

A stylized, colorful illustration of a landscape. The foreground features rolling green hills with a dark brown path. On the left, there is a green tree, a purple flower, and some orange autumn leaves. A small red bird is flying in the sky. The background consists of layered, wavy bands of blue and white, suggesting a sky or distant hills.

Fall Prevention 防跌多面睇

Grace Lee, PTI
PYNEH
June 2018

Unintentional Injury deaths

- 1st Road traffic accidents
- Falls

Unintentional Injury deaths

- 1st Road traffic accidents
- 2nd Falls

Hong kong Figures

- Age > 65 28-35% Community Elderly
 > 70 32-42%
- 10-15% Serious injuries
 (e.g. Head injuries, fracture)

Place of Falls

Indoor +++++

Outdoor +

Place of Falls

Indoor +++++

Outdoor +

最安全的地方，
就是最危險的地方

Gender Risk

- Female > Male
- Male > Female (Mortality Rates)

Social Group (Higher risk)

- *Poor social support*
- *Lower income group*

Social Group (Higher risk)

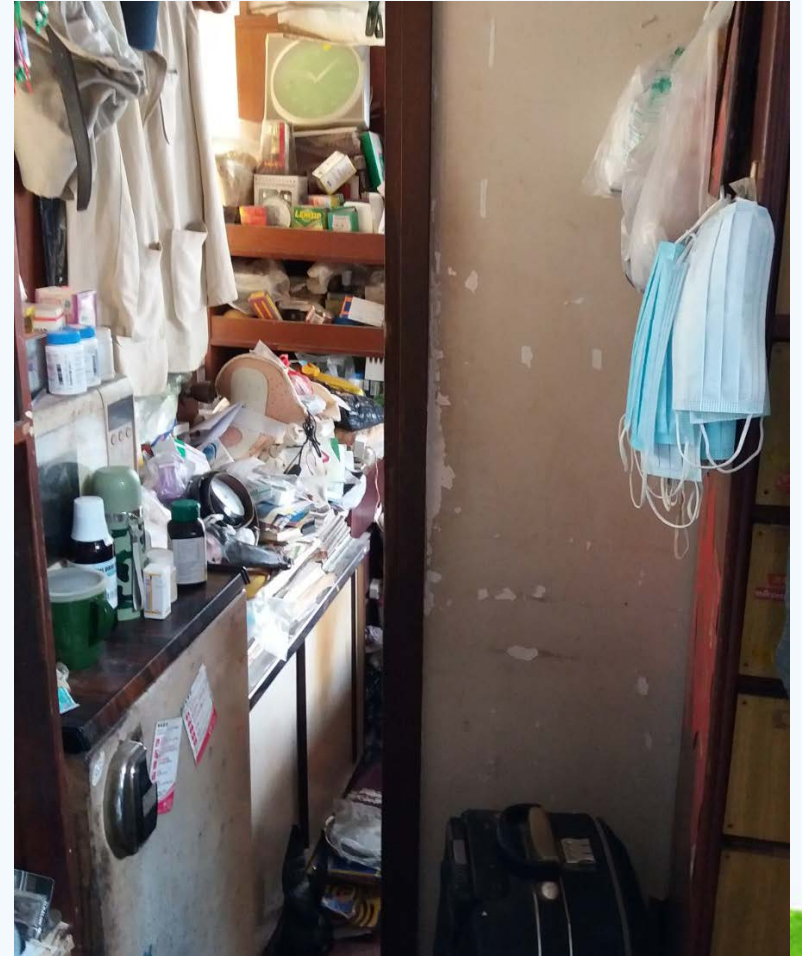
- *Poor social support*
- *Lower income group*
 - poor living environment*
 - poor health awareness*



Extrinsic & Intrinsic Factors

Extrinsic Factors

- Poor lighting
- Poor furniture arrangement
- Unstable / Broken furniture
- Blocked walkway
- Slippery mat or floor
- Trailing cords
- Uneven ground
- Shoes wear





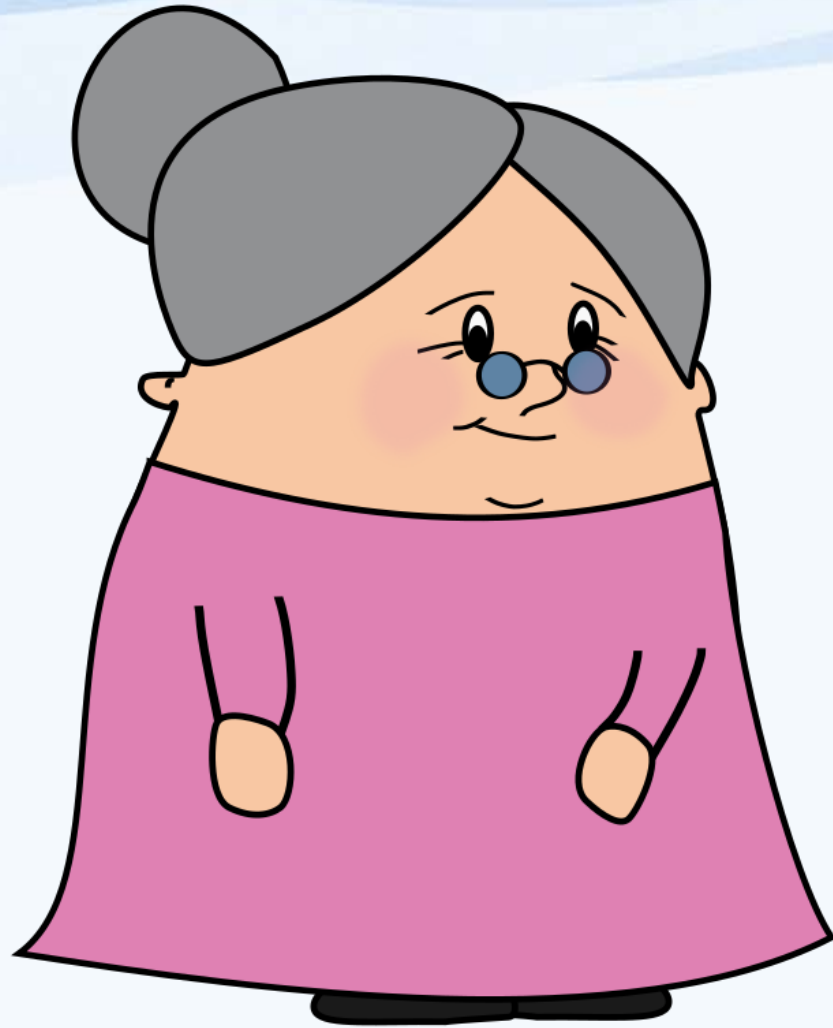
Intrinsic Factors

- *Medication*
- *Polypharmacy*
- *Medical diseases*

e.g. Stroke, Parkinsonism, Arthritis....

Ageing





- *Vision*
- *Hearing*
- *Sensation*
- *Joint reaction*
- *Muscle mass*
- *Cognition*

Physical Causes



A stylized landscape illustration. The foreground features rolling green hills with varying shades of green. On the left, a small plant with a dark brown stem and two orange, rounded leaves sits on a hill. Above it is a large, stylized flower with three layers of petals in shades of purple and pink. The background consists of light blue and white wavy bands representing a sky or distant hills.

