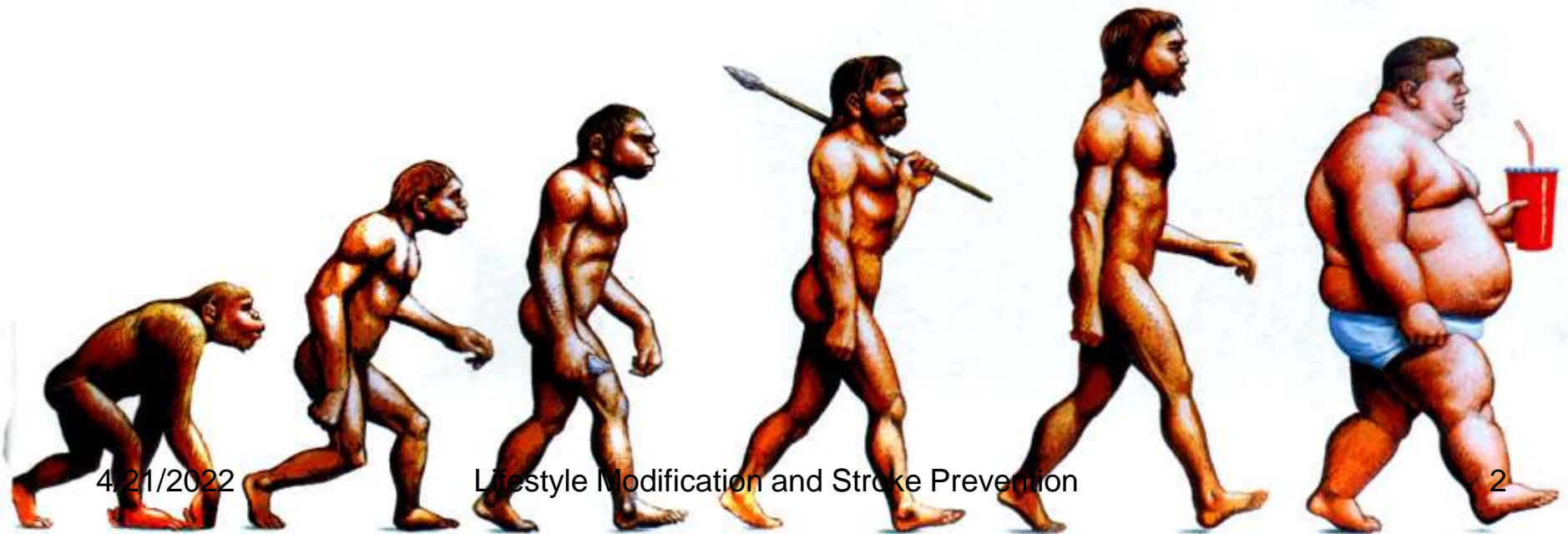# In the name of God!

Lifestyle Modification and Stroke Prevention

Ali Soroush, Professor of Sports Medicine and Lifestyle Modification, Department of Sports Medicine and Rehabilitation, Kermanshah University of Medical Sciences
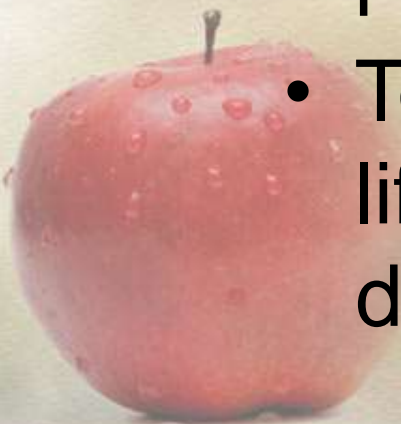
The shape of things to come

Aims of the presentation

- To discuss regarding stroke risk factors and stroke rehabilitation

- To inform and discuss what a 'healthy lifestyle' means

- To introduce lifestyle factors and the impact of lifestyle modification to prevent Stroke

