



## ***Gym Tonic, a senior-friendly strength-training programme that reverses frailty, is extended to community-dwelling seniors***

***Lien Foundation's study shows close to half of the 'frail' elderly on Gym Tonic improved to become 'pre-frail'***

***Community-dwelling seniors can access Gym Tonic from eight locations across Singapore***

Singapore, 12 December 2017

1. A prescribed exercise routine over three months on software-enabled gym machines designed to be gentle on seniors can help reverse physical frailty in the elderly.
2. This was the key finding of a study of 396 seniors from nursing homes and senior care facilities who were put on Gym Tonic, the evidence-based strength-training programme conceived by the Lien Foundation together with health technology company, PulseSync.
3. Frailty is a common clinical condition in older adults that carries an increased risk for poor health outcomes, including falls, hospitalisation, disability, institutionalisation and mortality<sup>1</sup>. It is marked by weight loss, weakness (low grip strength<sup>2</sup>), exhaustion, slow walking speed and low activity. Anyone who meets three or more of these five criteria is characterised by researchers and the medical community as "frail". Those who have one or two of these symptoms are categorised as "pre-frail" and at high risk of becoming frail. People with none of these symptoms are considered "robust".
4. The 2017 study commissioned by the Lien Foundation evaluated seniors in nursing homes and senior care facilities who were on the Gym Tonic programme, which involved regular 30-minute strength-training exercises on the Gym Tonic machines twice a week.

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<sup>1</sup> <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3028599/>

<sup>2</sup> Poor grip strength is often a good predictor of functional disabilities.

After three months, 41 and 55 per cent of frail seniors in nursing homes and senior care centres respectively on this regime progressed to the pre-frail state.

5. Gym Tonic has also proven effective for community-dwelling seniors in the study – one in four of them improved from pre-frail to robust.

***Gym Tonic expands to the public***

6. Launched in 2015, Gym Tonic was largely deployed in nursing homes and senior care centres. Bolstered by the study results, the Foundation is extending the programme to more seniors living in the community. This brings the number of locations offering Gym Tonic to elderly community-dwellers to eight, they are: ActiveSG Gym@Our Tampines Hub, Bishan Community Club, Care Corner Senior Activity Centre (62B Toa Payoh), Man Fut Tong - Ho Yuen Hoe Senior Care Centre, Methodist Welfare Services Senior Activity Centre (Fernvale), St Hilda's Community Services, TOUCH Community Wellness Hub and Peacehaven Community Club. In addition, five more new community locations are being planned for next year. More than 1,400 community-dwelling seniors are expected to benefit from Gym Tonic. By 2019, Gym Tonic will grow to more than 32 locations, targeting to benefit an estimated 4,500 seniors in the community, nursing homes and eldercare facilities.

***Free Gym Tonic trials for 65 years & above***

7. From now till 14 February 2018, the Foundation is inviting 300 community-dwelling seniors aged 65 years old and above, to try out Gym Tonic. If selected, they will receive strength training under the supervision of qualified Gym Tonic trainers and taught tips on good nutrition. The trial will start in the first quarter of 2018 for a minimum of three-months in Bishan Community Club, Care Corner Senior Activity Centre (62B, Toa Payoh), Man Fut Tong - Hoe Yuen Hoe Senior Care Centre and Methodist Welfare Services Senior Activity Centre (Fernvale). Seniors who are keen to participate can register their interest at [www.gymtonic.sg/signup/](http://www.gymtonic.sg/signup/). Participants need not pay for the trial.

***Important to fight against frailty***

8. As Singapore ages, a rising number of seniors will show signs of frailty, which could lead to increased risk of poor health outcomes. It is estimated that close to half of

community-dwelling elderly in Singapore is frail or pre-frail<sup>3</sup>. This means higher care needs and risk of isolation as well as increased healthcare expenses for this group.