Five Factors determine Stability & Mobility

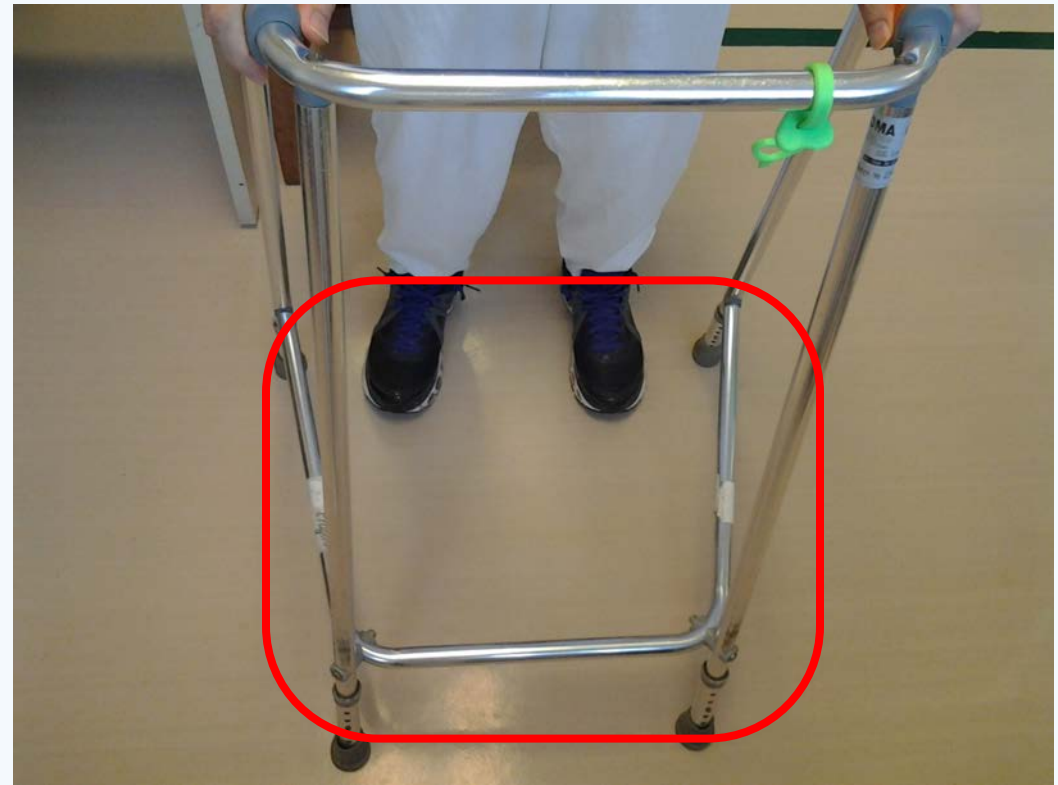
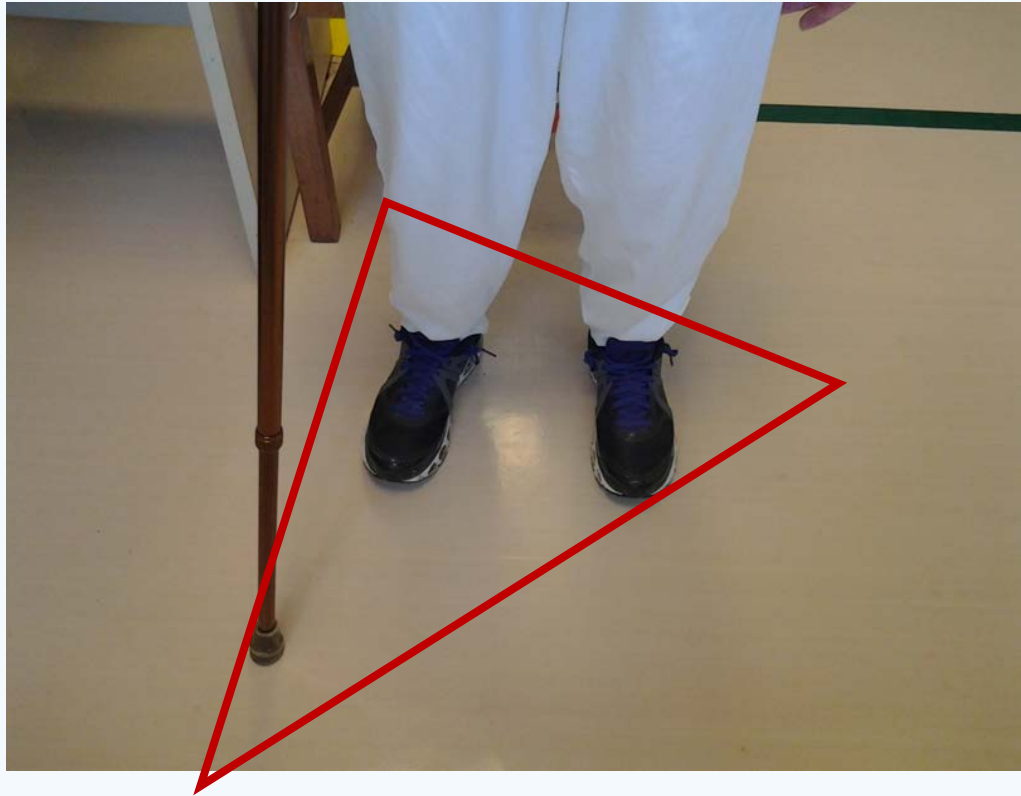
1. Size of Base of Support (BOS)



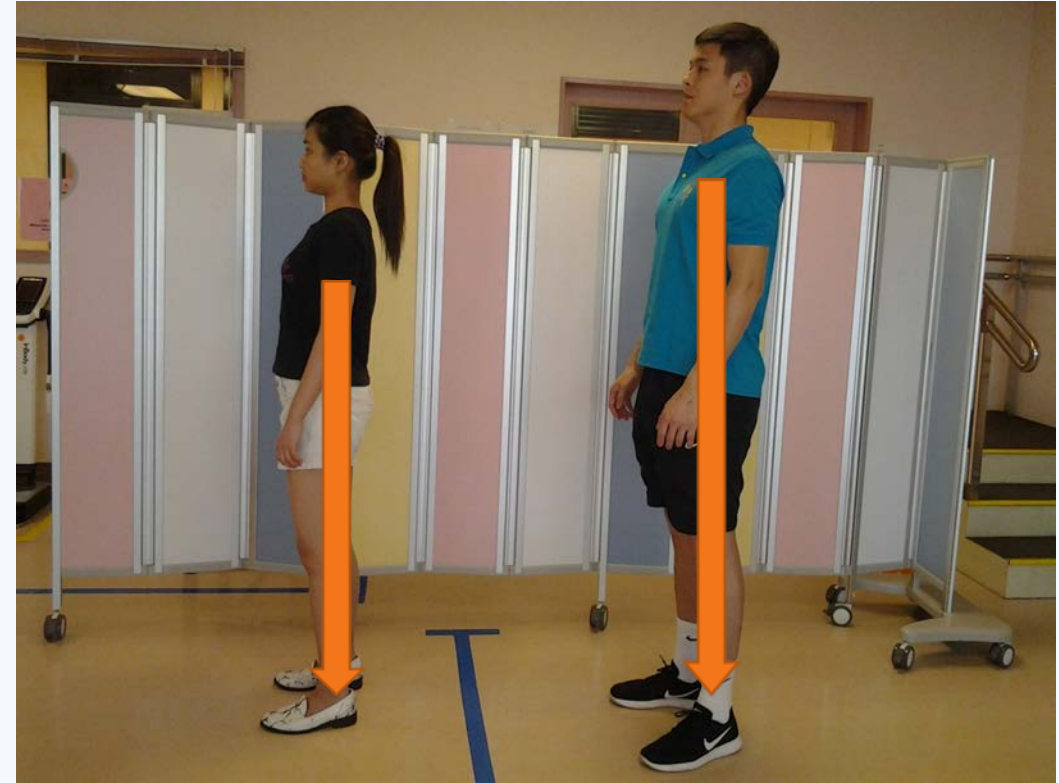
1. Size of Base of Support (BOS)