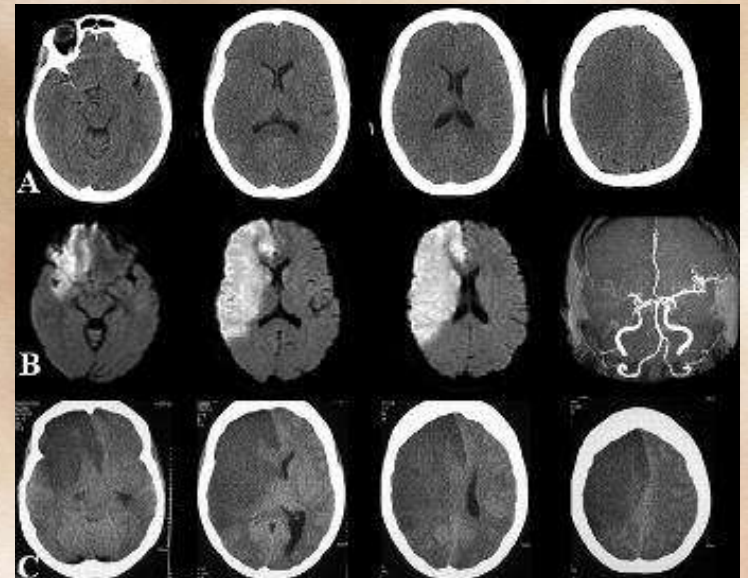- To answer your questions on a healthy lifestyle, unhealthy lifestyle and lifestyle diseases

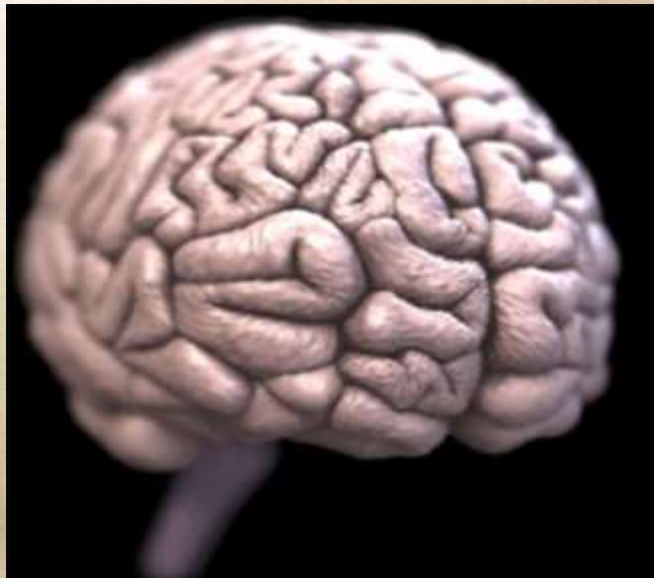# Stroke!

- The second cause of mortality and morbidity in adults

- The main cause of disability

In Iran

Stroke, Death, and Disability

- Stroke is one of the most common causes of death and is the main cause of persistent and acquired disability in adults worldwide

Stroke prevention-medical and lifestyle measure

Hakan Sarikaya et al.

Neuro-Update: Stroke (2015)

Stroke Risk Scorecard

Stroke Risk Scorecard

Each box that applies to you equals 1 point. Total your score at the bottom of each column and compare with the stroke risk levels on the back.

RISK FACTOR	HIGH RISK	CAUTION	LOW RISK
Blood Pressure	>140/90 or unknown	120-139/80-89	<120/80
Atrial Fibrillation	Irregular heartbeat	I don't know	Regular heartbeat
Smoking	Smoker	Trying to quit	Nonsmoker
Cholesterol	>240 or unknown	200-239	<200
Diabetes	Yes	Borderline	No
Exercise	Couch potato	Some exercise	Regular exercise
Diet	Overweight	Slightly overweight	Healthy weight
Stroke in Family	Yes	Not sure	No
TOTAL SCORE	High Risk	Caution	Low Risk

National STROKE Association

In general…

- 10% of stroke survivors recover almost completely
- 25% recover with minimal impairment
- 40% experience moderate to severe impairments that require special care
- 10% require care in a nursing home or other long-term facility
- 15% die shortly after the stroke
- Approximately 14% of stroke survivors experience a second stroke in the first year following a stroke

