The Chinese University of Hong Kong
The Nethersole School of Nursing
CADENZA Training Programme

CTP 003: Chronic Disease Management and End-of-life Care

Web-based Course for
Professional Social and Health Care Workers

Chapter 1

Common Chronic Diseases of Older People in Hong Kong (Part I)

Lecture Outline

1. Chronic Diseases & Older People

1.1 Life expectancy in Hong Kong

1.2 Definition of health & chronic disease

1.3 Prevalence of chronic diseases in Hong Kong's older population

2. Major Age-related Changes

3. Common Chronic Diseases of Older People in Hong Kong

3.1 Hypertension

3.2 Diabetes mellitus

3.3 Arthritis

3.4 Heart failure

Chronic Diseases & Older People

Life Expectancy in Hong Kong

Life expectancy is increasing because of:

- the advancement of medicine & technology to treat the diseases & protect life
- the increase in awareness & the individual's concerns about own health condition

Click here for details

http://www.statistics.gov.hk/publication/free_reference/B8XX0003.pdf

(Census and Statistic Department, 2011)

Definition of Health

- Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity.

(WHO, 1948)

- It is a resource for everyday life, not the objective of living. Health is a positive concept emphasising social & personal resources, as well as physical capacities.

(Ottawa Charter for Health Promotion, 1986)

Do you know how older people in Hong Kong perceived their health?

Self-perceived health condition as compared with people of same age	*Percentage (%)*
Much better	*6.6*
Better	*25.4*
More or less the same	*55.4*
Worse	*11.1*
Much worse	*1.4*

(Census & Statistics Department, 2009)

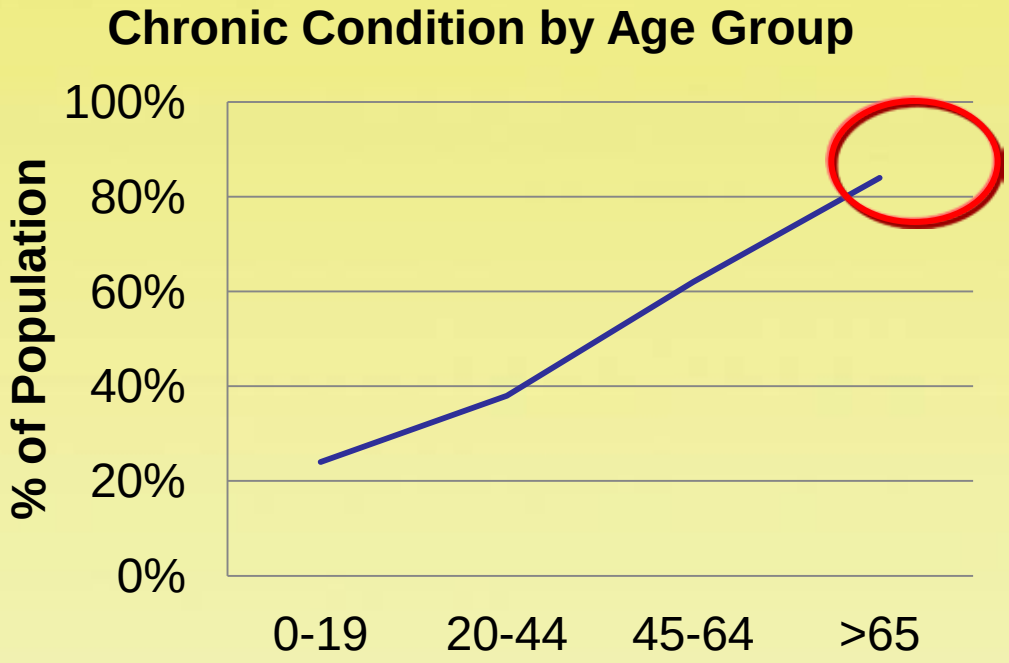
Definition of Chronic Disease

- Long duration and generally slow progression.
- The leading cause of mortality in the world.
- 60% of all deaths are due to chronic disease. Out of the 35 million people who died from chronic disease in 2005, half were under 70.

(WHO, 2010)

Older People and Chronic Diseases

Chronic diseases are common among older people:



(Gregg, 2006)

The prevalence of chronic disease in older people is higher than that of other age groups

Chronic Diseases of Older People in Hong Kong – The Facts

Older people with chronic diseases living at home

Click here for details

http://www.statistics.gov.hk/publication/stat_report/social_data/B11302402009XXXXB0100.pdf

Thematic Household Survey Report - Report No.40
Page 34

(Census & Statistics Department, 2008)

Chronic Diseases of Older People in Hong Kong – The Top 10

http://www.statistics.gov.hk/publication/stat_report/social_data/B11302402009XXXXB0100.pdf

Thematic Household Survey Report - Report No.40
Page 35

Hypertension

Diabetes

Arthritis

Eye diseases

High cholesterol

Heart diseases

Osteoporosis

Diseases of ear, nose, throat

Respiratory diseases

Stroke

(Census & Statistics Department, 2008)

AGE-RELATED CHANGE

Ageing changes have been found in all of the body's cells, tissues and organs, and these changes affect the functioning of all body systems.