1. Size of Base of Support (BOS)



2. Height of Centre Of Gravity (COG)



3. Location of COG



4. Body Mass / Body Weight



4. Body Mass / Body Weight



5. Friction % ground & any Contact Points

- Feet
- Shoes
- Slippery floor
- Uneven ground
- Moving base

5. Friction % ground & any Contact Points

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Common Falls



Common Falls Sit ↔ Stand



Common Falls Sit ↔ Stand



Alter BOS, height & Location of COG



Alter BOS, height & Location of COG



Alter BOS, height & Location of COG



Alter BOS, height & Location of COG



Alter BOS, height & Location of COG



Alter BOS, height & Location of COG



Alter BOS, height & Location of COG



Common Falls in Walking

Single Leg Stance



Fall Mechanism



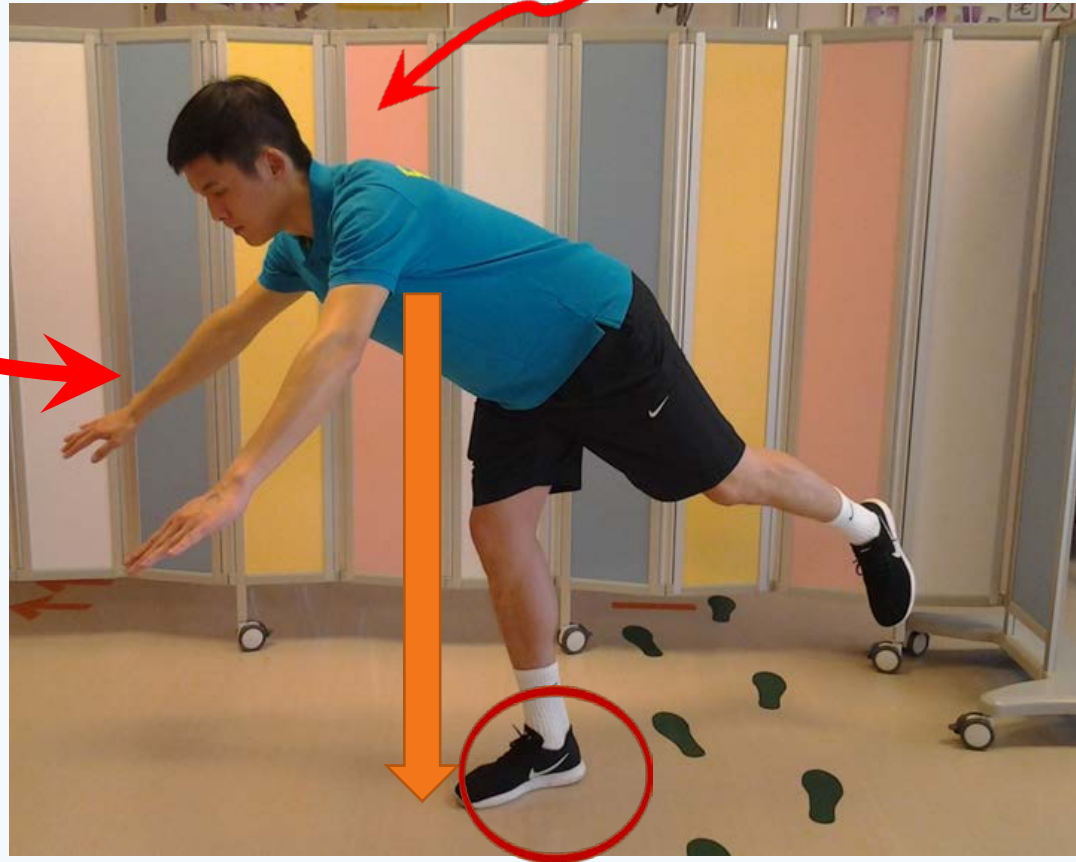
Fall Mechanism



Fall Mechanism

Protective
arm reflex

Righting reaction



Righting Reaction



Fall Mechanism

Protective
arm reflex

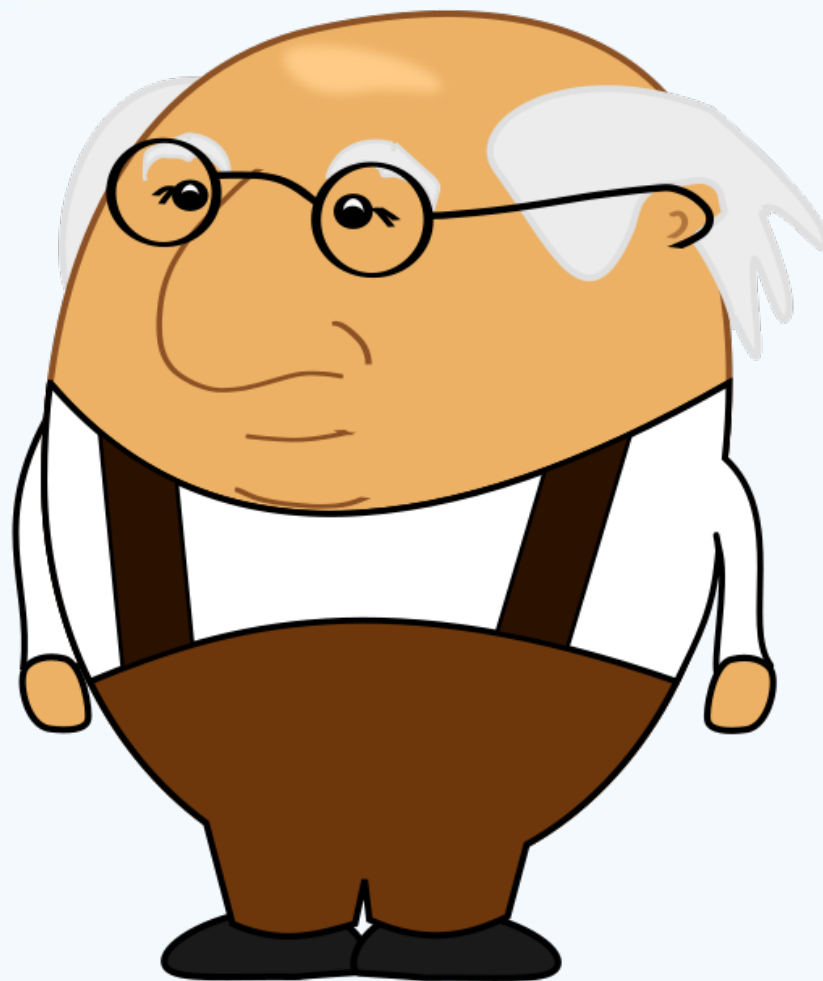
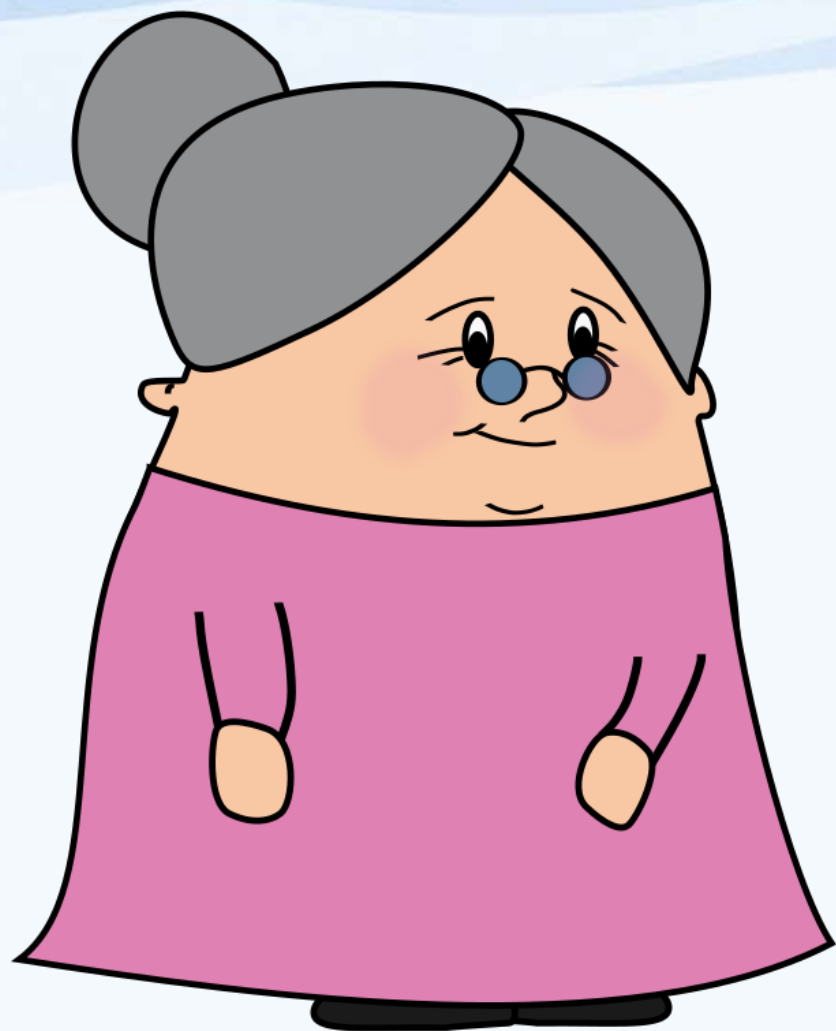
Righting reaction











