

Movement & Exercise As Medicine

Chew Weng Keong (Physiotherapist)

Movement & Strength Coach

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Chew Weng Keong (Physiotherapist), Movement & Strength Coach

23 years serving the Wellness, Healthcare & Biomedical Research industries.

ASPIRE55
Asia's First Social Health Club for Over 50s



Current Roles

- Movement, Strength & Conditioning Coach and Physio
- Head of Training and Programs, ASPIRE55

Education

Physiotherapy, Nutrition & Health Promotion, Biochemistry

Lifelong Learning

- “Biomechanics Trainer” by Biomechanics Education, UK.
- “Exercise is Medicine Singapore” certified.
- “Health Coaching for Older Adults” by NTU.
- “Senior Strength & Conditioning” by Academy of Sport Speed Australia.

Key Agenda

1. Why Movement with Exercise is Medicine.
2. A Balanced Approach to Exercise to Live Well.
3. Find your Why.
4. How often to exercise?





TRIVIA TIME

BYU Management Society

Fun Fact

Number of muscles in our human body?

A: ~ 640

B: ~ 540



BYU Management Society

Fun Fact

Number of muscles in our human body?

A: ~ 640



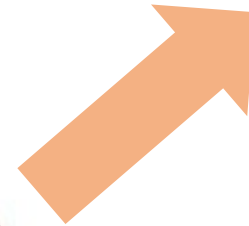
BYU Management Society

Key Agenda

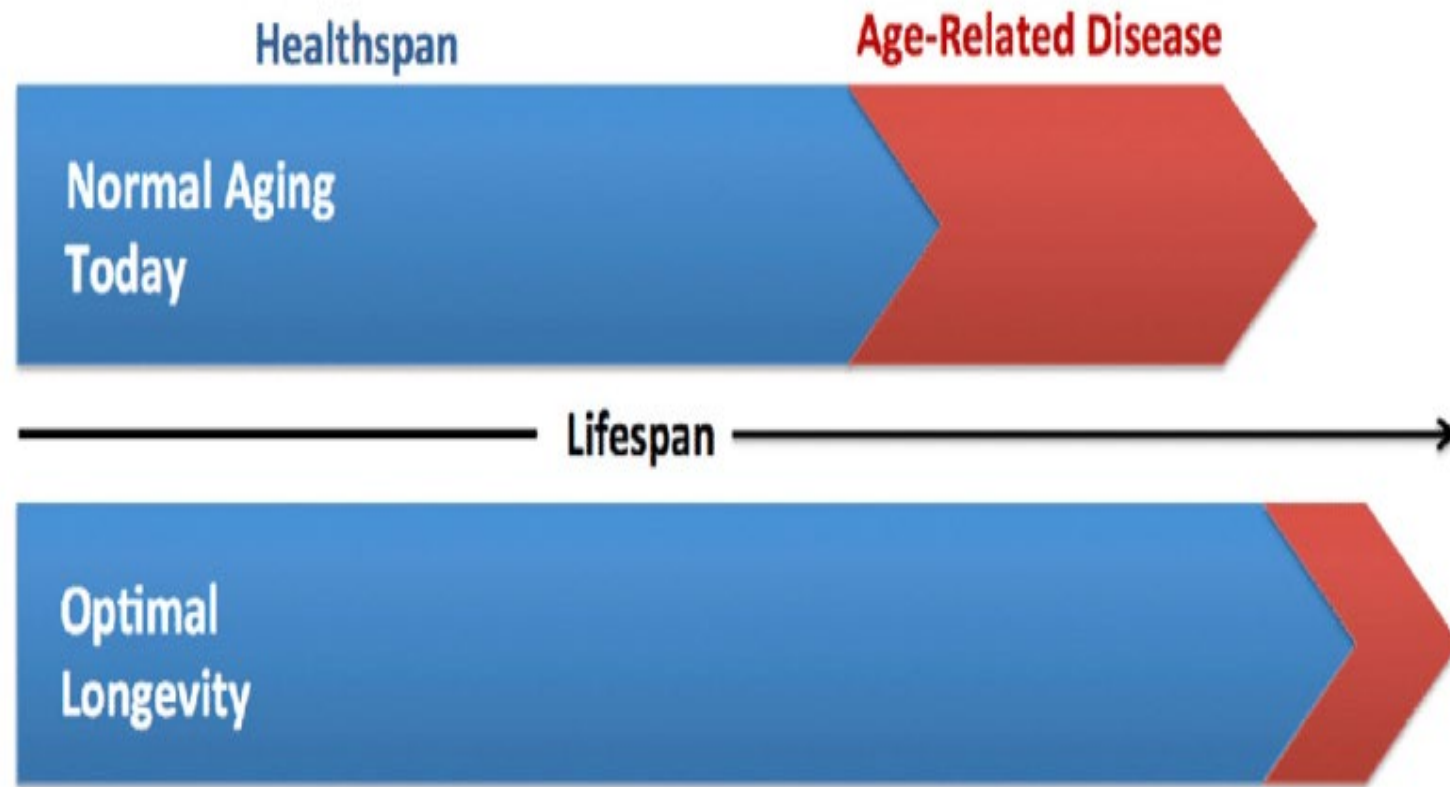
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Our traditional outlook of the human lifespan



Healthspan vs Lifespan



Physical Inactivity: A Leading Risk Factor for Chronic Diseases



Health Topics ▾

Countries ▾

Newsroom ▾

Emergencies ▾

Home / News / Nearly 1.8 billion adults at risk of disease from not doing enough physical activity

Nearly 1.8 billion adults at risk of disease from not doing enough physical activity

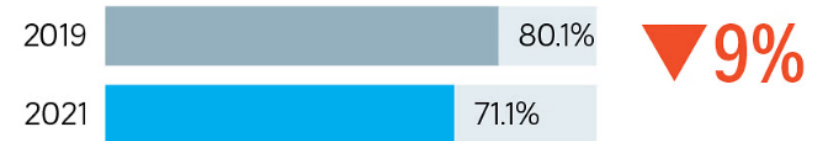
26 June 2024 | News release | Geneva | Reading time: 2 min (636 words)