(MedlinePlus, 2009)

Picture extracted from http://steveheartsill.blogspot.com/2010/08/aging-100-words.html

Age-Related Change

The most significant changes in organs through ageing:

- ***Brain***
- ***Bones & Joints***
- ***Eyes***
- ***Ears***
- ***Urogenital***
- ***Digestive system***
- ***Skin***

Brain

Decreased nerve cells and weight in brain and **spinal cord**.

Waste products are accumulated in the brain tissue as nerve cells break down, forming abnormal structures called **plaques** and **tangles**.

Messages are transmitted more slowly.

(MedlinePlus, 2009)

Myths

As adults age, many worry that they are becoming more forgetful. They think forgetfulness is the first sign of Alzheimer's Disease (AD).

(NIH Medline Plus, 2007)

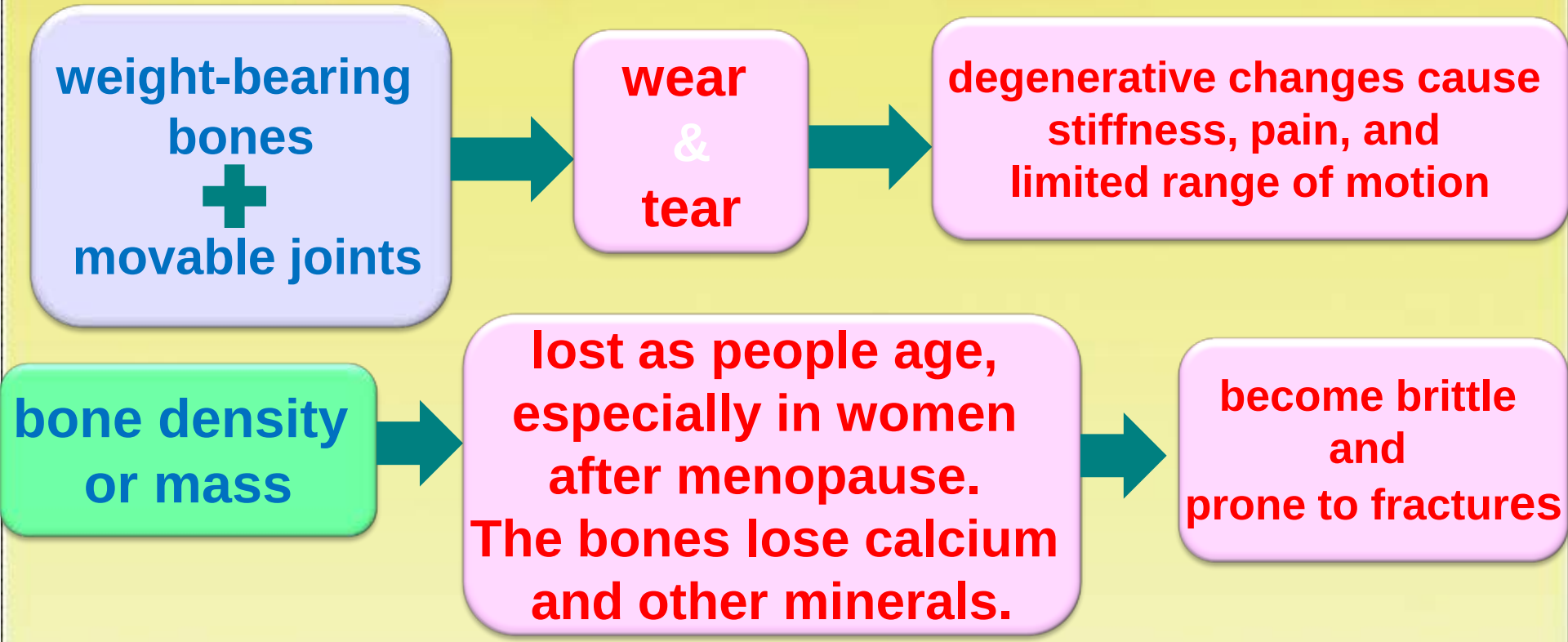
Correct

Dementia and severe memory loss are not defining as **normal processes** of aging. They are the degenerative brain disorders such as Alzheimer's disease.