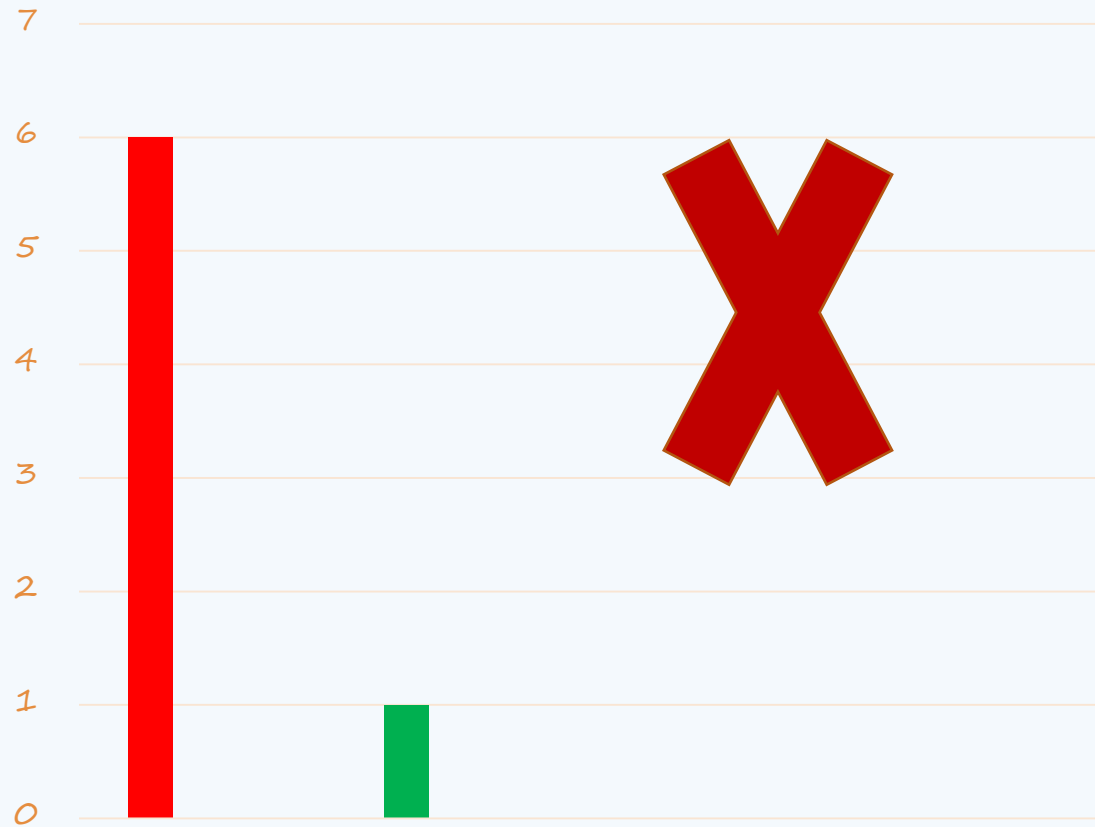
Don't

Do

Ageing



After Fall



After Fall but training



Afraid of Another Falls

- 40-60%
- Self- restricted daily activity

Case Study





Adventurer



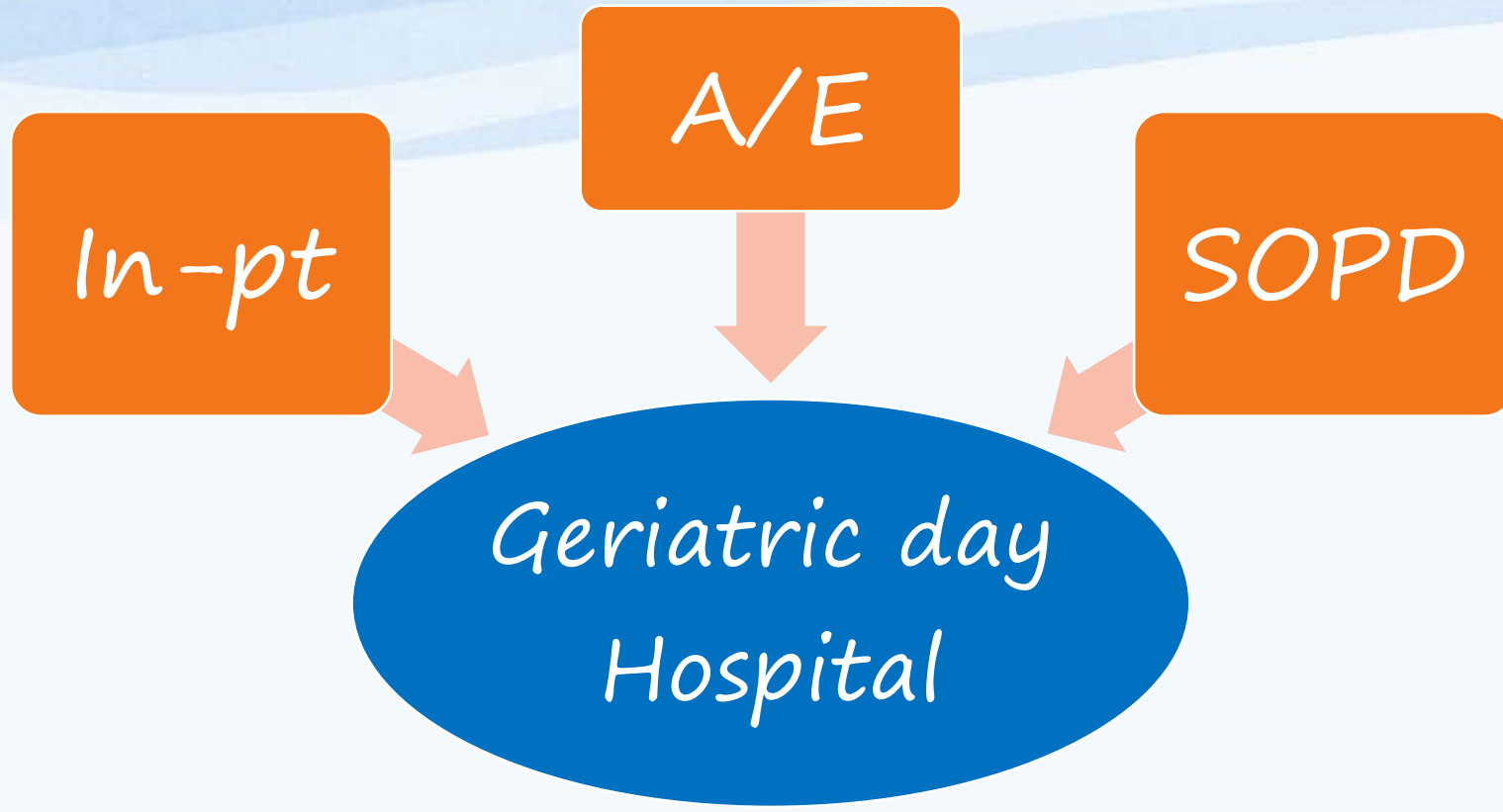
Fall Prevention Program



Centres of Fall Prevention Program

Geriatric day
Hospital

HKEC Community Based
Allied Health Service



Doctor, Nurse, PT, OT, ST & Dietitian


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graph LR; GOPC[ GOPC  
-Violet Peel  
-Sai Wan Ho  
-Shau kei Wan Jockey club ] --> HKEC[ HKEC Community Based Allied Health Services ]
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*HKEC Community Based
Allied Health Services*