Total physical activity

% of Singapore residents



Who engaged in at least 150 minutes of physical activity



Sources: NATIONAL POPULATION HEALTH SURVEY 2021, MINISTRY OF HEALTH

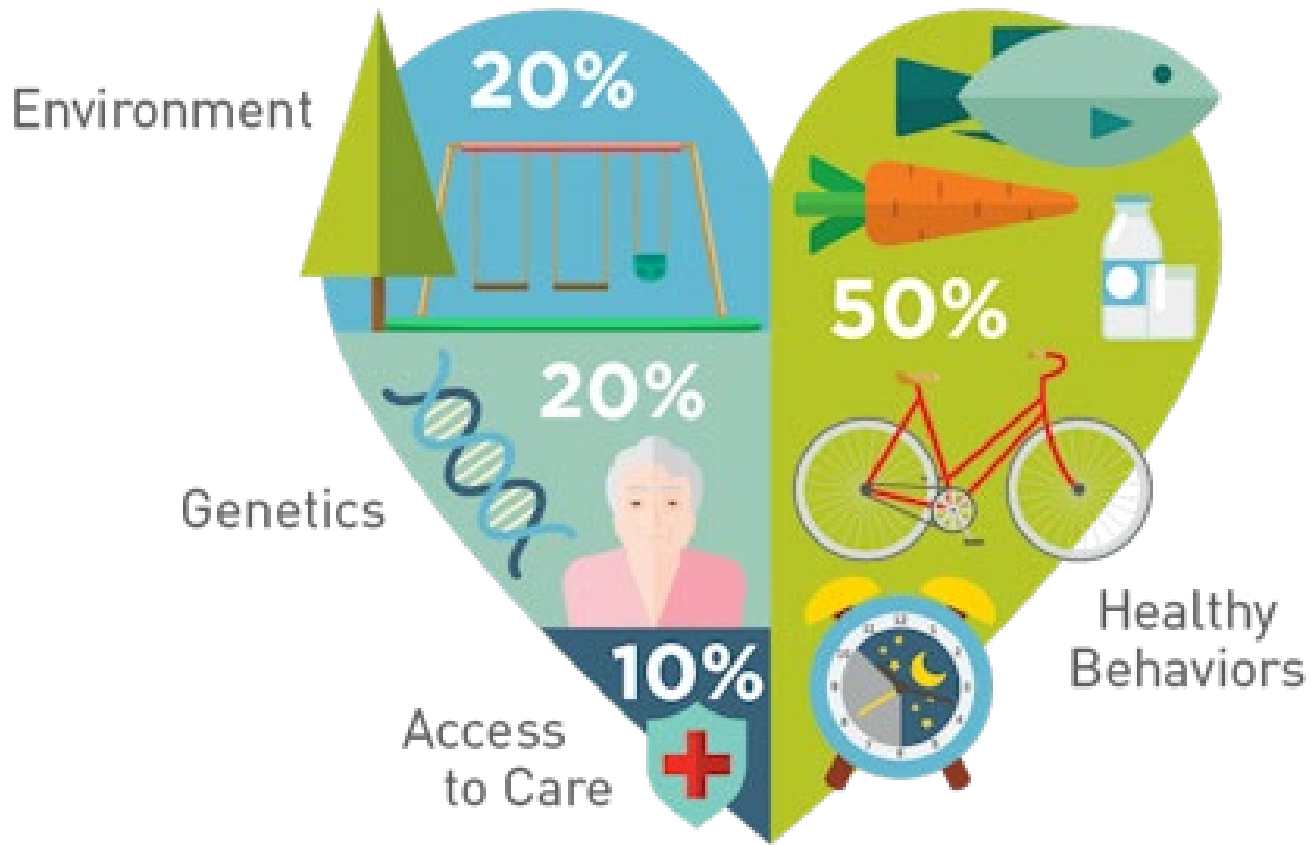
STRAITS TIMES GRAPHICS

Physical Inactivity

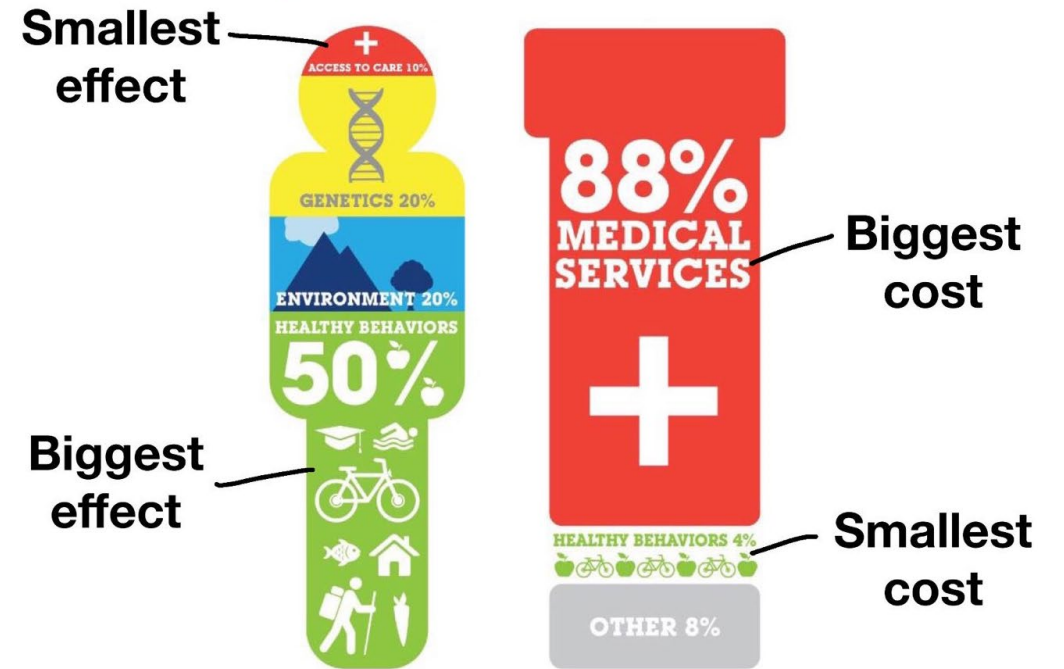


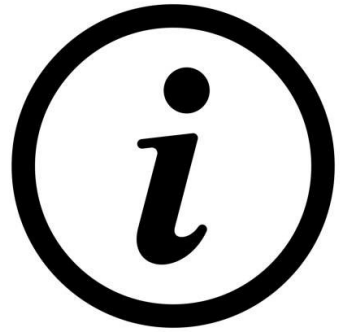
What Makes Us Healthy!

FACTORS



EFFECT & COST





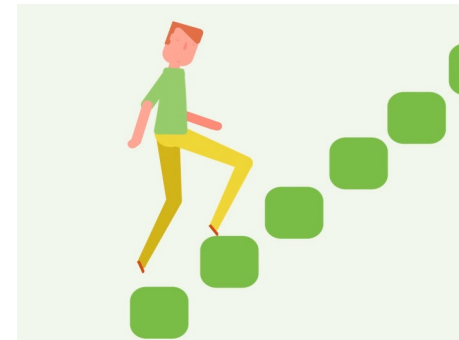
Why movement & exercise are important?



Importance of Movement & Exercise

To allow you to perform your activities of daily living.