(Medline Plus, 2009)

Bones and Joints

- As a body ages,



- The most common age-related conditions are:

Osteoporosis

Arthritis

(NIH Medline Plus, 2007)

Eyes

- **Eyesight weakens à about 40**
- **Cataracts** and **macular degeneration** may develop à **around 60**

(NIH Medline Plus, 2007)

Click here to see an eye with cataract

http://www.nei.nih.gov/health/cataract/cataract_facts.asp

Ears

- **Hearing Function declines** with age.
- **Ear wax** becomes **drier** and **block** the ear canal leading to hearing loss.

(Medline Plus, 2008)

- **Presbycusis** becomes more common among older people
- **Tinnitus** are also common and may cause the hearing of ringing, roaring, or some other noise inside the ears.

(NIH Medline Plus, 2007)

Urogenital

- **Urinary incontinence**
  - is the condition of loss of bladder control
  - At least 1 in 10 people age 65 or older has this problem
  - Women are more likely than men to have incontinence

(NIH Medline Plus, 2007)

The Anatomy of Incontinence

Click here for details

http://inventorspot.com/articles/incontinence_relief_leaky_ladies_7724

Urogenital

- **Prostate gland enlarges**
  - With age as some of the prostate tissue is replaced with a scar like fibrotic tissue, called benign prostatic hypertrophy (BPH), affects about 50% of men.
  - BPH cause the problems during urination but also with ejaculation as well.

(Medline Plus, 2008)

HK News about BPH

Click here for details

http://www.mingpaohealth.com/cfm/GoBack1.cfm?File=20081201/manews/vna1.txt

Digestive system

- **Tooth enamel thins**
  - teeth more vulnerable to cavities.
- **Saliva production decreases**
  - incidences of periodontal disease increase
- **Taste buds diminish**
- **The gag reflex becomes less effective**
  - increasing the risk of choking.

Digestive system

- **Gastric emptying slows**
  - causing food to remain in the stomach longer
- **Peristalsis and nerve sensation slows in the large intestine**
  - increasing the incidence of constipation with aging
- **Decrease of liver enzymes**
  - more difficult to detoxify chemicals taken into the body;
  - also causing a slower metabolism of medications in the elderly

Skin

- **Subcutaneous fat diminishes**
  - Causing feelings of coldness
- **Skin thins, less elastic**
  - Wrinkles and sagging skin.
  - Increase risk of injury
- **Blood flow to skin decrease**
  - Wounds heal slower
- **Perspiration change**
  - Difficult for the body to regulate temperature

Skin

- The pigment-containing cells (melanocytes) decrease, while the remaining melanocytes increase.

(Medline Plus, 2008)

- Smokers tend to have more wrinkles than nonsmokers of the same age as smoking damages the elastin proteins.

(NIH Medline Plus, 2007)

COMMON CHRONIC DISEASES OF OLDER PEOPLE IN HONG KONG (PART 1)

- *Hypertension*
- *Diabetes Mellitus*
- *Arthritis*
- *Heart Failure*

HYPERTENSION (HT)

- Definition
- Classification
- Prevalence & Impact
- Risk Factors
- Signs & Symptoms
- Diagnosis
- Consequences
- Management

Definition

- Hypertension means persistent high blood pressure.

(Centre for Health Protection, 2007)

- Hypertension is defined as a blood pressure ≥140/90 mmHg.

(WHO, 2006)

Classification of Hypertension

BP Classification	SBP(mmHg)		DBP(mmHg)
Normal	<120	and	<80
Prehypertension	120-139	or	80-89
Stage 1 Hypertension	140-159	or	90-99
Stage 2 Hypertension	≥160	or	≥100

(WHO, 2006)

Impact of Hypertension

According to the report from WHO:

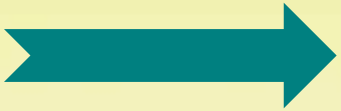
- Hypertension is a **major health problem** throughout the world because of its high prevalence and its association with increased risk of cardiovascular disease.
- It is estimated that by 2010, **1.2 billion people** will be suffering hypertension worldwide.

(WHO, 2010)

Prevalence in Hong Kong

- The Population Health Survey 2003/2004 revealed that
  - the prevalence of hypertension among people aged 15 and above was
  - **27.2%**, with 30.1% for males and 24.9% for females.
  - It increased with age,

5.2%
for people aged 15-24



73.3%
for people aged 75 and above

(Centre for Health Protection, 2007)

Risk Factors

- In majority, 90% of cases, no specific cause: **Primary Hypertension**
  - Obesity, high salt intake, stress and family history of hypertension may be related.
- In minority specific causes may be identified.
  - renal diseases, endocrine diseases and some drugs.