GOPC

-Violet Peel

-Sai Wan Ho

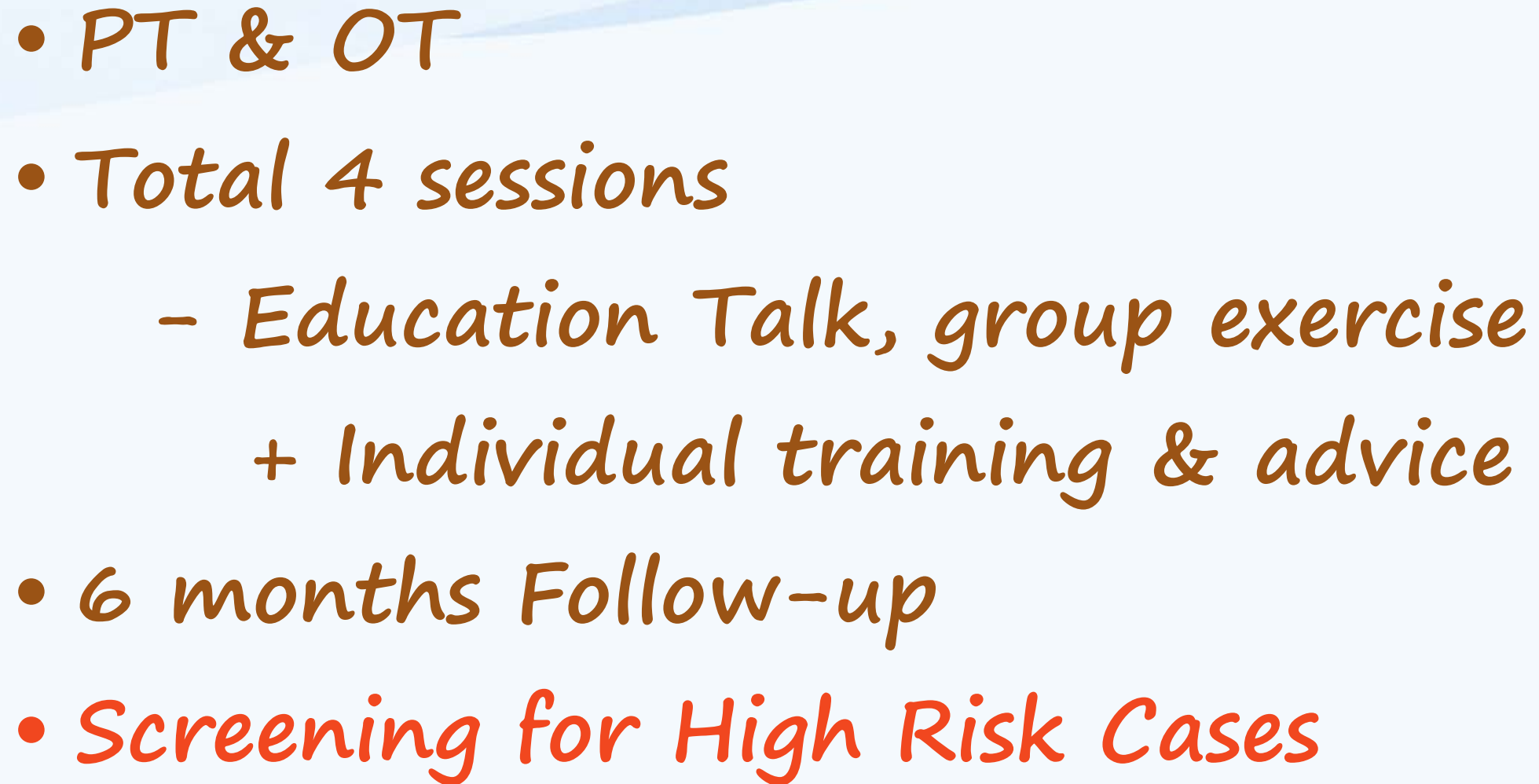
*-Shau kei Wan Jockey
club*

Sai Wan Ho GOPC

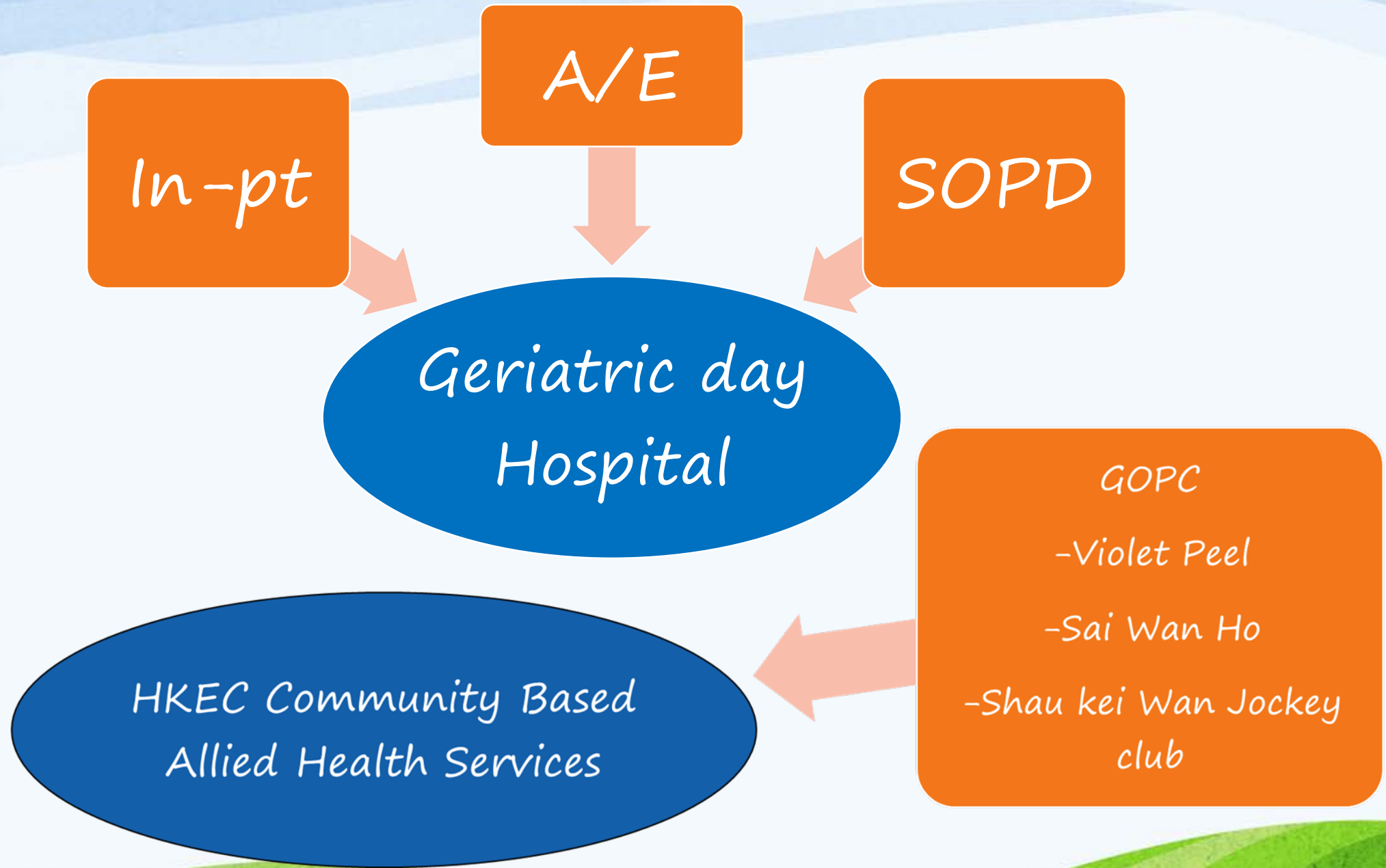


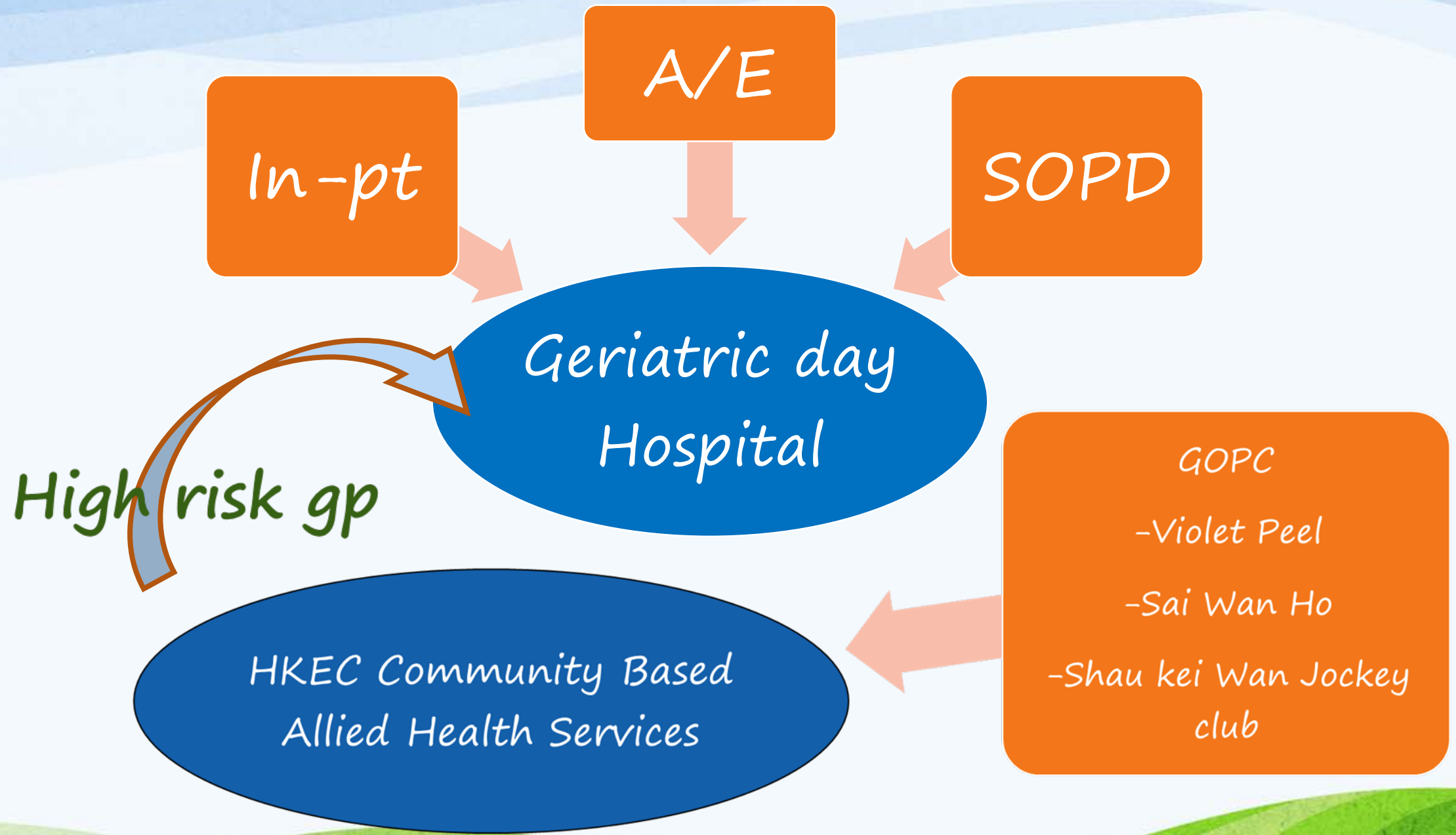
A stylized landscape illustration featuring rolling green hills in the foreground, a small tree with purple and pink foliage on the left, and blue and white wavy hills in the background.