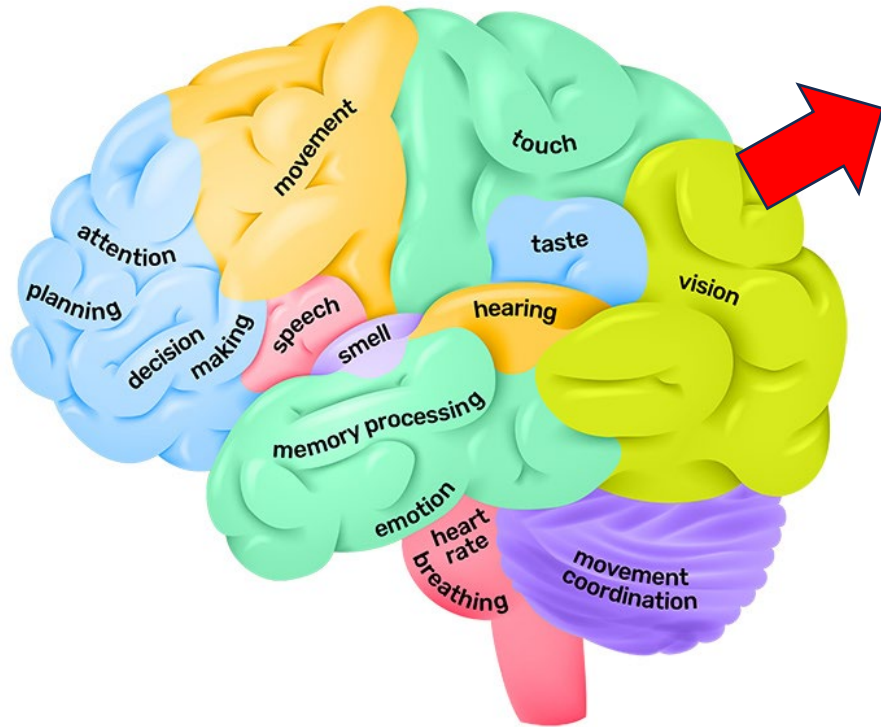
Daily Movement



Functional Activities



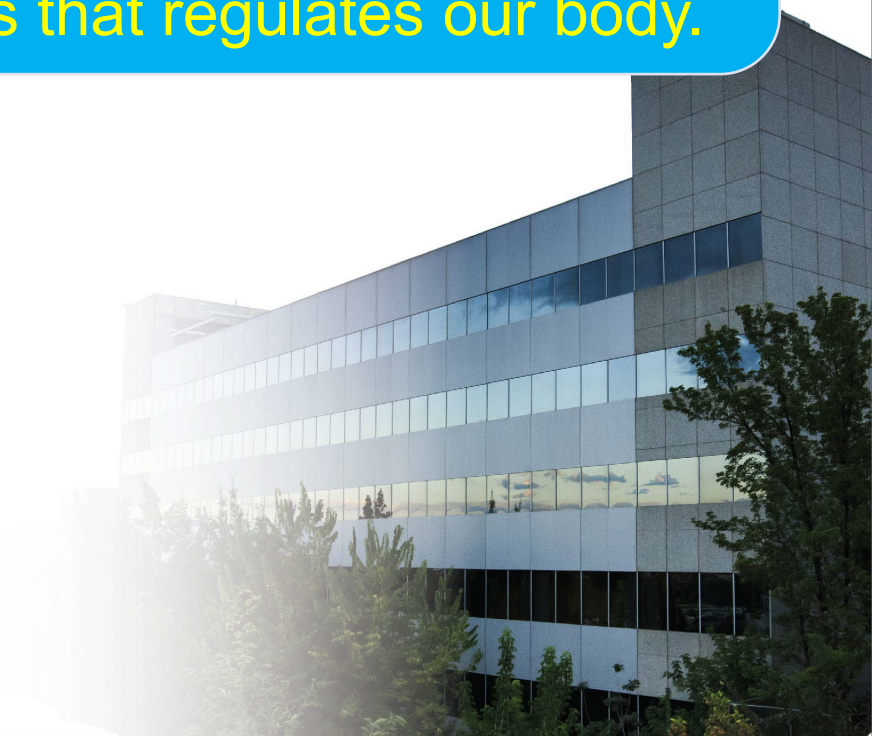
Our Brain



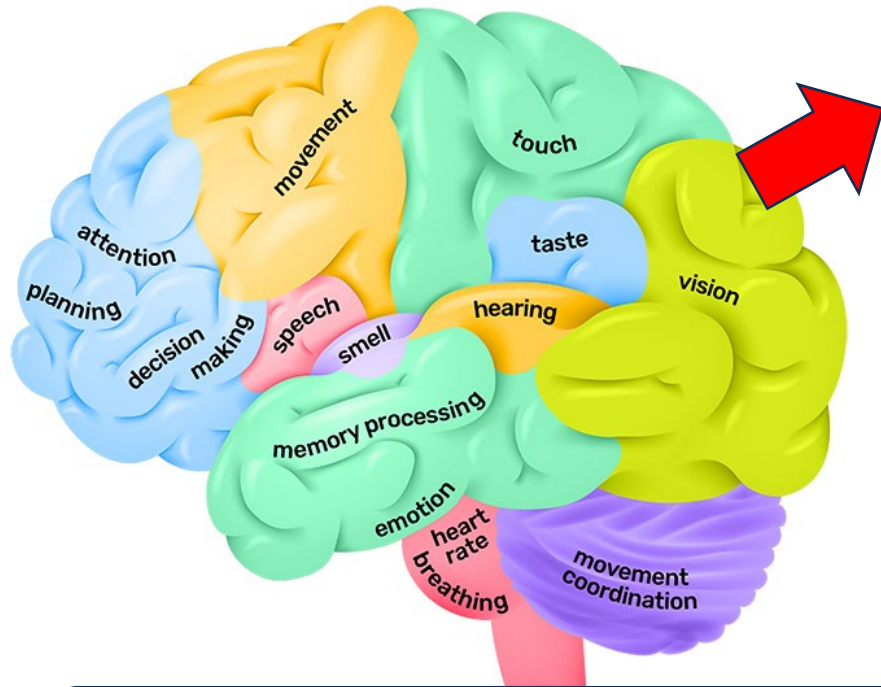
Our Adult Brain: ~ 1.4kg

CONTROLS

Thought, memory, emotion, touch, motor skills, vision, breathing, temperature, hunger and every process that regulates our body.



Our Brain



Our Adult Brain: ~ 1.4kg

CONTROLS

Thought, memory, emotion, touch, motor skills, vision, breathing, temperature, hunger and every process that regulates our body.

Regular physical activity and exercise helps:

