXEPS devices meet international electrical and electromagnetic safety standards (IEC 60335–1, ICNIRP) and have been certified safe for use by Notified Body.

2. WILL I FEEL ANYTHING WHILE USING BIXEPS?

The magnetic fields produced by BIXEPS are deceptively mild, but effective. They are within the realm of the natural magnetic fields produced by the Earth, only about 20–30 times larger. Therefore, our fields modulate the same biochemical processes that are governed by the Earth's magnetic fields. Our proprietary technology lies in our ability to finely tune and deliver safe and uniformed BIXEP fields to the desired volumes of muscle.

Different users report having different sensations while using BIXEPS, namely: slight warmth in their muscles, a tingling sensation, slight cooling or numbness in their legs or other parts of the body. A large number of users also report having no perceivable sensation.

BIXEPS is safe and reliable, but should you experience pain or discomfort while using BIXEPS or at any time after, do stop and let your trainer, caregiver or doctor know.

3. CAN I USE BIXEPS IF I HAVE IMPLANTS?

Users with Active Electronic Implants like Pacemakers and Defibrillators should NOT use the BIXEPS device. Persons with passive implants who are able to go for MRI, can safely use BIXEPS.

Dental implants and modern passive implants are non-ferromagnetic and allowably used with much more powerful magnetic medical equipment like the MRI (that operates at field strengths a 1000x stronger than BIXEPS). Some older implants are “weakly magnetic” and are safe for MRI 6 weeks after surgery, these implants are safe to use with BIXEPS too. Users who are uncertain about the type of implants they have, and are unsure about using BIXEPS should consult with their doctors too.

4. DOES CLOTHING INTERFERE WITH BIXEPS FIELDS?

No. The fields are designed to safely and gently reach deep into your muscles to activate the mitochondria within cells. These fields are not affected by clothing and shoes.

5. WHY IS EACH BIXEPS SESSION ONLY 10 MINUTES?

Based on our scientific research, 10 minutes of exposure to BIXEPS fields yields optimal benefits. Shorter or longer exposures to the fields have been shown to render less optimum levels of mitochondria activity and therefore have less of an effect.

6. SHOULD I USE BIXEPS ONCE OR TWICE A WEEK?

More frequent BIXEPS training sessions can lead to greater gains, especially for users who are still mobile or active. While our community data shows that even once a week sessions provide significant fitness and health benefits, doubling the frequency can result in quicker adaptation and more pronounced improvements for most users.

Just like exercise, different levels of stimulation may be more suited to different persons at varying levels of fitness and health. Consult your provider to determine the best programme for you.

7. CAN I USE BIXEPS ON BOTH LEGS IN A SINGLE VISIT?

Certainly! Using BIXEPS on both legs in a single visit can be beneficial, with increased adaptation of the muscles that are directly exposed to our fields, and an increased level of myokines being released.

As with exercise, each 10-minute BIXEPS session causes our muscles to release a variety of regenerative and metabolic enhancing factors collectively known as Myokines. These signals travel throughout the body and trigger adaptation from non-exposed regions too. Users get fitter and healthier as their bodies adapt to the Myokine signals, but the rate and extent of improvements can depend on many factors like the user's existing health and lifestyle factors (e.g. diet and exercise). Activating both legs will result in an increase in more Myokines being released, further promoting muscle health and recovery.

But more is not always better. We recommend frail and immobile users to start with single-leg sessions of BIXEPS, to allow the body to adapt to this added form of BIXEPS training. Our research has shown that weekly single-leg activation programmes are beneficial.

8. WHY MUST I USE BIXEPS ON MY LEG AND HOW DOES THE REST OF MY BODY IMPROVE?

BIXEPS MitoCharge works by activating the mitochondria within muscle cells. This activation helps to increase energy production in muscles that supports muscle repair and regeneration. Also, activated muscles release signalling molecules, known as Myokines, that circulate throughout the body to encourage systemic benefits such as enhanced metabolism. We target the upper thigh region, which is often the largest mass of muscles for many users, to effect the most Myokines release per session and to encourage larger benefits on our health and well-being.

MORE FAQs



9. CAN I REPLACE MY REGULAR EXERCISE PROGRAMME WITH BIXEPS?

BIXEPS is NOT a replacement for physical exercise. Physical exercise gets our heart pumping and our blood flowing. Endorphins are released that elevate our mood. Physical activity also improves communication between our nerves and muscles. BIXEPS is designed to improve the efficiency of energy production in muscles that will in the long run facilitate and accelerate your journey towards a healthier and more active lifestyle.

10. WILL BIXEPS HELP MY MUSCLES TO BECOME BULKIER?

BIXEPS can help to increase your muscle mass. On average, users who are older and more weaker tend to see a greater increase in muscle mass. However, this increase in muscle mass will not cause your muscles to appear bulkier.

BIXEPS MitoCharge improves muscle energetics, encouraging muscle endurance and its ability to withstand fatigue, but does not directly translate into an increase in muscle size. In fact, fatigue-resistant muscle is often leaner than other muscle types. Because BIXEPS provides muscles with more energy, you might find yourself being able to train harder and longer, and experience faster recovery post-exercise. BIXEPS has been used by athletes to improve their recovery and training outcomes.

11. HOW LONG WILL I NEED TO CONTINUE USING BIXEPS?

While BIXEPS-related adaptations begin at the cellular level from the time your sessions commence, larger functional improvements may take time to build and consolidate, depending on individuals starting state, desired goals.

12. IF I STOP USING BIXEPS WILL MY MUSCLES WEAKEN AGAIN?

Just like exercise, once you stop your BIXEPS sessions, your body will recalibrate and adapt to your new lifestyle. We recommend using your new found fitness capabilities to increase your levels of physical activity, empowering your journey towards a more active and healthy lifestyle.



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MitoCharge Technology Powered by

QUANTUMTX

Rev 10



SCAN FOR BIXEPS
INFORMATION & ONLINE
BOOKING

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