9. “Early action to fight frailty in the elderly must be a priority for an aging population like Singapore,” said Mr Lee Poh Wah, CEO of Lien Foundation. “Gym Tonic has shown that physical decline can be reversed with strength training. With timely intervention, we can reduce the loss of functions experienced by seniors and lessen the growing strain on long-term care resources. Strength training must be integral to the prevention, treatment, and rehabilitation strategies for the care of our seniors. Many of those on Gym Tonic have shared how they feel rejuvenated in their strength and spirits, like our oldest participant, a 97-year old lady from Care Corner. They are proof that it’s never too late to start.”

#### ***Gym designed for seniors***

10. Gym Tonic currently has 2,000 active users on its exercise programme. (See fact sheet for more details). At present, there are 25 Gym Tonic sites up and running. They are equipped with pneumatic gym equipment that gently builds the elderly’s core muscle groups. It is backed by smart software built from proven Finnish research which tracks the seniors’ progress supervised by Gym Tonic-trained staff.
11. “Gym Tonic is not only about exercise, it’s also about changing behaviour and lowering the barriers to get our elderly into the gym and see the difference it can make to their quality of life,” said Ken Tan, Managing Director of PulseSync, the project architect behind Gym Tonic. “As we expand Gym Tonic beyond nursing homes and senior care facilities and into community locations, we see the gyms becoming friendly and welcoming places for social interaction as well as exercise. It’s a place where the elderly living in the community can come together, motivate each other to do simple, short and safe exercises regularly, and celebrate too, when they attain goals.”

#### ***Exercising in gyms give better results***

12. The use of physical spaces or gyms for strength training appears to give users an advantage over exercises done at home. A comparison of the Gym Tonic 2017 study with a recent Finnish report by the University of Jyväskylä on home-based strength-training

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<sup>3</sup> Based on the Well Being of the Singapore Elderly (Wise) study, which found that out of 2,100 Singaporeans adults aged 60 and above, 5.7 per cent were frail and 40.1 per cent were pre-frail.

exercises showed that Gym Tonic exercises outperformed those done at home by three to five times. This underscores the difference physical gym sites and supervised strength training can make with their guided exercises and tracked progress, offering greater impact. Therefore, to give more seniors the chance to reverse their decline, more locations and such gyms will be needed in aging Singapore.

13. In the largest nationally representative study on physical frailty in community-dwelling elderly conducted in Singapore, nearly half of the 2,100 adults aged 60 and above were found to be frail or pre-frail. Conducted by a team of researchers from the Institute of Mental Health headed by Professor Chong Siow Ann, the Well Being of the Singapore Elderly (Wise) study revealed that 5.7 per cent of its respondents were frail and 40.1 per cent were pre-frail.
14. Based on current population<sup>4</sup>, this suggests there could be close to 45,000 frail and about 313,000 pre-frail older persons - making it a total of nearly 360,000 seniors who could potentially gain from Gym Tonic's strength training.

#### ***Tonic for common health problems***

15. The elderly from Care Corner Seniors Services are among the fortunate ones to benefit from the Gym Tonic gym located in the senior activity centre at Block 62B in Toa Payoh. 47 of them recently 'graduated' from participating in a 12-week Gym Tonic programme on December 8. 97 year-old Mdm Lau was among this successful cohort who celebrated their exercise achievements with better health. She had a fall from an accidental slip that hurt her back and weakened her balance and legs. After completing Gym Tonic, her physical condition improved and she regained her muscle strength and balance. Mdm Lau said, "I am now able to resume my daily walks. I can also meet with my friends at the coffee shop. I am so glad Gym Tonic has helped me to recover so quickly."
16. Care Corner is opening up its centre for more seniors to join the Gym Tonic programme. Ms Grace Lee, Group Director, Care Corner Seniors Services said, "Many of our elderly clients have been transformed by Gym Tonic. We hope more seniors, especially those in Toa Payoh, will come and find out for themselves how simple strength-training exercises

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<sup>4</sup> Based on [Population Trends 2017](#), there are about 780,000 persons aged 60 years and above (Table A1.3), which means we may have 44,460 frail and 312,780 pre-frail older adults, totalling 357,240.

can give them a better quality of life. About 60 to 70 per cent of those who completed Gym Tonic have come back for more, and they are now on the maintenance programme.”