(Centre for Health Protection, 2007)

Symptoms

- The symptoms are **not obvious** even **without symptoms** until complications develop.
- Extremely high blood pressure may cause symptoms like **dizziness**, **visual disturbance**, **headache**, **fatigue** and **facial flushing**

(Centre for Health Protection, 2007)

- Hypertensive crisis:
  - When BP readings rise to **180 or above for the systolic** OR **110 or above for the diastolic** , for emergency medical treatment immediately.

(American Heart Association, 2010)

Diagnosis

- Uncomplicated hypertension is usually asymptomatic
- Health check is essential
- Blood pressure taken by a health care professional
- Physical examination
- Laboratory investigations
  - providing evidence of additional risk factors, searching for secondary hypertension

Complications

- Uncontrolled high blood pressure sometimes called "the silent killer" because HBP has no symptoms.
- Complications included:
  - **Damage to the heart and coronary arteries**, including heart attack, heart disease, congestive heart failure, aortic dissection and atherosclerosis
  - **Stroke**
  - **Kidney damage**
  - **Vision loss**
  - **Erectile dysfunction**
  - **Memory loss**
  - **Fluid in the lungs**
  - **Angina**

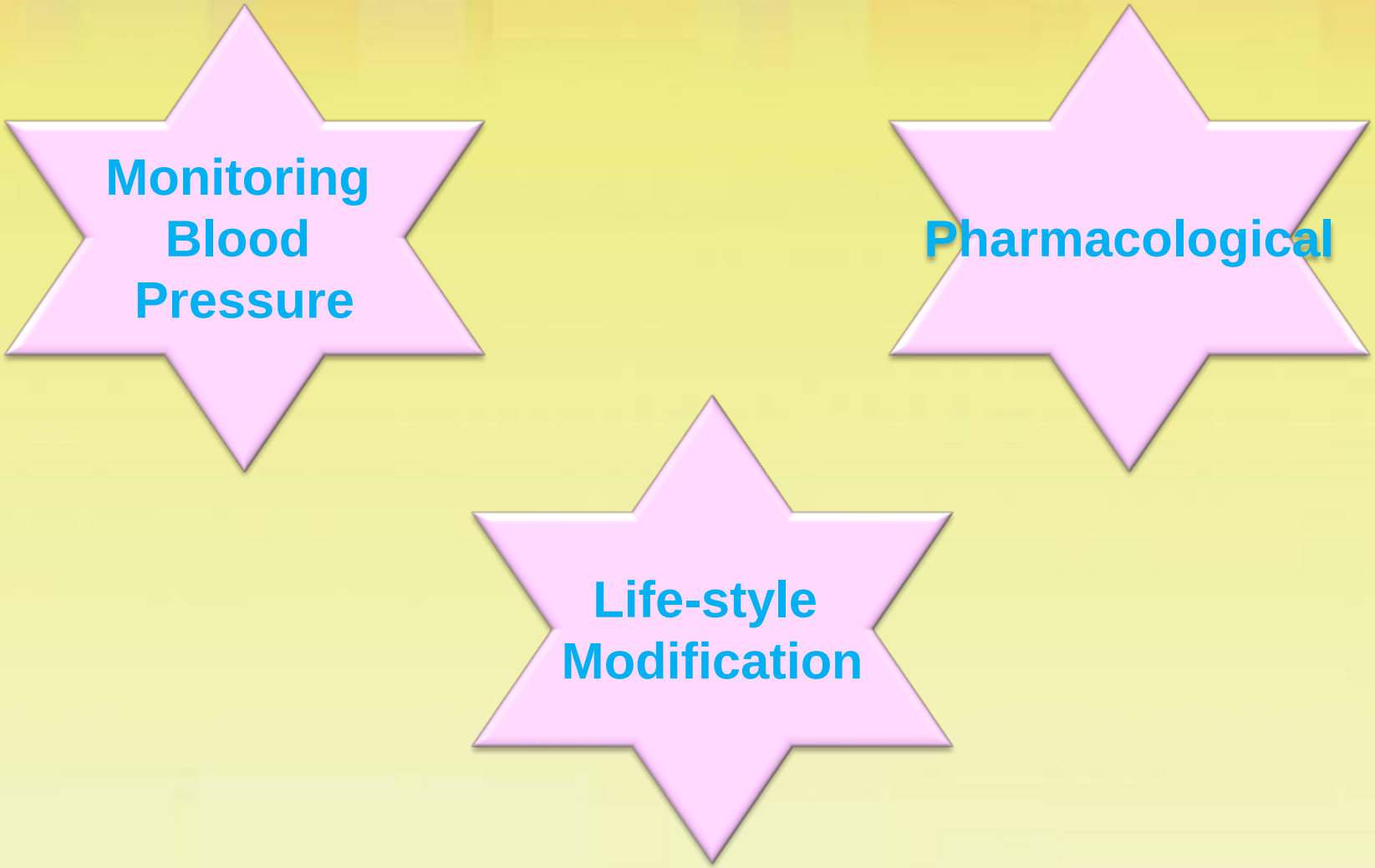
(American Heart Association, 2010)

Management

- The treatment for hypertension is to **reduce the long-term total risk of cardiovascular morbidity and mortality**.