Brain Health

Improve Memory

Reduce Anxiety & Depression

Reduce Risk of Cognitive Decline

Benefits of having strong and healthy muscles

Skeletal Muscles are an Endocrine Organ

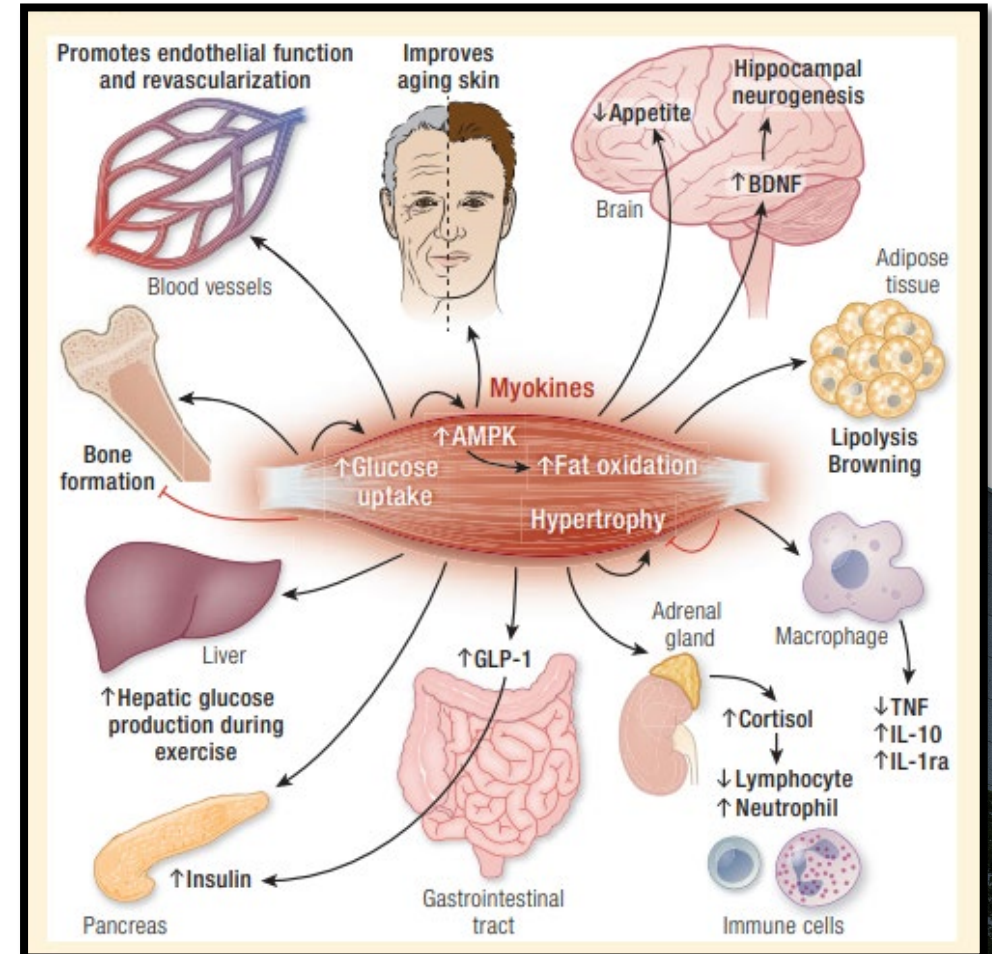
Examples of muscles endocrine action

Improve insulin sensitivity & glucose uptake

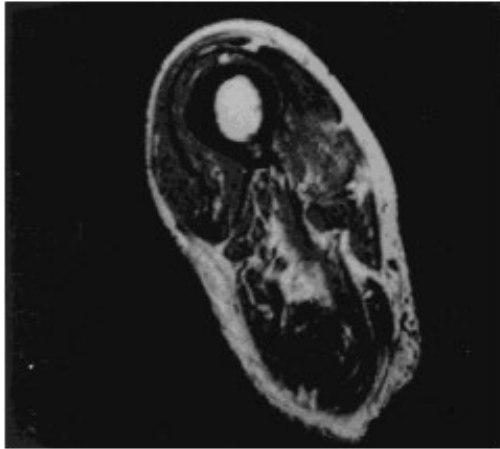
Promotes bone formation

Reduction of visceral fat mass

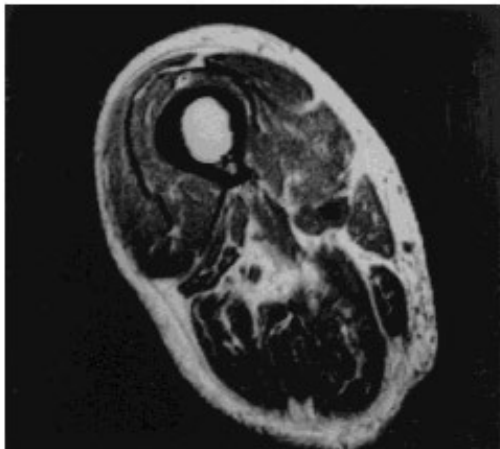
Positive effects on brain health



There is still Hope!



Pre



Post

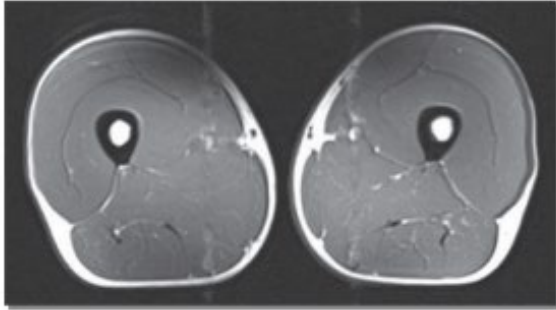
The Right Time is NOW!

- 92 yr old male subject recruited from a geriatric hospital referred patient undergone a 12 weeks of resistance exercise training program for his lower limbs.
- **44% increase in muscle mass in just 12 weeks.**

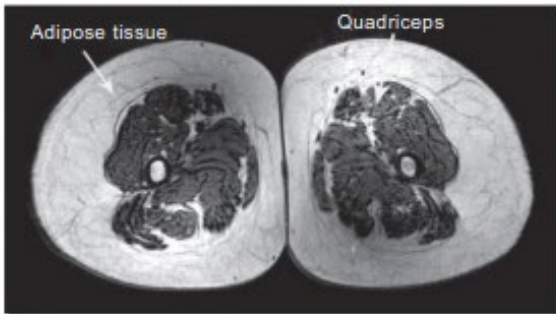


There is still Hope!

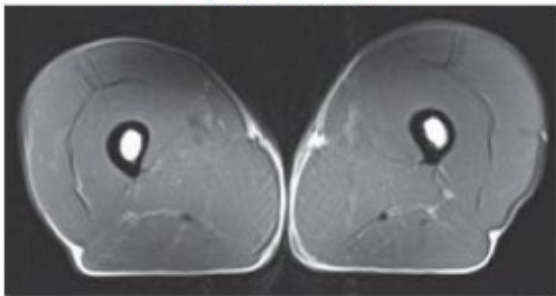
40-year-old triathlete



74-year-old sedentary man



70-year-old triathlete



Use it or Lose it!

- Long term moderate to high intensity exercise preserves muscle mass and prevents fat infiltration of muscles in masters athletes.
- **Retention of muscle strength and bone mineral density** are also observed in masters athletes.

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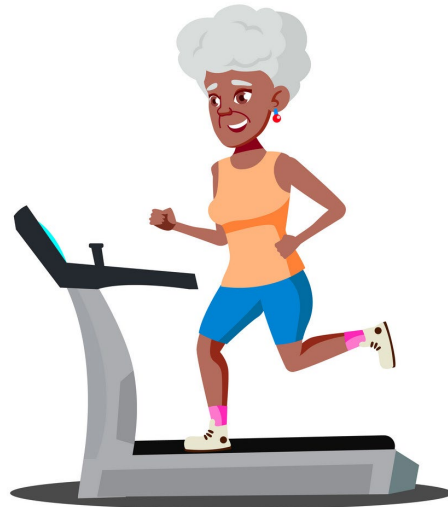
What are the exercises important for me as I get older?



The Balanced Approach to Exercise to Live & Age Well



Strength Training



Cardiovascular Exercise



Balance



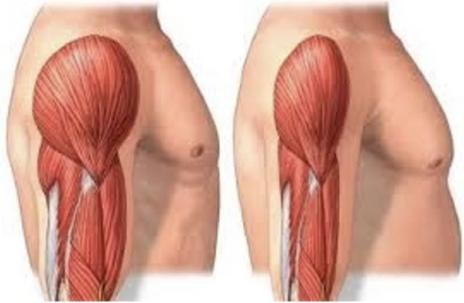
Functional Mobility

*Key Components of Health-Related Fitness
for Seniors*

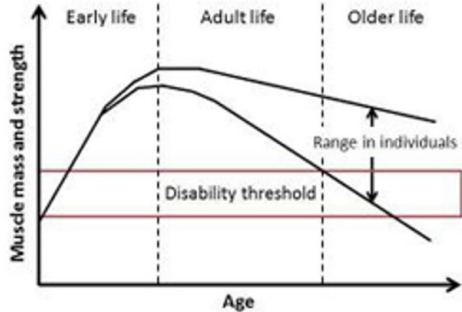


STRENGTH

Everyone especially Seniors must start Strength Training



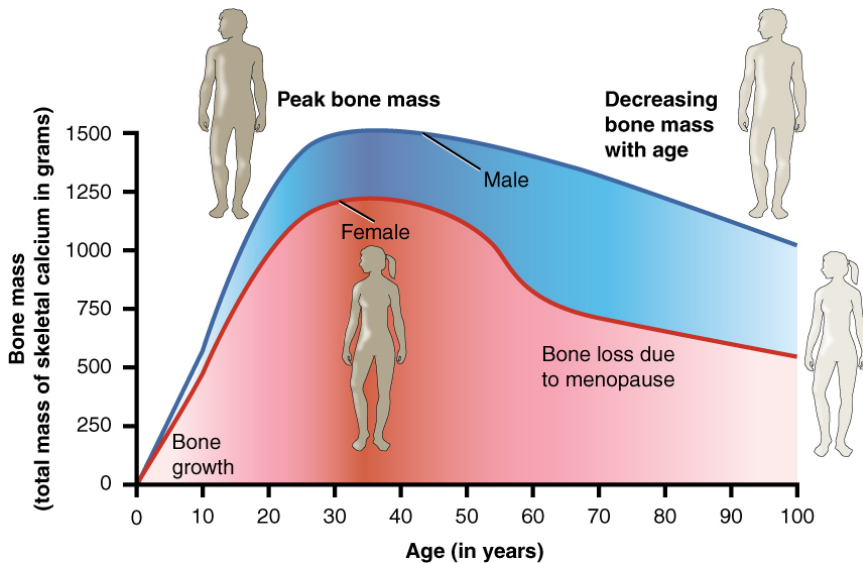
Normal muscle mass on left, muscle wasting on right



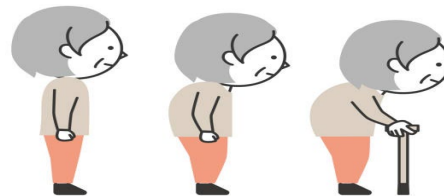
Trajectory of muscle / strength loss and disability
More reserves and better maintenance with exercise and nutrition slows losses

Muscle & Bone Loss with Age

Frailty Prevalence increasing in Singapore



All these associated with increasing likelihood of mortality, disability and poorer quality of life.