### ***Reversing decline, regaining strength***

17. Gym Tonic participants who went through the 30-minute, twice-a-week, 12 weeks of progressive training demonstrated positive results in the recent 2017 Gym Tonic study.
  - The 396 participants were examined before and after the exercise period based on five factors of the widely used ‘FRIED Frailty’ scale, i.e. Weight loss, weakness, exhaustion, walking speed, and physical activity. Their average age was 72 years.
  - For those who fell into the “frail” category, 41% of the nursing home residents and 55% of those at senior care centres improved to “pre-frail” status.
  - For those who were deemed as “pre-frail”, 9% of nursing home residents, 10% from senior care centres and 27% from senior activity centres moved up to “robust” status.  
*(See Annex for more details of the findings)*
  
18. Similar improvements were seen in an independent small group study of 12 community-dwelling seniors who participated in a 12-week Gym Tonic programme at PulseSync’s Ageility Lab. They reported stronger muscle strength, higher mobility and flexibility that helped them better cope with daily activities like crossing the road, toileting or climbing the stairs. Four out of the seven pre-frail members of the group progressed to robust status.

### ***Frail no more***

19. 69 year-old Madam Chin Nyok Chu is one of them. Before she started on Gym Tonic, she complained of backache, poor balance and weak limbs. She had to use a walking stick and could not walk long distances. At home, she needed help to even open a can of food.
  
20. After 12 weeks of strength-training exercises, Mdm Chin has no more pain in her legs. She no longer needs a walking stick and walks more confidently. She can walk up to 1.5km at one go, twice as far as before. She can now stand up for a longer period of time. She has also lost weight, looks and feels better and has just returned from a holiday in China. *(Read more such stories in Annex C and watch how other Gym Tonic participants rediscovered their strength at [www.gymtonic.sg](http://www.gymtonic.sg))*

21. When the elderly regain their strength and functional abilities, they experience more than just physical gains. Self-confidence, social connections and autonomy are other equally important benefits. Fighting just physical decline would overlook cognitive, social and psychological frailty that affects wellbeing too. Lifestyle, diet and nutrition are also key factors that the elderly can work on, as they discover that living with frailty is not an inevitable or irreversible part of growing older.

*Annex A – Factsheet on Gym Tonic*

*Annex B – The Gym Tonic process and exercise machines*

*Annex C – My Gym Tonic story: Highlights of Gym Tonic users*

*Watch Gym Tonic – [www.gymtonic.sg](http://www.gymtonic.sg)*

*Download pictures – <https://tinyurl.com/gymtonic2017>*

*Download videos – <https://tinyurl.com/GymTonicVideos>*

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#### **About Lien Foundation**

**[www.lienfoundation.org](http://www.lienfoundation.org)**

The Lien Foundation is a Singapore philanthropic house noted for its model of radical philanthropy. It breaks new ground by investing in innovative solutions, convening strategic partnerships and catalysing action on social and environmental challenges. The Foundation seeks to foster exemplary early childhood education, excellence in eldercare and effective environmental sustainability in water and sanitation. It supports innovative models of eldercare, advocates better care for the dying and greater attention on dementia care.

Since 2005, the Foundation has harnessed IT for capacity building and enhanced the quality of care in healthcare nonprofits like hospices and nursing homes, extending this to person-centred care in long-term eldercare facilities in 2016. To advocate better nursing home care in Singapore, the Lien Foundation commissioned a study in 2016 on what a habilitative nursing home model for enhanced wellbeing would cost. It also released a report featuring the voices of 50 nursing home and eldercare experts that revealed why Singapore’s nursing homes need a new narrative. In 2017, the Foundation showed the reality of life in a nursing home with its social documentary, “Anita’s Nursing Home Stay”. More recently, it revived plans for Jade Circle as a new model of nursing home care and day centre for persons of dementia, focusing on promoting their autonomy, choices and dignity.