HKEC Allied Health Fall Prevention Program

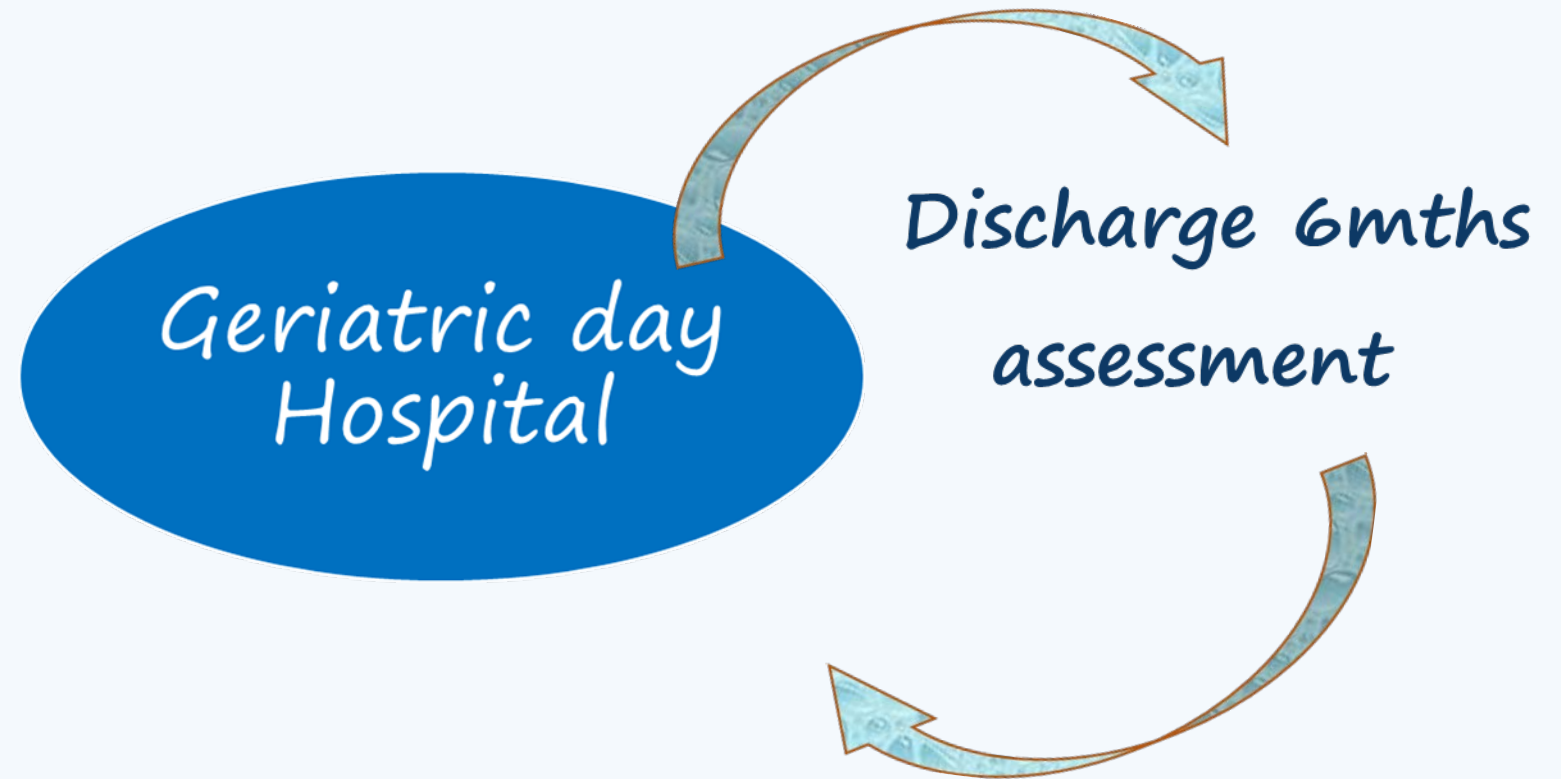
- 
- PT & OT
 - Total 4 sessions
 - Education Talk, group exercise
+ Individual training & advice
 - 6 months Follow-up
 - Screening for High Risk Cases







Discharge from Geriatric Day Hospital



Discharge from Geriatric Day Hospital

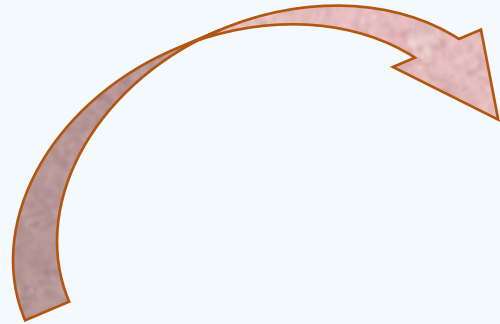
Post Training

assessment

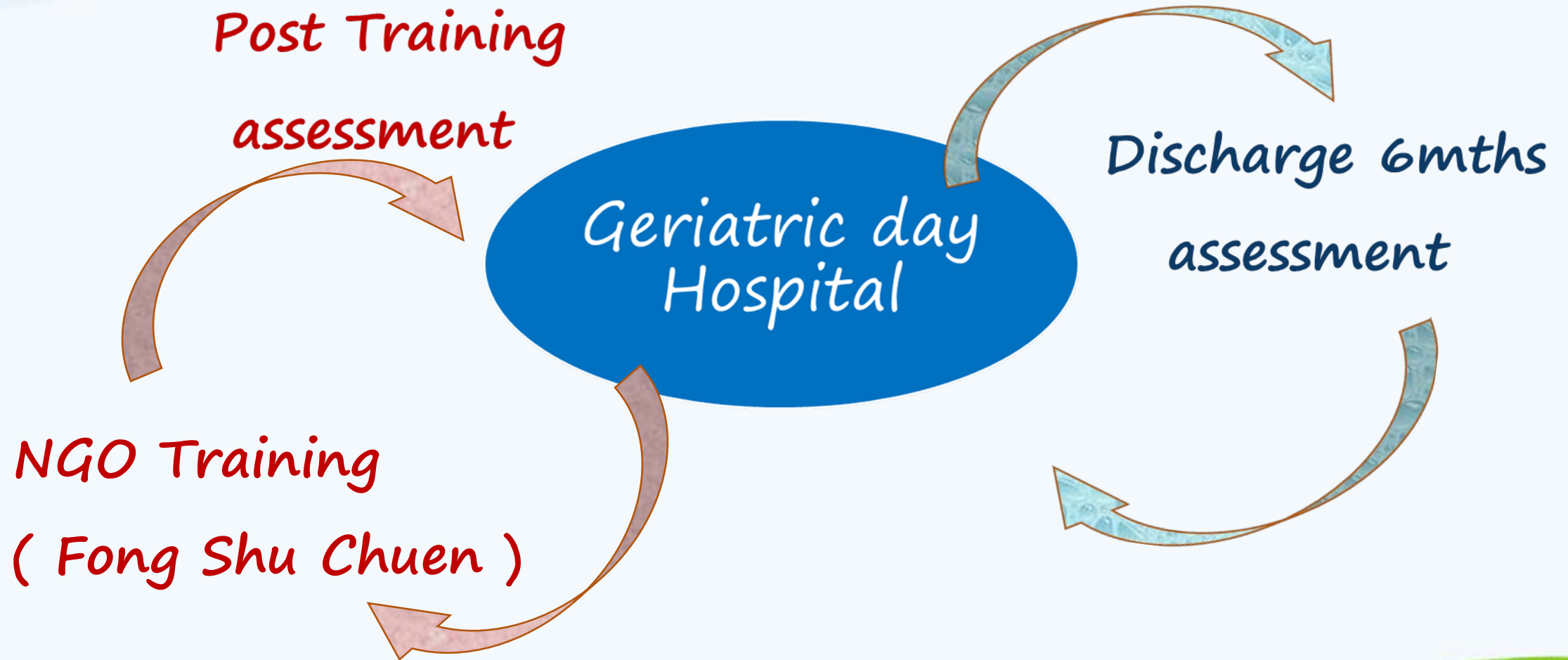
Geriatric day
Hospital

NGO Training

(Fong Shu Chuen)