STRENGTH

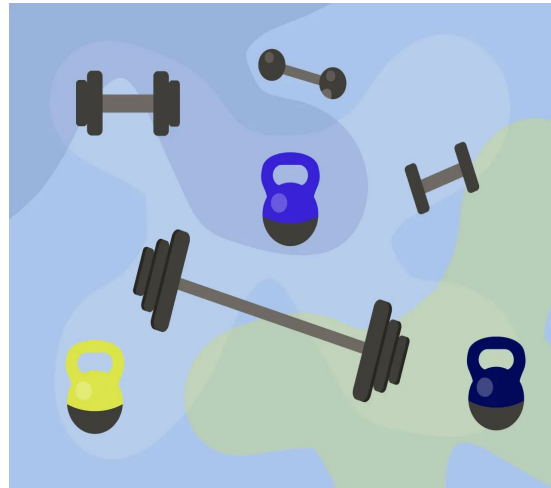
Everyone especially Seniors must start Strength Training



Common Ways to Strength Train



Machine-
Type



Free Weights



Resistance
Bands



Body Weight

Importance of Aerobic Exercise

Can **Cardiorespiratory Fitness (CRF)** predict mortality in patients with cardiovascular disease?

21 Prospective Cohort Studies

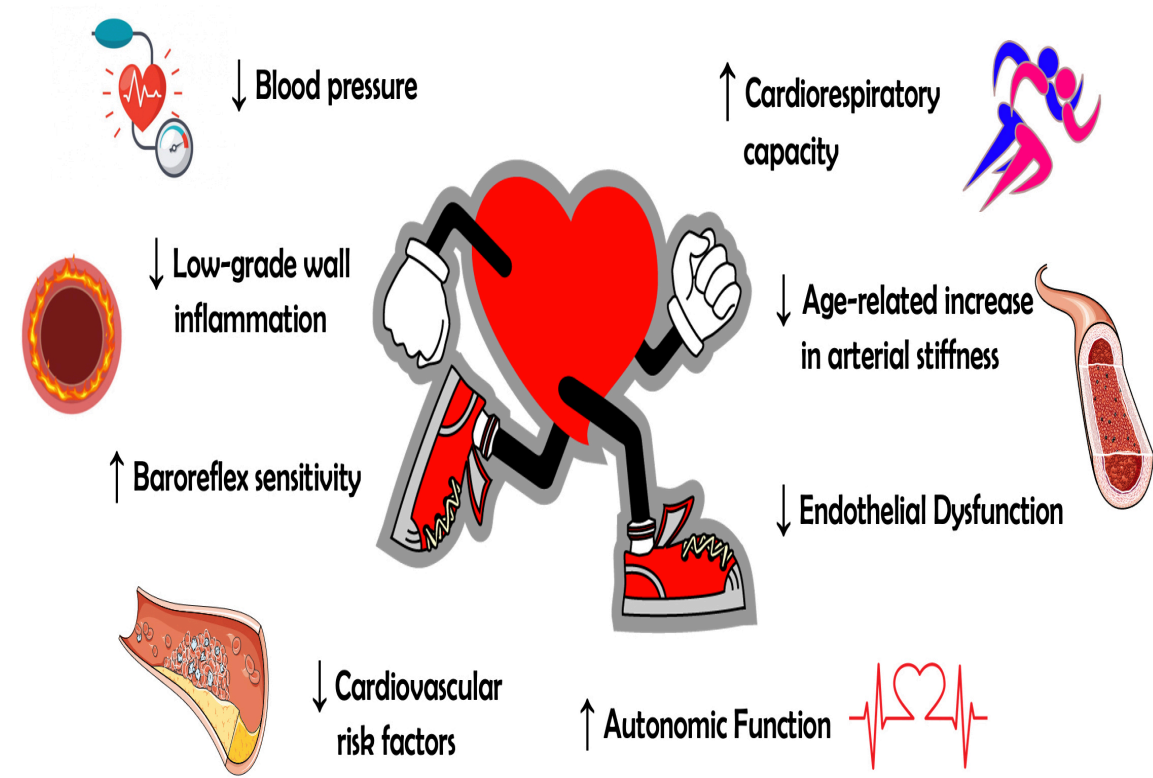
159,352

Patients diagnosed with cardiovascular disease

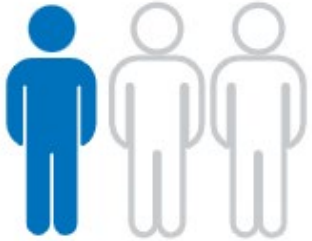
Cardiopulmonary exercise testing

(High CRF vs Low CRF)

(Per each 1-MET increase)



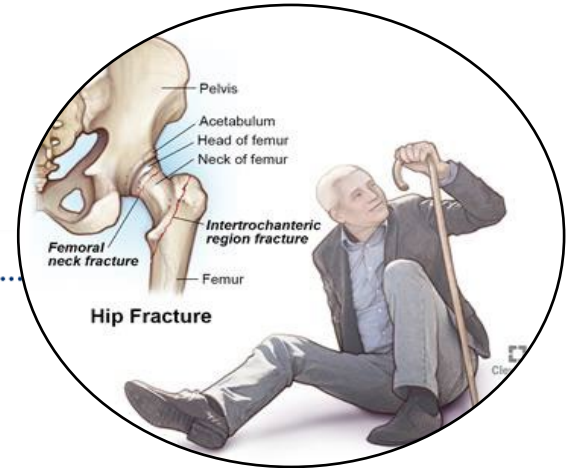
Increased cardiorespiratory fitness levels are directly linked to healthy longevity.



