A close-up photograph of a person's feet wearing dark hiking boots with red laces, stepping on a rocky and dry, brush-covered trail. The background is a blurred landscape of dry grass and hills under a clear sky.

EXERCISE AS A MEDICINE

Integrating Exercise into Clinical Care

“Prescribing Guide to Internists”

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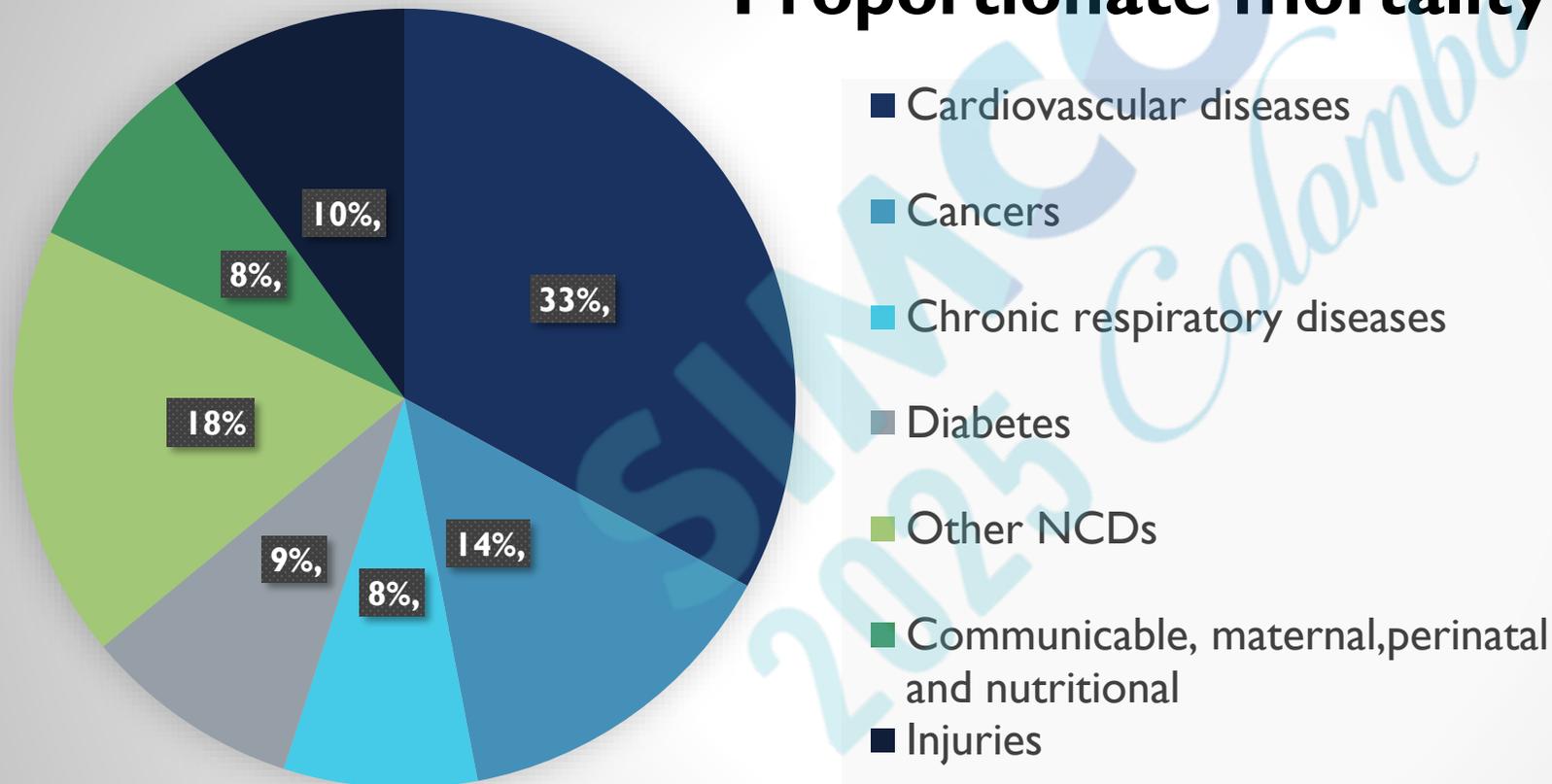
**NO CONFLICT OF INTEREST
TO DECLARE**