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## ANNEX A: GYM TONIC FACTSHEET

### 1. Who is behind Gym Tonic

Singapore

1. Conceived by the Lien Foundation
2. Project architect: PulseSync Pte Ltd

Finland

3. Research adviser: Kokkola University Consortium Chydeniu, University of Jyväskylä

### 2. About Gym Tonic

Since the launch of Gym Tonic in 2015 with 10 VWO nursing homes and senior care centres, Gym Tonic has now expanded to 27 sites across Singapore (see Table under item 3 below for details). 51 therapists, fitness instructors and managers have been trained in Finland by the University of Jyväskylä. There are 2,000 active elderly users on the Gym Tonic programme.

<p><b>a. What it is</b></p>	<p>Gym Tonic is an evidence-based, senior-friendly strength-training programme that improves the functional abilities of older persons with advanced gym equipment and software.</p> <p>What sets Gym Tonic apart is its simplicity, and the targeted, measurable, trackable assessment of the elderly person’s progress in the structured exercise programme.</p> <p>The key components of Gym Tonic are:</p> <ul style="list-style-type: none"> <li>– A set of six air-powered (pneumatic) elderly-friendly exercise equipment for strengthening core muscle groups (see Annex B)</li> <li>– Measurement instruments and assessment protocols to review physical functions and areas such as cognitive performance and functional status<sup>1</sup></li> <li>– Training and research support</li> <li>– A state-of-the-art software system and data analytics.</li> </ul> <p>These work together to make Gym Tonic “S.M.A.R.T” – Safe, Measurable, Automated, Rehabilitative and Targeted.</p>
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<sup>1</sup> Gym Tonic uses Welmed and interRAI Home Care (HC) scales as its assessment protocol. Welmed is a comprehensive measurement of the elderly’s physical functions. It aims to provide evidence-based information using the best in measurement

<p><b>b. Programme for community-dwelling seniors (see Annex B)</b></p>	<p>1. Structured training</p> <ul style="list-style-type: none"> <li>– A “strength booster” 12-week progressive strength-training programme under the supervision of qualified Gym Tonic trainers</li> <li>– Two sessions per week</li> <li>– 30 minutes each session</li> </ul> <p>2. Maintenance</p> <p>After the structured training:</p> <ul style="list-style-type: none"> <li>– The seniors are encouraged to continue their exercises independently on the Gym Tonic machines twice a week on a DIY basis, or</li> <li>– They may choose to exit the Gym Tonic programme. They will be advised to maintain as active a lifestyle as possible</li> </ul> <p>3. Re-assessment</p> <ul style="list-style-type: none"> <li>– It is recommended that a re-assessment of their functional abilities be made 6 months after the seniors have completed the 12-week structured training</li> <li>– If needed, they will be put back on the structured training</li> </ul>
<p><b>c. Number of active elderly users on the Gym Tonic programme</b></p>	<p>2,000</p>
<p><b>d. Who can be a Gym Tonic trainer</b></p>	<p>Physiotherapists, occupational therapists, fitness instructors, and people with a sports background</p>
<p><b>e. Total number of Gym Tonic trainers</b></p>	<p>51</p>
<p><b>f. Estimated number of Gym Tonic trainers to be trained in 2018<sup>2</sup></b></p>	<p>50 to 60 to be trained in Singapore Of these, 20 will be sent for advanced training in Finland.</p>

### 3. Gym Tonic Locations

<p><b>I. Gym Tonic sites – total of 27</b></p>	
<p><b>a. Day care/rehabilitation centres - 13</b></p>	<ol style="list-style-type: none"> <li>1. AWWA Rehab and Day Care</li> <li>2. Bedok Day Centre</li> <li>3. Kwong Wai Shu Hospital</li> <li>4. Mun Fut Tong - Ho Yuen Hoe Senior Care Centre<sup>3</sup></li> <li>5. NTUC Health Silver Circle (Serangoon Central)</li> <li>6. NTUC Health Silver Circle (Ci Yuan)</li> <li>7. PCF Sparkle Care @Yew Tee</li> <li>8. Singapore Cancer Society</li> <li>9. St Andrew’s Community Hospital</li> <li>10. St Luke’s Eldercare (Clementi)</li> <li>11. St Luke’s Eldercare (Hougang)</li> <li>12. St Luke’s Eldercare (Tampines)</li> <li>13. St Luke’s Hospital</li> </ol>

<sup>2</sup>From 2018, a basic two-day training programme will be conducted in Singapore to grow the pool of trainers equipped with the knowledge and use of Gym Tonic, its equipment and software.