ONE IN THREE
community-dwelling
elderly aged
≥ 65 YEARS



ONE IN TWO aged
> 80 YEARS
will have **at least one fall**
within a year



In Singapore

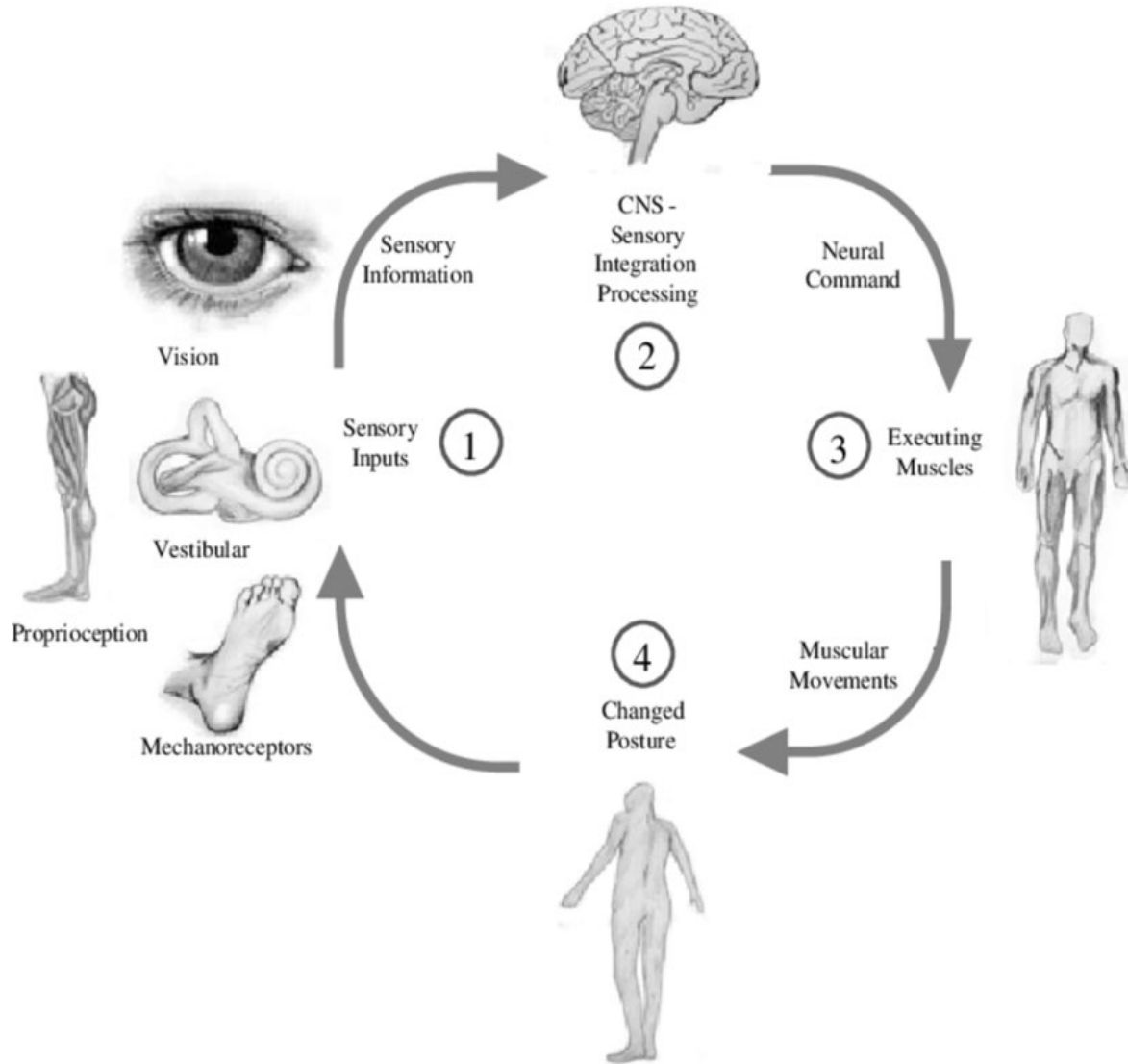
falls account for

40%

OF INJURY-RELATED DEATHS

about **ONE-THIRD**
OF OLDER ADULTS

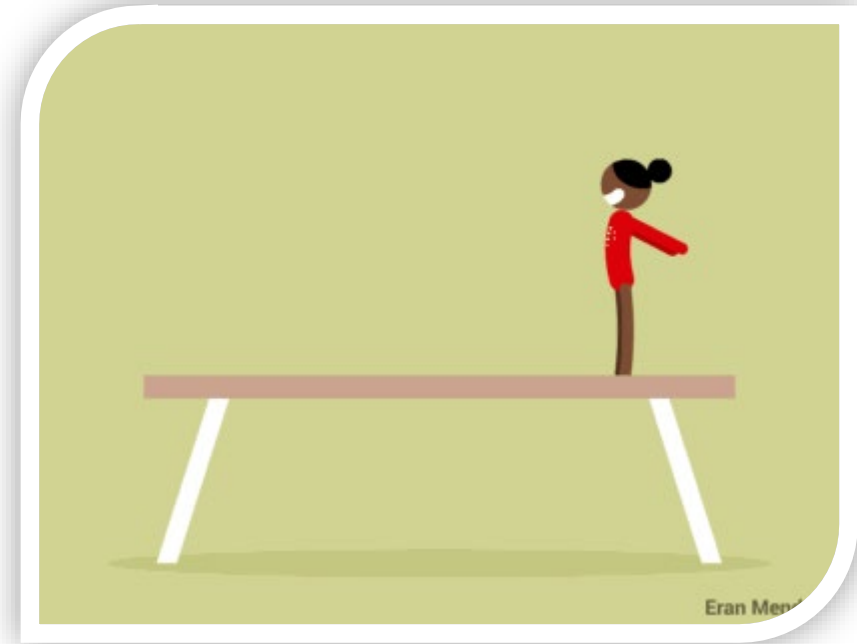
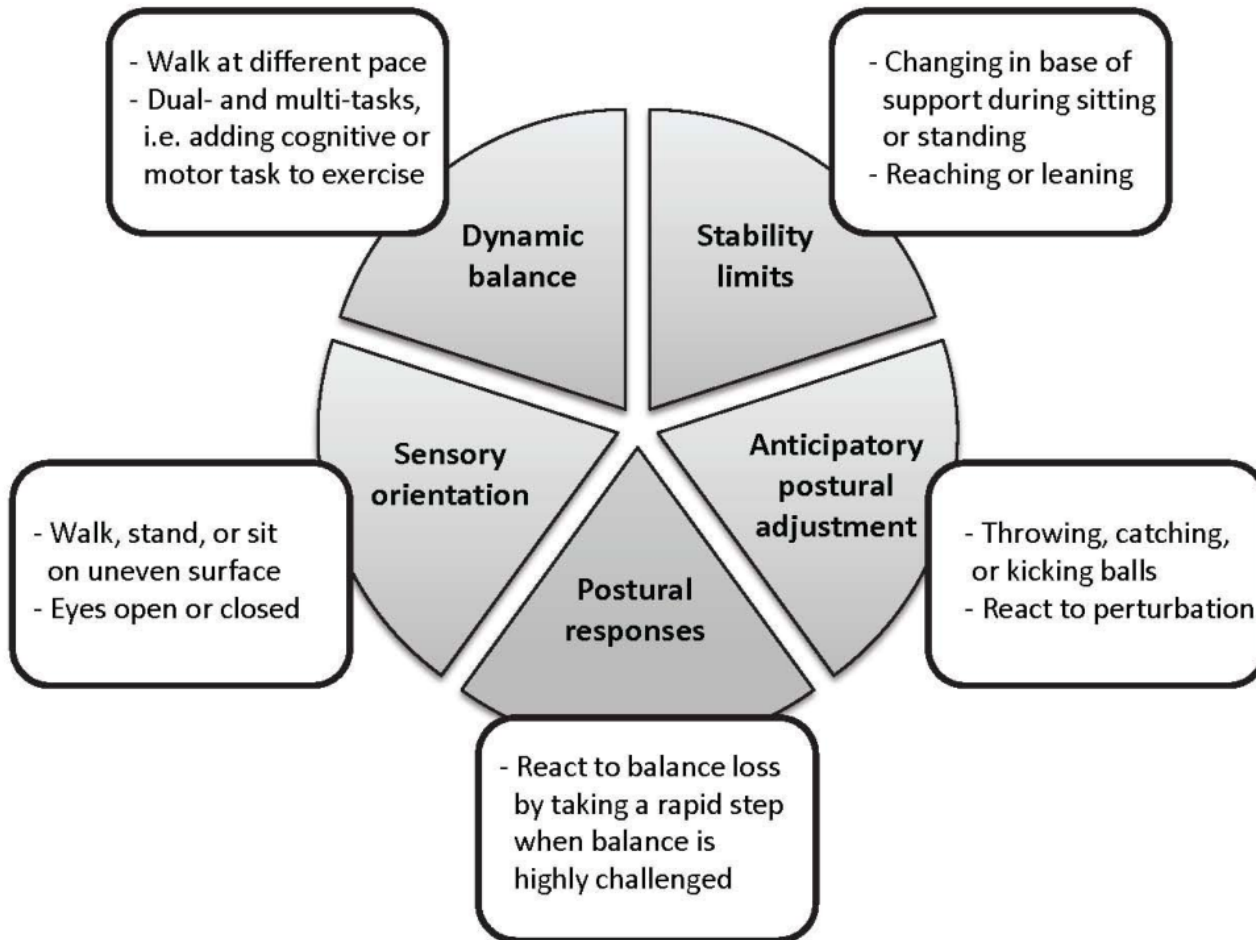
aged 60 and above have
fallen more than once



- Ability to maintain a posture.
- Able to move between postures.
- Ability not to fall when reacting to an external perturbation.