Discharge from Geriatric Day Hospital



Physiotherapy Training



Core Stability

Pilates Exercise



Core Stability

Modified

Pilates Exercise



Core Stability

Modified

Pilates Exercise



Core Stability

Modified

Pilates Exercise



Strength & Flexibility

Strengthen Anti-gravity Muscles



Strength & Flexibility

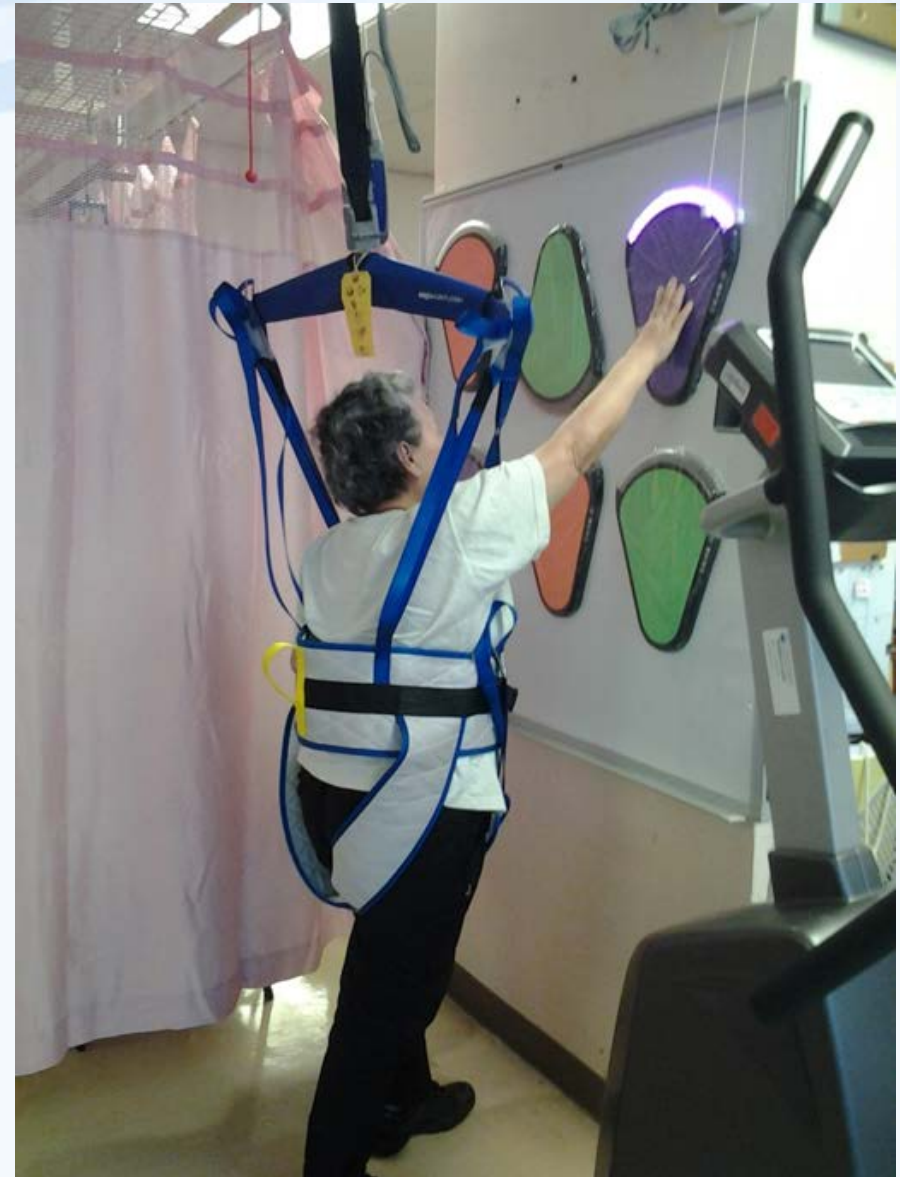
Stretching Exercise



Advanced Balance Training



Away From BOS Reaction Time

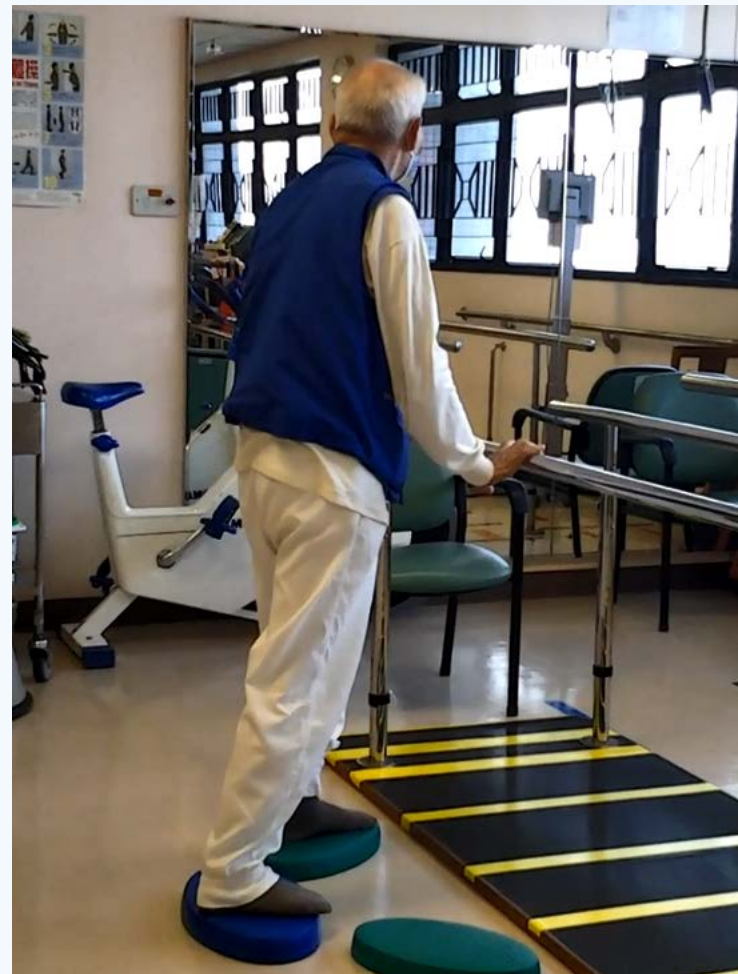


SomatoSensory Training



SomatoSensory Training

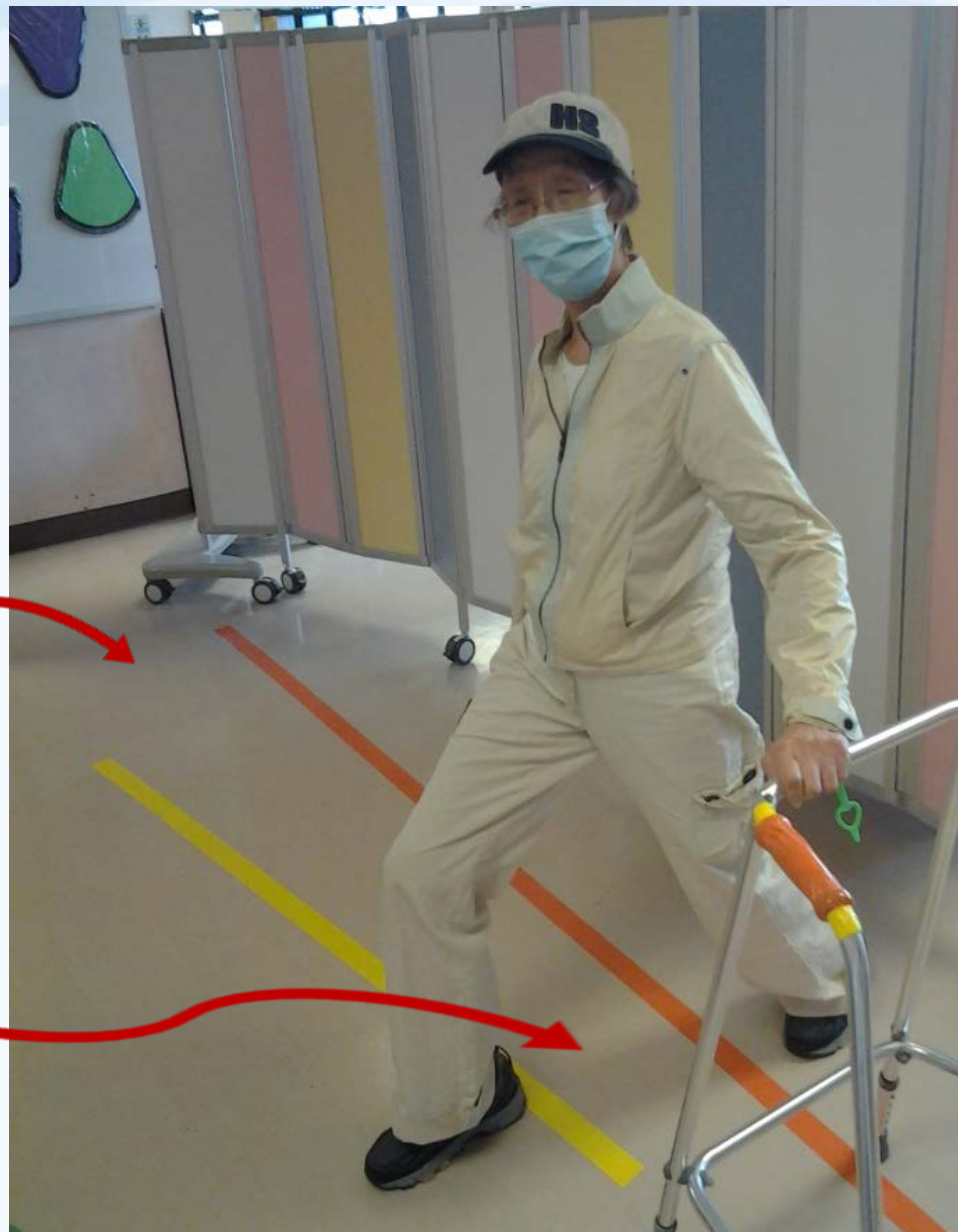
- Plus Head Turning



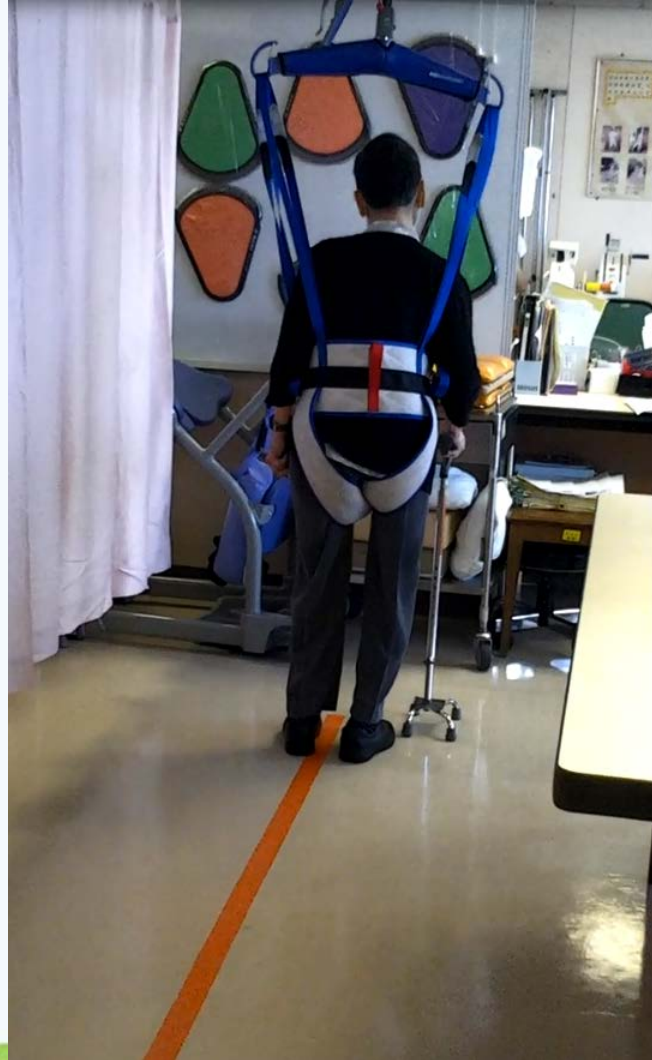
Creek Crossing

Wide

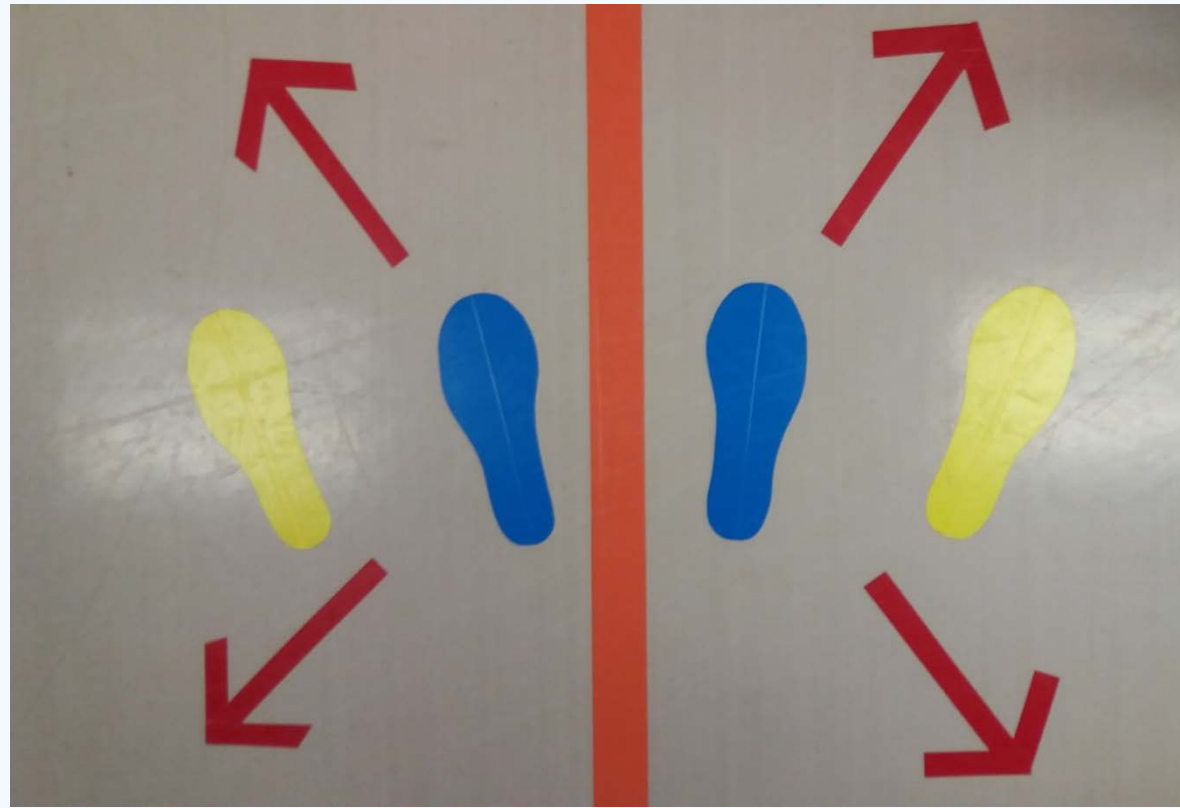
Narrow



Backward & Sideway Walk



Altered BOS in Different Directions



Oblique & Side Steps





Step Training improves reaction time, gait and balance and reduces falls in older people : a systematic review and meta-analysis

Okubo Y, et al.

Br J Sports Med 2017;51:586-593

↓ 50% of Falls

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Elderly Challenge





Elderly Challenge

自強不息



Green Man Road Crossing

- *International Standard 1.2m/s*
- *Average elderly speed 0.9m/s
& Reaction time 3.3s*



Green Man Road Crossing

- International Standard 1.2m/s
- Average elderly speed 0.9m/s
- & Reaction time 3.3s

Moving Ground in Different Direction



Post Fall Management



Fall → *Serious*





Fall → *Serious*
But PREVENTABLE

醫社合作



醫社合作



Secondary Prevention

醫社合作



Secondary Prevention

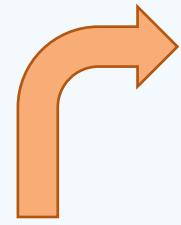
Remedial

Primary Prevention

醫社合作

Secondary Prevention

Remedial



Primary Prevention

Proactive

醫社合作



Secondary Prevention

Remedial

A stylized landscape illustration featuring rolling green hills in the foreground, a small tree with a purple and pink canopy on the left, and blue and white wavy hills in the background under a blue sky.

Tips for Screening

- Falls in last 6 months
- Home environment
- Weakness, dizziness
- Not treated Pain
- Poor Safety Awareness



*Thank
you*