(WHO, 2005)

Management


Monitoring Blood Pressure
Pharmacological
Life-style Modification

Monitoring Blood Pressure

- Blood pressure can fluctuate; home checking and recording of blood pressure readings can provide valuable monitoring information.

(American Heart Association, 2010)

Life-style Modification

Recommendation from AHA

- Better diet
  - reducing salt à less than 1500mg/day
- Regular physical activity
  - e. g. brisk walking, regularly for 30 minutes or longer at least 5 days a week.
- Maintain a healthy weight
  - Body Mass Index at 18.5- 22.9

(cont'd)

Life-style Modification

- Manage stress
- Avoid tobacco smoke
- Limit alcohol consumption
  - no more than two drinks per day for men and no more than one drink per day for women.
- Comply with medication prescriptions

(American Heart Association, 2010)

Pharmacological

- The aim of treatment should be to reduce blood pressure to <140/90 mmHg for most individuals
- To reach target blood pressure values of <130/80 mmHg with chronic renal disease, diabetes mellitus
- In heart failure patients, systolic blood pressure was lowered to 110–130 mmHg

(WHO, 2005)

DIABETES MELLITUS (DM)

- Definition
- Classification
- Prevalence & Impact
- Risk Factors
- Signs & Symptoms
- Diagnosis
- Complications
- Management

Definition

- ***Diabetes*** is a chronic disease, which occurs
  - when the pancreas does **not produce enough insulin**,
  - or when the body **cannot effectively use the insulin** it produces.

This leads to an **increased concentration of glucose** in the blood (hyperglycemia).

(WHO, 2009)

Classification

- ***Type 1 diabetes (insulin-dependent or childhood-onset diabetes):***
  - a lack of insulin production.
- ***Type 2 diabetes (non-insulin-dependent or adult-onset diabetes):***
  - the body's ineffective use of insulin. It often results from excess body weight and physical inactivity.

(WHO, 2010)

Prevalence in Hong Kong

- The ***2nd most common*** chronic disease among the household older people in 2008

(Census & Statistic Dept, 2009)

- The ***10th commonest cause of deaths*** in Hong Kong, accounting for 1.2% of all deaths in 2009

(Centre for Health Protection, 2010)

Number of registered deaths and crude death rate of diabetes mellitus by sex, 1981-2000

Click here for details

http://www.chp.gov.hk/en/content/9/25/59.html

(Centre for Health Protection, 2010)

Impact of Diabetes Mellitus

- Economic impact on individuals, families, health systems and countries are great. WHO estimates that in the period 2006-2015, China will lose **$558 billion** in foregone national income due to heart disease, stroke and diabetes alone

(WHO, 2009)

- Hong Kong is also facing similar impact. It is estimated that total burden imposed by diabetic patients aged 65 or above on Hong Kong's **public medical services was HK$1.4 billion** in respect to the 2006 figures and also projected that this will be increased to about **HK$3.5 billion in 2036** (at 2006 prices).

(CADENZA, 2009)

Risk Factors

- ageing
- obesity
- family history of diabetes
- inadequate physical activity
- can also be predisposed by some endocrine diseases, pancreatic diseases and drugs e.g., steroids

(Centre for Health Protection, 2010)

Signs & Symptoms

- Diabetes are often under diagnosed as its symptoms are usually considered harmless.

Classic signs:

- Frequent urination
- Unusual thirst
- Extreme hunger
- Unusual weight loss
- Extreme fatigue and Irritability

(American Diabetes Association, 2010)

Signs & Symptoms

Other Signs:

- Frequent infections
- Blurred vision
- Cuts/bruises that are slow to heal
- Tingling/numbness in the hands/feet
- Recurring skin, gum, or bladder infections

(American Diabetes Association, 2010)

Standard for blood glucose value

	Blood glucose level
Normal glucose regulation	Fasting: < 5.6 mmol/L
Impaired fasting glucose	Fasting: ≥ 5.6 to < 7 mmol/L 2 hours after meal: <7.8 mmol/L
Impaired glucose tolerance	Fasting: < 7 mmol/L 2 hours after meal: ≥ 7.8 to 11.1mmol/L
Diabetes mellitus	Fasting: ≥ 7 mmol/L; or 2 hours after meal: ≥ 11.1mmol/L

*Fasting is defined as 8 hours or above of nil by mouth

(Smart patient, Hospital Authority, 2011)