Stroke Rehabilitation Goal

- To restore lost abilities as much as possible

- To prevent stroke-related complications

- To improve the patient's quality of life

- To educate the patient and family about how to prevent recurrent strokes

- Promote re-integration into family, home, work, leisure and community activities

Successful Rehabilitation

Depends on:

- how early rehabilitation begins

- the extent of the brain injury

- the survivor's attitude

- the rehabilitation team's skill

- the cooperation of family and caregiver

Basic Principles of Rehabilitation

- To begin as possible early (first 24 to 48 hours)
- To assess the patient systematically (first 2-7 day)
- To prepare the therapy plan carefully
- To include the type of rehabilitation approach specific to deficits
- To evaluate patient's progress regularly

Multidisciplinary Rehabilitation Team

- Rehabilitation or Sports Medicine specialist
- Physical, occupational and speech therapist
- Social worker
- Dietician
- Recreational therapist
- Neurologist and psychologist
- Vocational rehabilitation counsellor
- Nurses
- Orthotist
- Patient, caregiver

Early Mobilisation

- **If patient's condition is stable, however, active mobilisation should begin as soon as possible, within 24 to 48 hours of admission**

- **Early mobilisation is beneficial to patient outcome by reducing the complication**

- **It has strong positive psychological benefit for the patient**

- **Specific tasks (turning from side to side in bed, sitting in bed) and self-care activities (self-feeding, grooming and dressing) can be given for early mobilisation.**

Healthy Lifestyle?

4/21/

WHAT IS LIFESTYLE ?

HOW WE LIVE OUR LIVES EVERY DAY

➢ Healthy Lifestyle

➢ Unhealthy Lifestyle

➢ Lifestyle Disease

Lifestyle Modification and Stroke
Prevention

Lifestyle Modification!

MOST IMPORTANT WEAPON TO PREVENT NON-COMMUNICABLE DISEASES

Lifestyle Modification and Stroke Prevention

Healthy Lifestyle

- HEALTHY DIET
- HEALTHY BODY WEIGHT
- REGULAR PHYSICAL ACTIVITY
- NO SMOKING
- STRESS AND ANXIETY CONTROL
- ALCOHOL CONSUMPTION
- GOOD SLEEPING
- …

Lifestyle Modification and Stroke Prevention
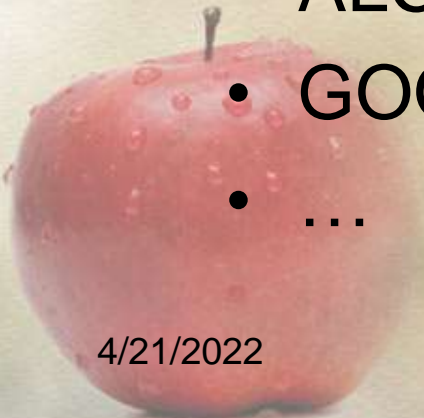
'The Holy Four'

Some researchers termed the following the holy 4 as they have a big impact on disease;

- Smoking
- Drinking
- Nutrition
- Physical Activity

Stroke Risk Factors

Lifestyle Modification and Stroke Prevention

Australian stroke Foundation Stroke risk factors

- Risk of stroke and second stroke is influenced by a number of factors.

- They fall into three groups:

- **1. Stroke risk factors you cannot control**

- **2. Medical stroke risk factors**

- **3. Lifestyle stroke risk factors you can control**

What you CANNOT control?

- **Age**
- **Gender**
- **Race**
- **Past Stroke or TIA**
- **Family History**

Lifestyle Modification and Stroke Prevention

Medical stroke risk factors

- **Transient Ischemic Attack (TIA)**
- **Irregular Pulse (Atrial Fibrillation)**
- **Diabetes**
- **Fibromuscular Dysplasia (FMD)**

Lifestyle stroke risk factors you can control

- **High blood pressure**
- **High blood cholesterol**
- **Smoking**
- **Obesity or being overweight**
- **Poor diet**
- **Lack of exercise**
- **Alcohol, caffeine, and drug use**
- **Stress**
-

Lifestyle Modification and Stroke Prevention

Stroke and Alcohol, Caffeine, Drug use

- Heavy alcohol use increases risk for Stroke.