<sup>3</sup>Gym Tonic was started in Mun Fut Tong - Ho Yuen Hoe Senior Care Centre in July 2017 and will be expanded to seniors from the public in 2018.



<b>b. Residential care facilities</b> - 8	14. Apex Harmony Lodge 15. Assisi Hospice 16. Banyan Home @Pelangi Village 17. Bethany Methodist Nursing Home 18. Man Fut Tong Nursing Home 19. Peacehaven Nursing Home <sup>4</sup> 20. St Andrew's Nursing Home 21. St Joseph's Home
<b>c. Community</b> - 6	22. ActiveSG Gym @Our Tampines Hub 23. Bishan Community Club ( <i>upcoming</i> ) 24. Care Corner Senior Activity Centre - Toa Payoh Blk 62B 25. Methodist Welfare Services Senior Activity Centre - Fernvale 26. St Hilda's Community Services 27. TOUCH Community Services Wellness Hub ( <i>upcoming</i> )

### II. Details of Gym Tonic sites – for community-dwelling seniors

1. Age range varies across the 8 Gym Tonic sites. – starting from 55 years old or older
2. Joining fees vary from centre to centre and range from less than \$10 to 50 per month.
3. Fee for assessment of physical condition ranges from \$30 to \$80.
4. An estimated 1,400 elderly community dwellers will benefit from the Gym Tonic programme by end-2018.

Gym Tonic Community Sites	Open to public – when
<b>1. ActiveSG Gym @Our Tampines Hub</b> 51 Tampines Ave 4	4Q 2017
<b>2. Bishan Community Club</b> 51 Bishan Street 13	2018
<b>3. Care Corner Senior Activity Centre - Toa Payoh</b> Blk 62B Lor 4 Toa Payoh #02-121	Started Gym Tonic in Sep 2016. Expanded to seniors from the public in 4Q 2017
<b>4. Methodist Welfare Services Senior Activity Centre - Fernvale</b> Blk 473a Fernvale Street #01-17	July 2016
<b>5. St Hilda's Community Services</b> Blk 11 Jalan Batu	September 2016
<b>6. TOUCH Community Services</b> Blk 433 Ang Mo Kio Ave 10	3Q 2018

<sup>4</sup>Gym Tonic was started in Peacehaven Nursing Home in 2015 for nursing home residents and expanded to seniors from the public in the 4<sup>th</sup> quarter of 2017 under its Community Club.