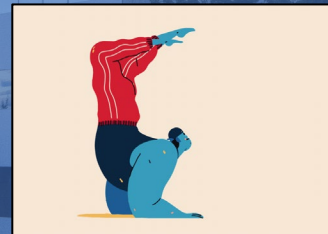
Balance-training programme



Functional Mobility is key to movement

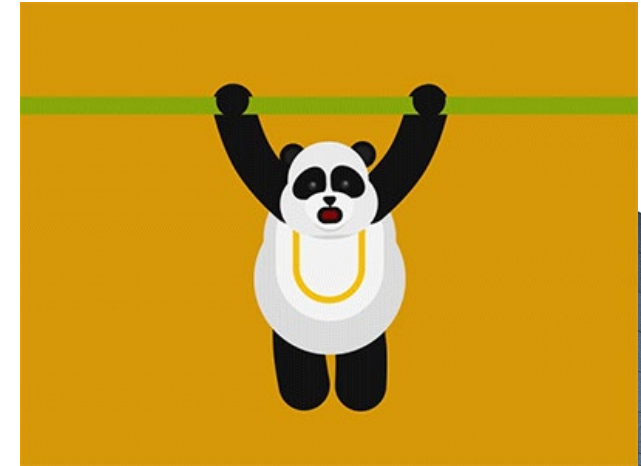
Some Advantages of Mobility Training:

- Improve moving through range of motion with control.
- Allows optimal joint health.
- Builds strength and stability more efficiently and thus prevents injuries.
- Keeps us out of static postures and bad habits.



Exercise Training Principles

Our basic movement patterns



Horizontal Push & Pull

Vertical Push & Pull

Exercise Training Principles

Our basic movement patterns



Squat



Lunge



Hinge



Twist

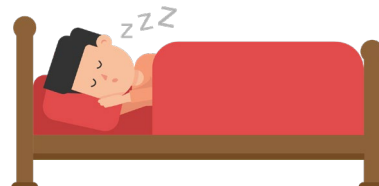
Exercise Training Principles



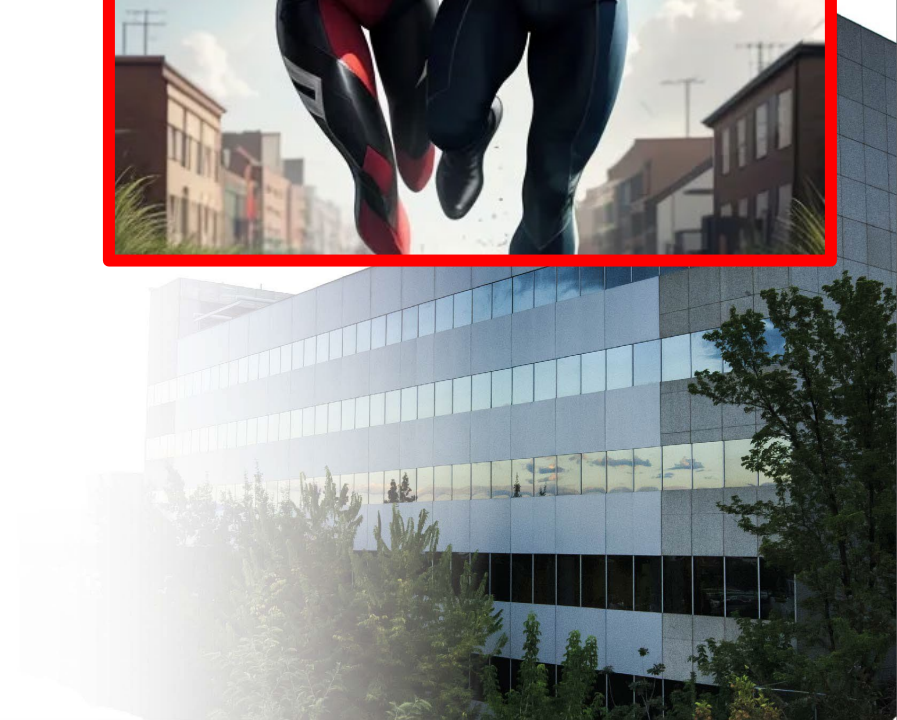
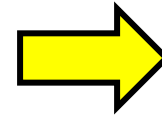
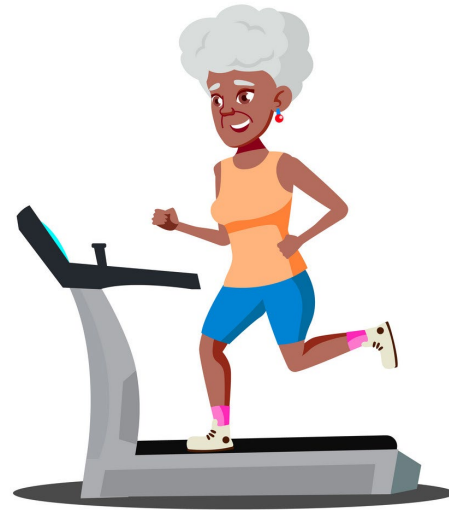
Progressive Overload

Exercise Specificity

Rest & Recovery



Recap: A Holistic Program to get Stronger & Healthy



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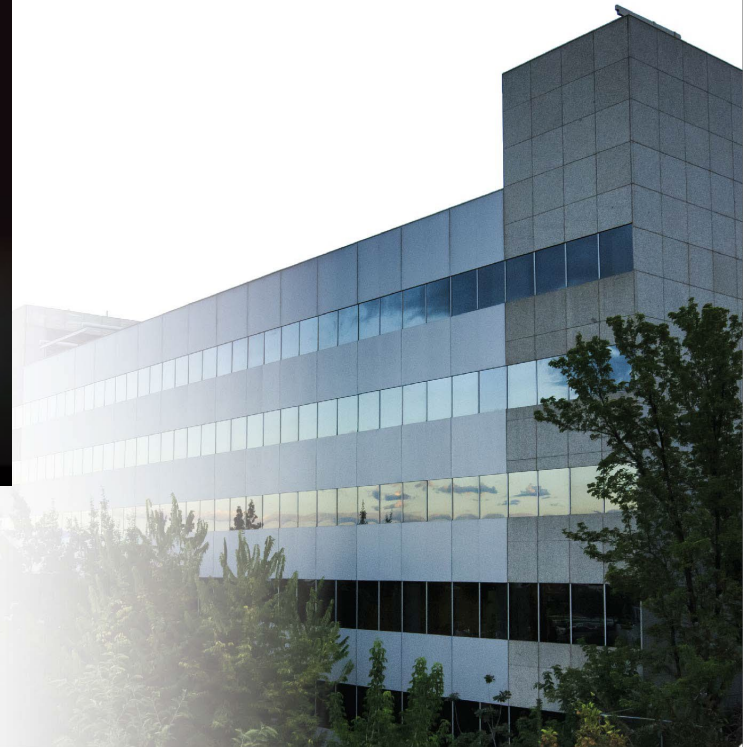