- Drinking three or more cups of coffee a day may increase the risk of Stroke in older men with high blood pressure.

- Use of street drugs, especially cocaine and amphetamines, is a major Stroke risk.

- Using steroids for body building increases risk of Stroke

Stroke and Stress

- Studies show a link between mental stress and the narrowing of the carotid arteries.

- Learning and practicing ways to reduce stress may help reduce your Stroke risk

Lifestyle Modification and Stroke Prevention

Stroke and Poor Nutrition

- A diet high in fat, sugar, and salt puts you at risk for Stroke.

- Studies show that eating 5 servings of fruit and vegetables a day will reduce your risk of Stroke by 30%

Lifestyle Modification and Stroke Prevention

A healthy diet and lifestyle and risk of stroke in a prospective cohort of women study

- In this study a low risk lifestyle was associated with a considerably lower risk of cerebral infarction and total stroke

Susanna Larsson, PhD, KI

Neurology 2014; 83:1699-1704

Behavioral risk factor prevalence and lifestyle change after stroke a prospective study

- Different behavioral risk factors were associated with specific sociodemographic groups within the stroke population.

- After stroke, high risk group should continue to be targeted to prevent stroke recurrence

Judith Redferm et al

Modifiable Lifestyle Risk Factors For Stroke- a Cross-sectional Study

- Addressing modifiable lifestyle risk factors should be routinely integrated into primary hypertension care especially in primary health care facilitates to reduce the risk of stroke among high risk population

Mark Kaddamukasa et al.

BMC Res Notes (2017), 10:675

Canadian Stroke Best Practice Recommendations

- A healthy lifestyle which includes a healthy balanced diet, exercise, weight control, reduction and avoidance of alcohol and tobacco, reduces the risk of an initial stroke and the risk of subsequent stroke for patient with a prior history of stroke

Wein et al (International Journal of Stroke)

Lifestyle factors and stroke

- Lifestyle factors that have been proven to reduce stroke risk include reducing salt, eliminating smoking, performing regular physical activity, and maintaining a normal body weight

Stroke prevention-medical and lifestyle measure

Hakan Sarikaya et al

Neuro-Update: Stroke (2015)

Lifestyle Modification and Stroke Prevention

Poor Lifestyle Choices

- Sedentary lifestyle
- Poor food choices
- Use of alcohol
- Use of tobacco\products
- Lack of understanding of consequences
- Lack of motivation to change

HEALTHY DIET

- **Low fat, low salt, adequate liquids, proteins, vitamins, calcium, micronutrients** and **high fiber, fruits** and **vegetables**

- **Make them relish their food with good flavour, smell, colour, utensils and environment**

- **Frequent small meals, no overeating**

Lifestyle Modification and Stroke Prevention

Antioxidants

- Antioxidants are substances that help the body get rid of potentially harmful molecules called free radicals.

- The presence of free radicals may play a role in development and maintenance of NCDs.

- Thus antioxidants are important to counteract the free radicals.

Antioxidants

- Examples of some antioxidants include vitamin **C**, **E**, **selenium** and **beta-carotene**

- Fresh fruit and vegetables are good sources of antioxidants.

- Other sources include green tea and red wine and …

Physical Activity and Inactivity

- Definition of Physical Activity?

- Definition of Physical Inactivity?

- Differences Between PA and Sports?