#### 4. Highlights of the Gym Tonic 2017 study

<b>What the study is about</b>	
<p>The study aimed to assess the effectiveness of Gym Tonic by tracking participants' progress after a 12-week structured programme. It showed the potential of Gym Tonic in reversing frailty. It also revealed high rehabilitation potential for elderly living in residential facilities.</p> <p>Frailty as measured by the Fried frailty phenotype is based on five criteria:</p> <ul style="list-style-type: none"> <li>– Weight loss</li> <li>– Weakness</li> <li>– Exhaustion</li> <li>– Slow walking speed</li> <li>– Low physical activity</li> </ul> <p>People with none of these symptoms are considered 'robust'; those with one or two of these symptoms are categorised as 'pre-frail'; those with three or more symptoms would fall under 'frail'.</p>	
<b>Number of Gym Tonic centres that participated in study</b>	18 (3 senior activity or wellness centres, 9 day care/rehabilitation centres & 6 residential care facilities)
<b>Number of Gym Tonic elderly users assessed</b>	396
<b>Profile of subjects in study</b>	Average Age: 72
<b>Duration</b>	Participants attended the Gym Tonic programme regularly for 12 weeks, twice a week
<b>Key findings</b>	
<ol style="list-style-type: none"> <li>1. Nursing home (NH) residents                             <ul style="list-style-type: none"> <li>– 46% of NH residents were assessed to be "frail" before joining Gym Tonic. Of these, 41% improved to become "pre-frail" after completing the 12-week programme.</li> <li>– 52% of NH residents were assessed to be "pre-frail" before joining GT. Of these, 9% improved to become "robust" after completing the 12-week programme.</li> </ul> </li> <li>2. Senior Care Centres (SCC) seniors                             <ul style="list-style-type: none"> <li>– 28% of SCC seniors were assessed to be "frail" before joining Gym Tonic. Of these, 55% improved to become "pre-frail" and 3% "robust" after completing the 12-week programme.</li> <li>– 66% of SCC seniors were assessed to be "pre-frail" before joining the programme. Of these, 10% improved to become "robust" after completing the 12-week programme.</li> </ul> </li> <li>3. Senior activity centres (SAC) seniors                             <ul style="list-style-type: none"> <li>– 67% of SAC seniors were assessed to be "pre-frail" before joining Gym Tonic. Of these, 27% improved to become "robust" after completing the 12-week programme.</li> </ul> </li> <li>4. After their Gym Tonic programme, the nursing home residents showed considerable gains in their lower limb muscle strength. Their new level of strength was almost the same as seniors residing in the community, meaning there was a possibility of potential discharge from nursing home care, if not for financial or social factors that kept them under residential care.</li> <li>5. Muscle strength was found to have improved significantly by 15-20% on average, though there was little change to muscle mass. Muscle strength affects the older person's mobility (e.g. ability to walk independently without mobility aid), and ability to perform other activities of daily living such as getting up from a chair and climbing the stairs</li> <li>6. The largest improvements tended to occur in the first 12 weeks of exercise.</li> </ol>	

7. Better performance was seen across most functional tests (e.g. Five Times Sit to Stand, Walking Speed). These improved scores can be translated into improved daily functioning,<sup>5</sup> and better quality of life.
8. The seniors on Gym Tonic demonstrated improved grip strength – which is a common indicator and predictor of functional disability, healthcare utilisation, loss of independence, and even death. Their improved performance meant lower risks of such health complications.

## 5. Project Investment

<b>Total investment by Lien Foundation to-date</b>	\$3.52 million
<b>Cost per centre</b>	Average of \$200,000 (Includes costs of gym equipment, assessment equipment, software, training, implementation and maintenance)

## 6. Gym Tonic milestones

<b>Launch of Gym Tonic with 12 VVO nursing homes/senior care centres</b>	April 2015
<b>Gym Tonic expands to the community, bringing the total number of committed Gym Tonic locations to 27 (of which 25 are up and running)</b>	Dec 2017
<b>Gym Tonic expands to more than 32 locations, targeting to benefit an estimated 4,500 seniors in nursing homes, eldercare facilities and the community</b>	2019

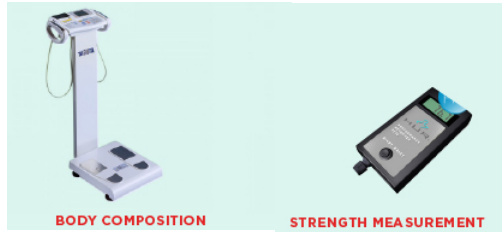
<sup>5</sup> As measured by the following interRAI HC scales: Activities of Daily Living-Hierarchy (ADL-H) and Instrumental Activities of Daily Living (IADL)

# Annex B1: The Gym Tonic Process - Community-dwelling Seniors

## Pre-Assessment

Trainers conduct a 30-minute assessment to evaluate the senior's current health and physical function status.

The assessment includes physical measurements & functional tests such as body composition, grip strength, muscle strength and a short physical performance test.