Acute Complication

Hyperglycaemia (high blood sugar)

Hypoglycaemia (low blood sugar)

Acute Complication - Hyperglycemia

- When fasting, blood glucose is ≥ 10mmol/l.
- Major signs & symptoms
  - polyphagia, polydipsia, polyuria
  - blurred vision, fatigue
  - deep rapid breathing, cardiac arrhythmia
  - stupor, coma
- Give insulin injection, then closely monitor the symptoms.
- Treat life-threatening conditions, e.g., coma, etc.
- Seek medical assistance at once

(MayoClinic, 2010)

Acute Complication - Hypoglycemia

- When the blood glucose level $\leq$ 3.0mmol/l
- May be caused by
  - over-treatment
  - mismatch in calorie intake
  - alcohol
- Major signs & symptoms
  - sweating, shakiness, dizziness, pale skin color, headache, hunger, seizure
  - confusion
  - sudden moodiness or behaviour changes
  - clumsy or jerky movements

(MayoClinic, 2010)

Treatment for Hypoglycemia

- **10-15 grams of glucose** is given orally, followed by an assessment of symptoms & a blood glucose check.
- If after 10 minutes there is no improvement, another 10-15 gram should be given; it **can be repeated up to 3 times.**
- The equivalency of 10-15 grams of glucose are **4 teaspoons of sugar** or **½ can of regular soda or juice**.
- After the acute episode has been treated, **carbohydrate** e.g. half piece of sandwich should be consumed for maintaining a normal blood glucose.

(MayoClinic, 2010)

Complications

- Diabetes increases the risk of ***heart disease*** *and* ***stroke***. 50% of people with diabetes die of cardiovascular disease because Arteriosclerosis
- ***Diabetic retinopathy*** was resulting from the accumulation of damaged small blood vessels in retina and was leading to blindness. It is approximately 2% of people become blind after 15 years of diabetes, and about 10% develop severe visual impairment.

(WHO, 2009)

Complications

- Diabetes will cause ***kidney failure***. 10-20% of people with diabetes die of *kidney failure*.
- It will also cause the reduction of blood flow, **neuropathy** in the feet increases the chance of ***foot ulcers*** and eventual ***limb amputation***.
- ***Diabetic neuropathy*** is the damage of nerve due to diabetes. The symptoms are including tingling, pain, numbness, or weakness in the feet and hands.
- The risk of death of diabetes patients is double those within diabetes.

(WHO, 2009)

Management

Management - Dietary Control

- Diet is a vital component in the overall diabetes control program.
- Diabetic diet is a **well-balanced meal plan** tailored to the *individual needs*, *tastes*, *activity level* and *life style*. Meal times and types and amounts of foods are planned and adjusted.
- Eat less fat; increase fiber; reduce sodium; food exchange.

Click the following link for the Diabetic Food Exchange List:
http://www.diabetes-and-diabetic-diet.com/diabetic_diet_food.htm

- think before you eat
- use a smaller plate
- chew slowly and completely
- savour every mouthful

Management - Exercise

- Exercise is very important in managing diabetes, combined with diet control and medication.
- Exercise can:
  - use up the body's insulin
  - burn up body fat and control weight
- A 5- to 10-minute warm-up and 15 to 30 minutes of continuous aerobic exercise (such as walking or cycling) or muscle stretching exercises, followed by a 5-minute cool down.
- Exercise should be done at least three to four times per week for 20 to 40 minutes each session.

Click the following link for recommended exercises for diabetes:
http://care.diabetesjournals.org/content/25/suppl_1/s64.full

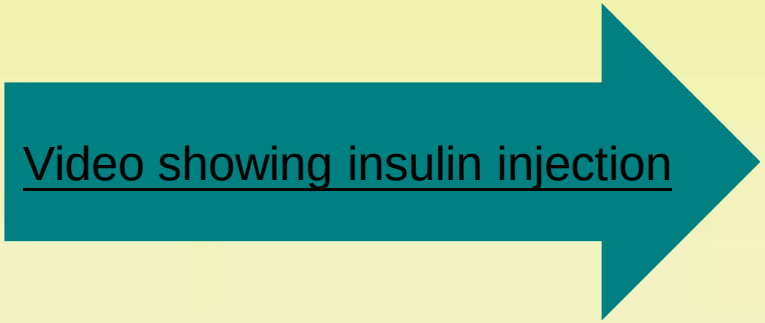
Management – Pharmacological: Oral Anti-hyperglycaemic Drugs

- Medication will be prescribed for ***type 2 diabetes*** patients if the sugar levels in blood cannot be lowered by diet control and exercise successfully.
- Insulin injections alone or in combination with oral drugs may be necessary if oral anti-hyperglycemic drugs are not successful.