- Physical inactivity is responsible for more than 2 million deaths per year around the world

- physical inactivity has been associated with numerous CND

Lifestyle Modification and Stroke Prevention
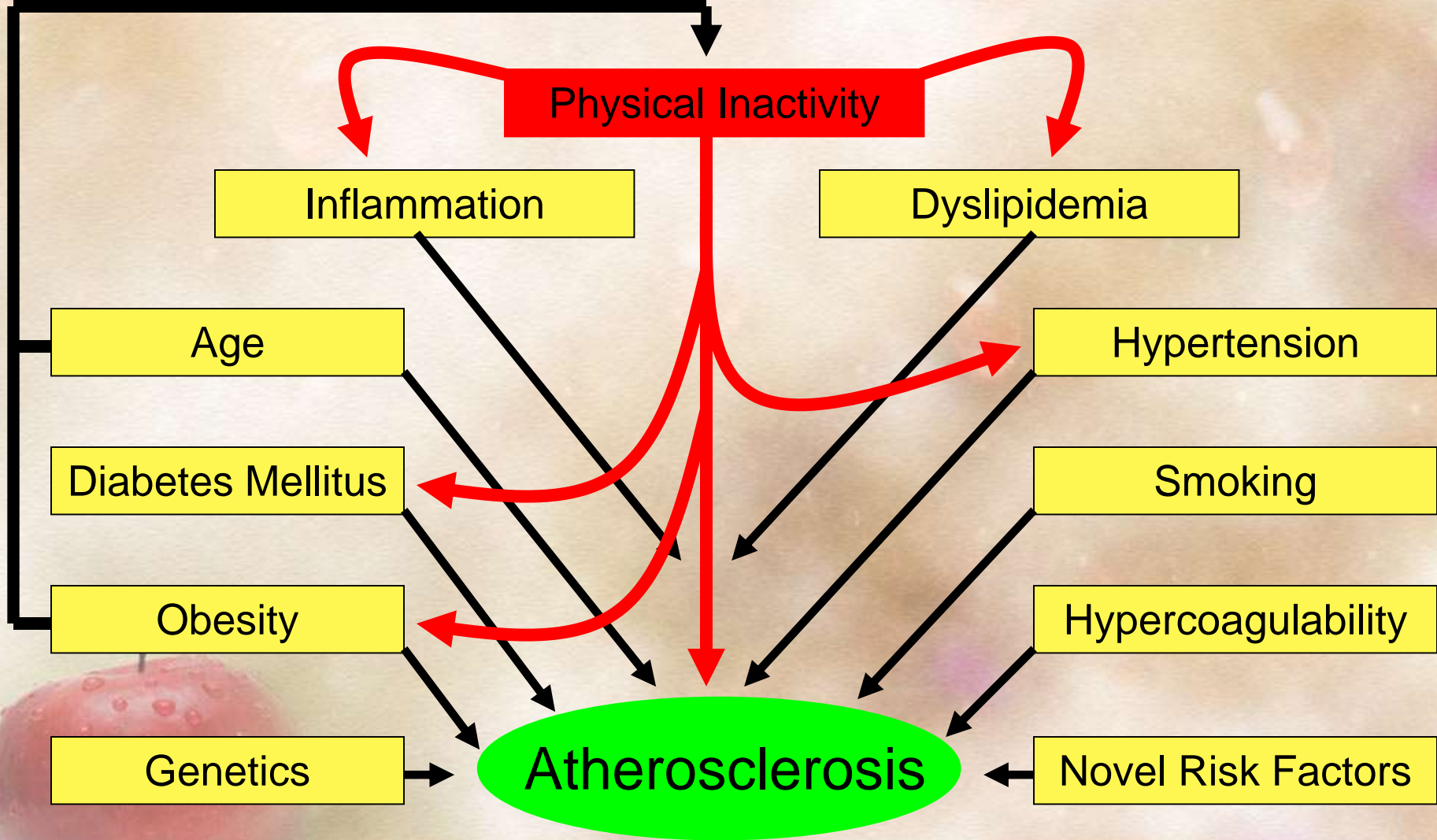
Physical Activity for Health Promotion