## Measurement

Using specialised equipment like the Body Composition Analyzer and Performance Recorder, the seniors are assessed on their isometric muscle strength, metabolic rate, fat and muscle composition. The Gym Tonic system will present a preliminary assessment report to show where they stand compared to other seniors in their age group, their potential, and highlight areas of functional weaknesses.

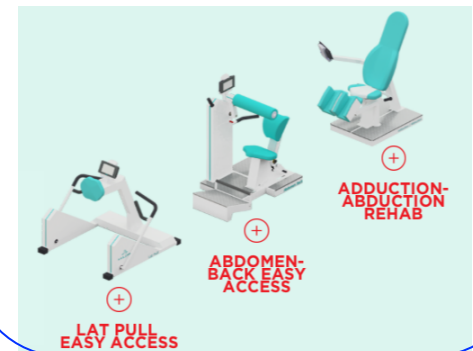


## 12 weeks structured training

The seniors will be put on a "strength booster" 12-week, 30-minute twice a week progressive strength-training programme on the Gym Tonic machines under the supervision of qualified trainers.

## Exercise and Intervention

Before they start their workout, the seniors' vital signs are taken to ensure their fitness. They then sign into Gym Tonic with their personal RFID cards. Their recommended routine, which will have been pre-programmed in the machines, will guide them to complete the exercise repetitions and circuit. Their exercise performance is automatically captured and tracked in the IT system. (e.g. achieved, underperformed or overperformed)



## Analysis

Through the Gym Tonic system, all assessment and measurement data are made anonymous, and captured in a repository for evidence-based research.

The research team at the University of Kokkola will analyse the data and provide their findings to help the GT team fine-tune the programme and also derive more effective interventions.



## Re-assessment

It is recommended that a re-assessment be made 6 months after the completion of the structured training and if needed, the seniors will be put back on the structured training.

## Maintenance

Thereafter, the seniors are encouraged to continue their exercises independently on the Gym Tonic machines twice a week, on a DIY basis. They can also choose to exit the programme but will be advised to maintain as active a lifestyle as possible.

## Post-Assessment

A post-assessment of the health and physical function status of the seniors will be conducted after the 12 weeks of structured training to review their progress.

## ANNEX B2: Gym Tonic Equipment

All Gym Tonic gyms will have a basic set of 6 air-powered (pneumatic) exercise machines with the following features:

- Seats that automatically adjust based on user's saved preferences
- SMART Touch (RFID) touchscreen
- Range limiters to pre-set a safe range of motion
- Link to a performance recorder that measures isometric force output



### 1. Leg Extension / Curl

- Dual function machine
- Designed to exercise and strengthen the hamstring and quadriceps muscles used for sitting, standing and climbing stairs



### 2. Leg Press

- Back support is adjustable and the elderly can choose from different starting positions
- Designed to exercise and strengthen leg muscles used for sitting, standing and climbing stairs



### 3. Abdomen / Back

- Features reversible back support and reversible roller to make it easy for elderly to enter and exit
- Dual function machine for abdominal and back muscle exercises
- Helps to keep the body more stable and balanced, as well as strengthen the spine



### 4. Chest Press

- Wheelchair-friendly
- Both lever arms move independently
- Designed to strengthen upper body muscles, especially chest muscles
- Helps the elderly better perform tasks such as pushing a grocery trolley/ shopping cart



## 5. Adduction-Abduction

- Dual function Adduction / Abduction machine
- Designed to provide a comfortable and easy way of exercising and strengthening the adductor muscles on the inner thighs and the abductor muscles on the outside of the hips.
- Helps improve stability/balance when walking, and in one-legged movements. As it also exercises the pelvic floor muscles, it will help improve bladder and bowel control and can reduce/ stop leakage of urine and bowel motions.



## 6. Lat Pull

- Wheelchair-friendly
- Designed to strengthen back, shoulder and upper body muscles with a multi-joint exercise that involves movement at the elbows, shoulders and scapula
- Helps strengthen muscles needed to handle day-to-day activities like reaching out, lifting and carrying groceries.