(Merck, 2008)

Management – Pharmacological: Insulin Injection

- Use if oral anti-hyperglycaemic agents fails.
- It helps glucose absorption into cells.
- Insulin preparations:
  - rapid acting (Lispro, Asparte)
  - short acting (Humulin R)
  - intermediate acting (Lente insulin)
  - long acting (Ultralente, Lantus)



http://www.youtube.com/watch?v=ClHQ1WETDsU&feature=related

Monitoring

- Accurate blood sugar level monitoring and recording could provide information for adjusting, as well as preventing, fluctuation of blood sugar.
- Managing diabetes can be more difficult for older people as poor eyesight may hinder their ability to read glucose meters and dosage scales on insulin syringes accurately. They may also have problems in manipulating the syringe.
- Education and skill transfer should be done for older people in their management of diabetes.

ARTHRITIS

- Definition
- Classification
- Prevalence & Impact
- Risk Factors
- Signs & Symptoms
- Diagnosis
- Management

Definition

- **Arthritis :**

  Inflammation of one or more joints, involves the ***breakdown of cartilage***, which results in ***pain, swelling***, ***stiffness***, and ***limited movement***

- **Osteoarthritis :**

  A kind of ***chronic arthritis***, the destruction results in ***long-term pain*** and ***deformity***. Osteoarthritis is the most common type, most commonly in your hips, knees or fingers.

(MedlinePlus, 2010)

Prevalence in Hong Kong

- The ***3rd most common*** chronic disease in Hong Kong household older people

Census & Statistics Department (2009)

- A study by the Faculty of Medicine of The Chinese University of Hong Kong reveals that ***osteoartritis will become a very major public health problem in Hong Kong***, in particular to women; and; ***arthritis*** and stroke are the major cause of disability in people who were originally healthy

(CUHK Press Release, 2001)

Risk Factors

- Being overweight
- History of joint injury
- Repeated stress on the joint (baseball players, ballet dancers, and construction workers are all at risk)
- Ageing
- Disease: e.g. gout, rheumatoid arthritis, Paget's disease of bone or septic arthritis

(MedlinePlus, 2010)

Signs and Symptoms

- Pain
- Swelling
- Decrease in joint range
- Erythema (redness of the skin around a joint)
- Stiffness, especially in the morning
- Inflammation and warmth around a joint

(MedlinePlus, 2010)

Picture extracted from http://www.hispanicallyspeakingnews.com/healthy-u/details/what-causes-arthritis-pain/5040/

Diagnosis

- Tests vary depending on the suspected cause
  - Physical examination may show that fluid is collecting in the joint à called an "**effusion**"
  - Difficult to rotate the joints in some directions à known as "**limited range-of-motion**."
  - Blood tests and joint x-rays are used to check for any **infection** and **other causes of arthritis**
  - Joint fluid may be drawn out from the joint to see the specific types of arthritis

(MedlinePlus, 2010)

Management


Non-pharmacological
Lifestyle modification
Pharmacological
Exercise

Management

- Depends on
  - age
  - cause
  - occupation
  - level of injury or severity
  - single or multiple joints
  - influence on daily activities

(MedlinePlus, 2010)

Treatment aims at:
•pain reduction
• sign and symptom control
• preventing recurrence

Management - Lifestyle Modification

Making lifestyle changes without medications is preferable

- ***Rest:***
  - help recover from a flare-up more quickly
- ***Exercise:***
  - to maintain healthy joints, relieve stiffness, reduce pain and fatigue
  - To improve muscle and bone strength
- ***Lose weight:***
  - greatly improve joint pain in the legs and feet
- ***Diet:***
  - rich in vitamins and minerals, especially antioxidants like vitamin E
- ***Taking glucosamine and chondroitin --building blocks of cartilage***

(MedlinePlus, 2010)

Exercise

- Low-impact aerobic activity (also called endurance exercise)
- Mobilising exercises for improving the joint range
- Stretching exercises for flexibility
- Resistance exercises for improving muscle tone
- Comply with physiotherapist

(MedlinePlus, 2010)

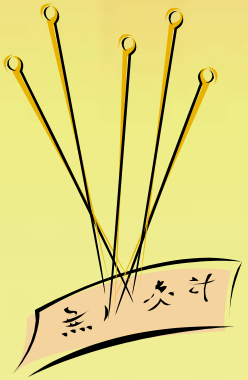
Pharmacological

A major analysis indicated that drug therapy is generally more effective than non-drug treatments.