PA Categories

A combination of aerobic AND resistance training
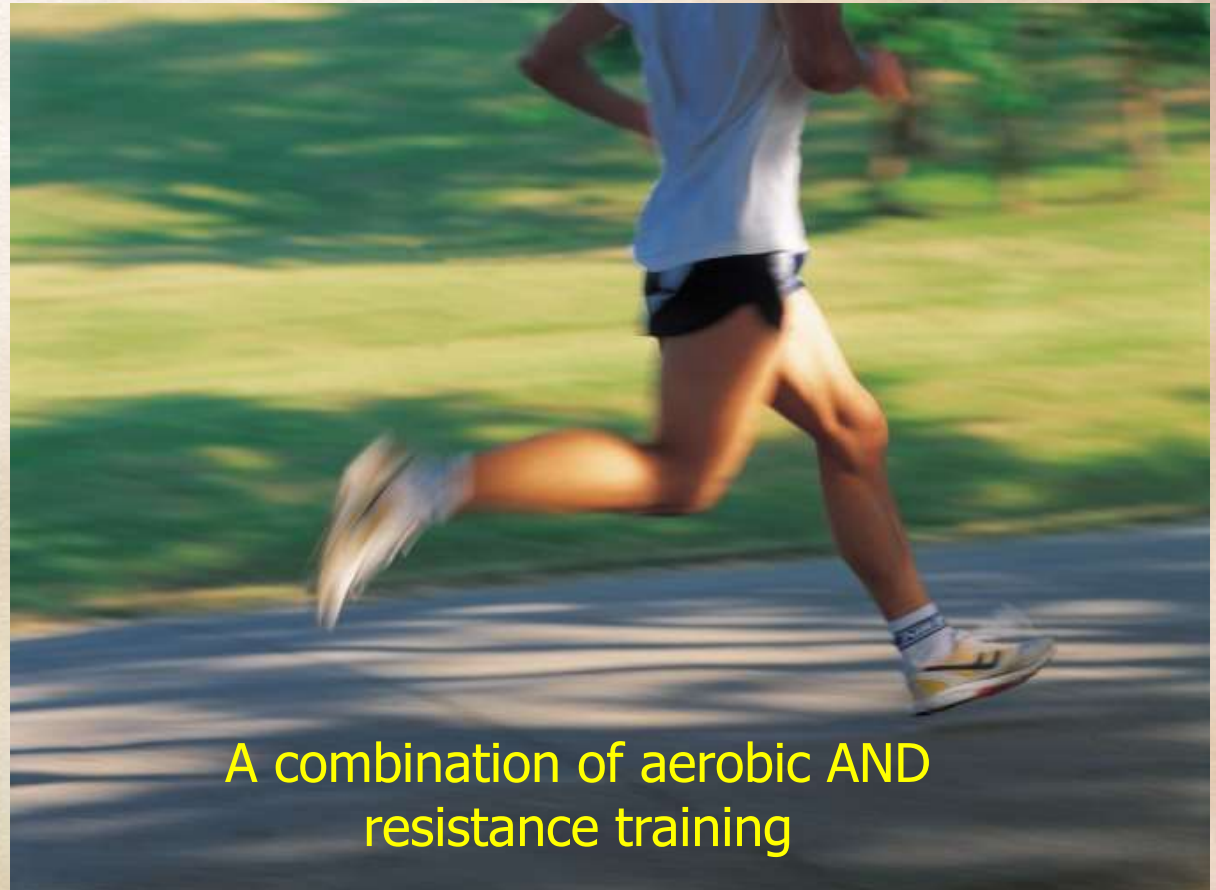
Lifestyle Modification and Stroke Prevention

Physical Activity

- Encouraging physical activity will help older adults by
  - Improving strength
  - Maintaining muscle mass
  - Improving activities of daily living
  - Feeling better both mentally and physically.
  - May influence changes in dietary habits.

Benefits of Physical Activity

- Decrease blood pressure

- Increase strength, CV endurance

- Increase balance

- Increase lung and breathing function

- Improve immune function

- Reduce depression and anxiety

- Control obesity

- ……

Lifestyle Modification and Stroke Prevention

Assessment of PA

- Subjective methods (IPAQ)
- Objective Methods (Pedometer and accelerometer)
- Criterion Methods or gold standard methods (Indirect calorimetry, and doubly labeled water)

e Modification and Stro Prevention

PA Recommendations

- ACSM/AHA guidelines focus on 30 minutes of moderate-intensity daily physical activity five days a week