## **ANNEX C: MY GYM TONIC STORIES**

### **Elderly users of Gym Tonic at Care Corner-Toa Payoh Blk 62B**



**Mdm Lau Soon Siang**  
**97 years old**  
**Occupation: Homemaker**  
**Spoken Language: Teochew, Mandarin**

Mdm Lau has an active lifestyle and is a regular participant of the activities at the Senior Activity Centre. She had a fall that hurt her back and weakened her physically. Her balance and muscle strength became poorer. After completing the Gym Tonic programme, Mdm Lau improved significantly. She has achieved an average 20% improvement in her lower limbs muscle strength and has better balance. She is able to resume walking to the coffee shop to meet her friends. At 97 years old, Mdm Lau is independent and still going strong. She is currently on the Gym Tonic maintenance programme.



**Mdm Choa Choi Huei**  
**74 years old**  
**Previous occupation: Food hawker**  
**Spoken language: Mandarin, Hokkien**

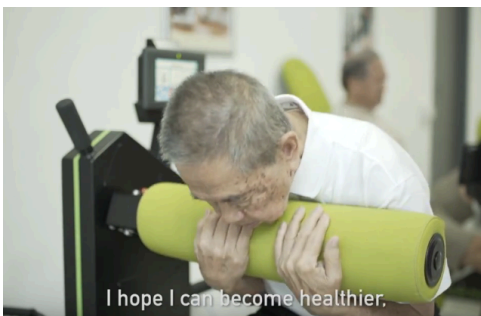
Mdm Choa was initially apprehensive of the gym equipment. She was not used to the machines and thought she might get electric shocks. She was finally persuaded to try Gym Tonic by the trainer who told her all about the benefits of strength training. After the programme, Mdm Choa no longer experiences pain in her knees, and she is now able to walk longer distances. She is currently on the Gym Tonic maintenance programme. Convinced of the Gym Tonic's benefits, she has now become its 'ambassador' and eagerly invites her friends and neighbours to join in. She also helps the trainers by volunteering to teach the elderly who are getting started on Gym Tonic.



**Mr Huang Kee Sang**  
**67 years old**  
**Previous occupation: Carpenter**  
**Spoken language: Mandarin, Malay, Hokkien**

Called 'The Rock' by the trainers at Care Corner's Gym Tonic, Mr Huang wishes to get his muscles 'firm'. He is currently on the Gym Tonic maintenance programme, having completed his first few months of training with impressive progress in his leg muscle strength. He now has better balance and is steadier when performing the "sit-to-stand" test. He is now able to put on long pants without support, and also finds it easier to clean his feet while he bathes. Mr Huang often jokes about joining a male beauty pageant after his Gym Tonic training.

### Elderly Gym Tonic users - PulseSync's Ageility Lab small study



**Mr Lock Meng Swee**  
**80 years old**

80-year-old Lock Meng Swee is an active volunteer of more than 5 years at Tzu Chi Rehabilitation Centre. He helps dispense medicine as well as assists the physiotherapists on visits to patients' homes. When he joined the Gym Tonic programme, he had high blood pressure, muscle loss, and poor balance. After 12 weeks of Gym Tonic, his stamina, strength and balance have increased greatly. His blood pressure also dropped from a high of 179/80 to 138/88. This reduces his risk of chronic diseases. His sleep has also improved and he is more energetic. He is able to contribute more as an assistant to the physiotherapist at Tzu Chi due to the training from Gym Tonic.



**Mr Lee Soo Jin 70 years old**  
**Mdm Patricia Chan, 69 years old**

Lee Soo Jin and Patricia Chan were training to do the Milford track in New Zealand, which is a 54km hike over 4 days. Soo Jin wanted to improve muscle endurance and Pat hoped to increase her stamina. After 12 weeks of Gym Tonic, they went to New Zealand and successfully completed the 54km Milford track. Their leg strength and endurance have doubled; Pat's walking speed has increased and Soo Jin's balance and stability have also improved greatly.



Go to <http://www.gymtonic.sg> for more video testimonies