- The following are some of the medications used in mild to severe cases:
  - Acetaminophen
  - Nonsteroidal anti-inflammatory drugs (NSAIDs) or COX-2 inhibitors
  - Capsaicin
  - Tramadol
  - Narcotic pain relievers (oxycodone, oxymorphone, or morphine)
  - Glucosamine and chondroitin (see Natural Remedies section)

(Health Central, 2006)

Non-Pharmacological Treatment



- Acupuncture
- Surgical intervention:
  - may be required if joint deformity or pain from osteoarthritis is severe
    - arthroscopic surgery
    - osteotomy
    - knee joint replacement may be required:

- knee pain that has failed to respond to conservative therapy
- inability to work because of knee pain

(Health Central, 2006)

HEART FAILURE (HF)

- Definition
- Prevalence & Impact
- Risk Factors
- Signs & Symptoms
- Diagnosis
- Management

Definition

- Heart failure is a chronic, progressive condition in which the **heart muscle is unable to pump enough blood** through the heart to meet the body's needs for blood and oxygen.
- Basically, the heart can't keep up with its workload.

(American Heart Association, 2010)

Prevalence in Hong Kong

Heart Disease:

- is the ***6th most common*** chronic disease in household older people

(Census & Statistics Department, 2009)

- the ***2nd leading cause of mortality*** in 2008

(Center of Health Protection, 2009)

Risk Factors

- Age:
  - reduced blood-pumping ability of our hearts as we age
- Lifestyle factors:
  - smoking
  - overweight
  - eating foods high in fat and cholesterol
  - physical inactivity
- Other health conditions:
  - coronary artery disease
  - myocardial infarction
  - high blood pressure (hypertension)
  - heart muscle disease
  - abnormal heart valves
  - diabetes & severe lung disease

(American Heart Association, 2010)

Signs & Symptoms

- Shortness of breath (also called dyspnea)
- Persistent coughing or wheezing
- Buildup of excess fluid in body tissues (edema)
- Tiredness, fatigue
- Lack of appetite, nausea
- Confusion, impaired thinking
- Increased heart rate

(American Heart Association, 2010)

Diagnosis

- Physical examination
- Blood tests
- Chest X-ray
- Electrocardiogram (ECG)
- Echocardiography (Echo)
- Exercise stress test (Treadmill)
- Coronary angiography (Coronary Arteriography)

Management

Lifestyle modification

Non-pharmacological

Pharmacological

Exercise

Cardiac Rehabilitation

Management –Lifestyle Modification

- Quit smoking; avoid alcohol, caffeine
- Control body weight
- Limit daily fluid intake
- Monitor blood pressure
- Adequate rest
- Avoid flu and pneumonia with vaccinations
- Heart healthy diet

(American Heart Association, 2010)

Management –Lifestyle Modification

Diet Recommendations from AHA:

- Low in saturated fat, trans fat, cholesterol and sodium**.**
- **Fruits and vegetables:** at least 4.5 cups a day
- **Fish (preferably oily fish):** at least two 3.5-ounce servings a week
- **Sodium:** less than 1,500 mg a day
- **Sugar-sweetened beverages:** no more than 450 calories (36 ounces) a week
- **Saturated fat:** less than 7% of total energy intake

(American Heart Association, 2010)

Management – Pharmacological

- Heart failure patients need multiple medications
- Each one treats a different symptom or contributing factor
- Usually helps to **improve blood flow** & **decrease the workload** on the heart, e.g. remove water from the bloodstream
- **Increases the force** of the heart's contractions
- **Slow the heart rate** & **lower blood pressure**

(American Heart Association, 2010)

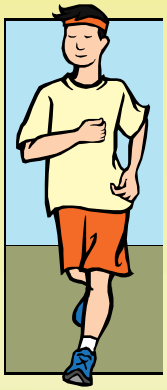
Management - Non-Pharmacological

- is recommended for **correctable problems** that caused heart failure
  - such as a defect or a blocked coronary artery may need Precutaneous Coronary Intervention (PCI) or Coronary Artery Bypass.
- surgery also may be considered if the condition cannot be improved by medications or dietary and lifestyle changes.

(American Heart Association, 2010)

Management – Exercise

- Aerobic exercise is the preference, e.g., stair climbing, jogging
  - it can improve exercise tolerance
  - helps the heart & the body get stronger & work better
  - it can lift the spirits



(Jonsdottir, 2006; Yu, Lee, Woo& Hui, 2007)

Cardiac Rehabilitation programme

- It is a **multidisciplinary program** starts with the hospital & continuing in the community until the client is completed rehab from heart disease
- Goals of the program are:
  - to stabilize, slow or even reverse the progression of cardiovascular disease
  - to help people recover from heart diseases & heart surgery
  - to reduce the risk of another cardiac event or death
- The program includes:
  - counseling on the symptoms management
  - exercise programs
  - education on disease management

Other chronic diseases will be discussed in Chapter 2

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End of Chapter 1