- Or 75 minutes vigorous-intensity PA weekly

- Walking as a PA recommendation

Lifestyle Modification and Stroke Prevention

Steps Categories as PA levels

Sedentary (Inactive)	less than 5,000 steps a day
Low Active	5,000 – 7,499 steps a day
Somewhat Active	7,500 – 9,999 steps a day
Active	10,000 steps or more a day
Highly Active	12,500 steps or more a day

Lifestyle Modification and Stroke Prevention

The Goal of 10,000 Steps

7 Ways to Walk 10,000 Steps per Day

1. **Break up your step goal.** Consider making three smaller step goals throughout the day: a morning walk, an afternoon walk, and an evening walk. Make one a brisk 5 km walk (in whichever slot you have the most time), and then squeeze in a 20 minute walk (about 1.5 km) in the other two slots.
2. **Every Hour on the Hour.** What if I told you that you can break up your step goal even more! Set a timer on your phone or computer and walk just 5 minutes every hour of the day and you'll reach your step goal by bedtime!
3. **Power Hour.** Challenge yourself each day to accumulate as many steps as possible during one hour of the day.
4. **Buddy Up.** Walking alone can be boring at times – call up some friends to walk with you! Exercising with a friend is a lot more fun and it helps keep you accountable.
5. **Be Inefficient.** What if you deliberately tried to be inefficient any time it involved being on your feet? On days you know you've been less active, choose to be inefficient as a way to get more activity in while getting your daily chores or work done. For example, carry the laundry down the stairs in three smaller trips instead of one oversized basket.
6. **Be Efficient.** On the flipside, there are many ways you can multitask in order to get more steps in. Try looking at the commonly sedentary tasks you do each day (making phone calls, watching TV, reading, etc.) and see if you can add walking or other movement to that activity. For example, walk around while you talk on the phone.
7. **Remind Yourself Why You Walk.** We all have them – days when we'd rather do anything but more around. When those days strike, remind yourself of your goals. Ask yourself why it's important for you to be more physically active. This can be a powerful source of motivation!

Activity Classification	Steps Per Day
Highly Active	>12,500
Active	10,000-12,499
Somewhat Active	7,500-9,999
Low Active	5,000-7,499
Sedentary	<5,000

9 Ways to Walk 10,000 Steps Per Day

SPARKPEOPLE

A healthy Lifestyle and Stroke

You can do plenty to make your heart and blood vessels healthy, even if you've had a stroke. A healthy lifestyle plays a big part in decreasing your risk for disability and death from stroke and heart attack

Lifestyle Modification and Stroke Prevention

Combination of healthy lifestyle and risk of stroke

- The combination of healthy lifestyle factors is associated with lower risk of coronary heart disease, diabetes, stroke, and total cardiovascular disease.

Circulation August 26, 2008

A Low Risk Lifestyle and Chronic Diseases

- A low-risk lifestyle is associated with lower risk of stroke, especially ischemic stroke, which adds to the data on the prevention of multiple chronic diseases, including CHD and diabetes.

- This study further supports the beneficial impact of a low-risk lifestyle on the primary prevention of stroke

  - Primary Prevention of Stroke by Healthy Lifestyle chronic disease and long-term well-being, Circulation 2008

A Low Risk Lifestyle and Chronic Diseases

- A low-risk lifestyle that is associated with a reduced risk of multiple chronic diseases also may be beneficial in the prevention of stroke, especially ischemic stroke.

(*Circulation*. 2008;118:947-954.)

Lifestyle Modification and Stroke Prevention

Take Home Messages

- Lifestyle (healthy and unhealthy)
- Lifestyle diseases (NCDs)
- Lifestyle Medicine
- Stroke as one of the lifestyle diseases
- Stroke risk factors (controllable, uncontrollable, and medical)
- Lifestyle modification and stroke prevention, and rehabilitation

Lifestyle Modification and Stroke Prevention

Thank you for listening!

- Any Questions

Lifestyle Modification and Stroke Prevention

Have a healthy lifestyle!

Lifestyle Modification and Stroke Prevention