Find your Why

Find Your Purpose- Kettlebell Commercial



Source: <https://youtu.be/REcZopXwOXo>





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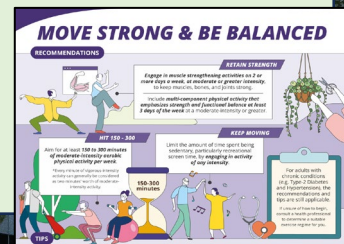


Singapore Guidelines for Older Adults (65 yrs & Above)

Move Strong & Be Balanced

Recommendations

- **Retain Strength:**
 - Engage muscle strengthening activities on 2 or more days a week at moderate or greater intensity.
 - Include multi-component physical activity that emphasizes on strength and functional balance at least 3 days a week at moderate intensity or greater.
- **Hit 150 – 300:**
 - Aim for at least 150 to 300 minutes of moderate intensity aerobic physical activity a week.
- **Keep Moving:**
 - Limit amount of time spent being sedentary.



My Personal Take



Following guidelines strictly is like planning and trying to act out your yearly new year resolutions, it seldom last.

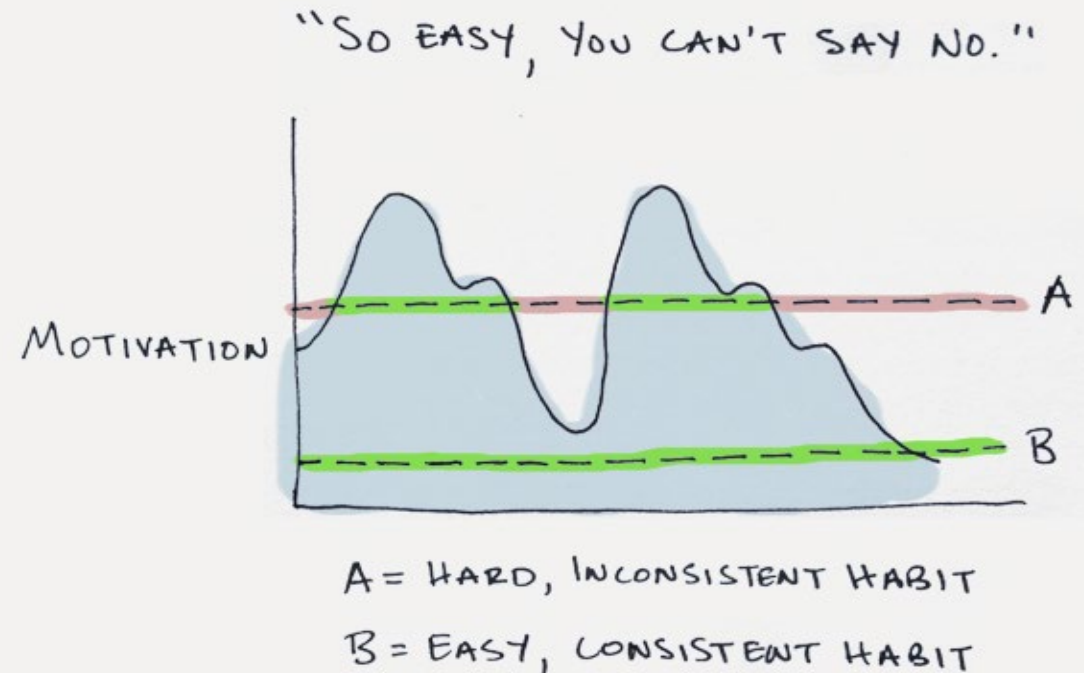


My Personal Take



- **Build small habits (movement and exercise habits) progressively.**
- **Make it fun.**

Following guidelines strictly is like planning and trying to act out your yearly new year resolutions, it seldom last.

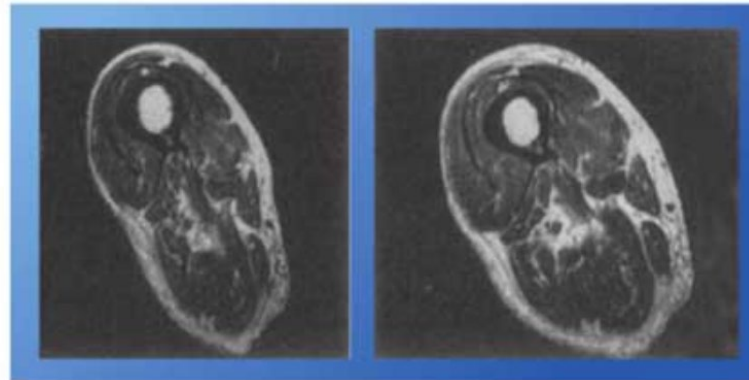


Key Take Home Message

- If you have been looking after your teeth everyday since young, why are you not investing time to look after your muscle, heart, joints and bone health.

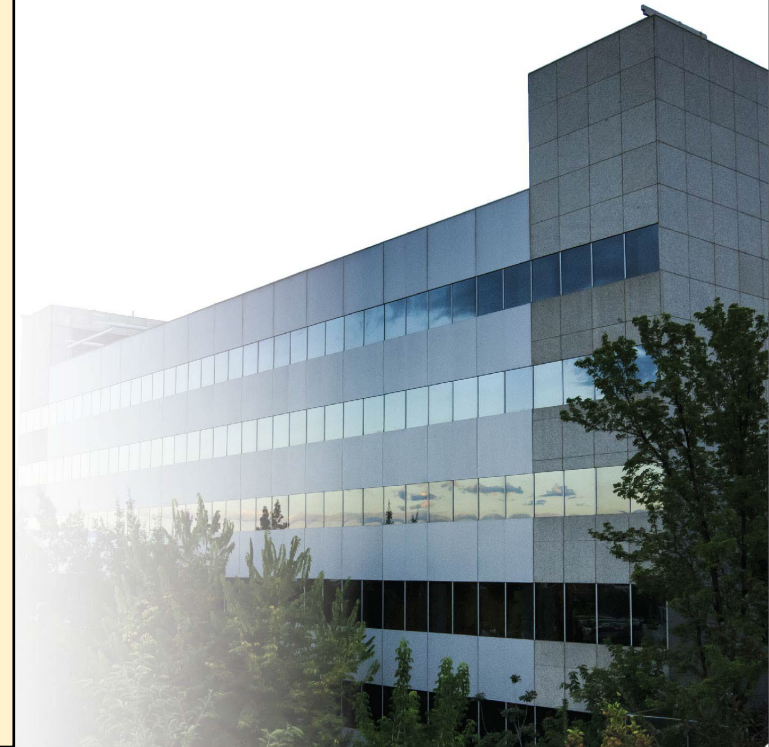


- **START RIGHT NOW!! DON'T DELAY!!**



Important Disclaimer

- **I strongly recommend for every individual to be assessed by a physiotherapist or qualified exercise specialist to provide a personalized suitable exercise program.**
- **Before you start any form of exercise, especially for those with chronic health conditions, please consult a doctor (EIMS certified doctor if possible) for clearance.**



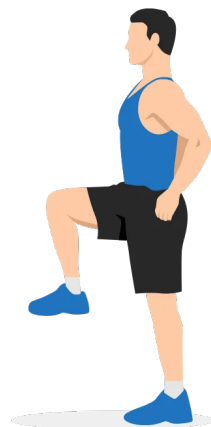
Start Now – Lets All Get Up from Your Chairs



Spinal Roll Down



Squat into Overhead Press



Single Leg Stance



Q & A

BYU Management Society



**Thank
You**