Outcomes

- NCD burden in SL and risk factors vs premature death
- Sedentary behavior and physical fitness
- What is physical activity and exercise
- Benefits of regular physical activity
- Why we are physically inactive and ? What are the barriers
- Components and appropriate exercise prescription
- Exercise guidelines for health benefits
- Overview of exercise guideline for NCD's – DM/HTN/CVD
 - Indications and contraindications for exercise in cardiac subjects
 - Special considerations and precautions

NON COMMUNICABLE DISEASE BURDEN IN SRI LANKA

Proportionate mortality



Only 8% communicable diseases, maternal, pre-natal and nutritional

10% injuries

82% Chronic NCD

WHO 2018

**LIFE STYLE
RELATED RISK
FACTORS FOR
PREMATURE
DEATHS
OVER 6000 ADULTS**

Risk factor	45-64 years Hazard ratio (95% CI)
DM	3.25 (2.04-5.19)
Smoking	1.56 (1.23-1.99)
Physical inactivity	1.40 (1.05-1.87)
BMI >30.0	1.35 (0.96-1.89)
High BP	1.35 (1.06-1.7)
High cholesterol	1.14 (0.89-1.44)

RISK OF EARLY DEATH



Large study conducted by Northwestern University in Chicago and the University of Surrey in the United Kingdom involving more than a half a million people, a combination of **physical inactivity, poor sleep and diabetes—predominantly Type 2** increases a person's risk of early death by a whopping **87 percent**

SEDENTARY BEHAVIOUR

- **Sedentary Behavior** - lack of physical activity. Activities that do not increase energy expenditure above the resting level
- Defined as activities with energy expenditures ≤ 1.5 METs while in a sitting or reclined posture for **4 or more hours** at a stretch per day (e.g. seated, watching television, video gaming, and computer)

- One MET is the rate of energy expenditure while sitting quietly (resting metabolism)
- 5 METs means you are using 5 times the energy you would use at rest
- Calories Burned = METs x Weight (kg) x Time (hours)**

PHYSICAL ACTIVITY SAME AS EXERCISE ?



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PHYSICAL ACTIVITY AND EXERCISE



Physical activity is any bodily movement produced by contraction of skeletal muscles that increases energy expenditure above resting levels and comprises routine daily tasks such as commuting, occupational tasks, or household chores, as well as purposeful health-enhancing movements/activities



Exercise is a component of physical activity that is planned, structured, and repetitive with the intent of improving or maintaining health

OVERALL BENEFITS OF REGULAR EXERCISE

- Raises HDL ("good") cholesterol
- Lowers the risk of developing type II diabetes by 58%
- Reduces heart diseases and high blood pressure by nearly 40%
- Lowers the risk of a stroke by 27%
- Reduces and maintains body weight
- Prevents or reduces osteoporosis
- Improves low back pain
- Improves sleep
- Reduces depression
- Reduce mortality and the risk of recurrent breast cancer by nearly 50% in the case of a Female.
- Lowers the risk of colon cancer by over 60%
- Reduces the risk of developing of Alzheimer's disease by nearly 40%
- Minimizes the risky behaviors eg: smoking, alcohol, substance use
- Improves psychological well-being, including gaining more self-confidence and higher self-esteem.

COMPONENTS OF PHYSICAL FITNESS

HEALTH-RELATED COMPONENTS OF FITNESS



STRENGTH



**CARDIOVASCULAR
ENDURANCE**



FLEXIBILITY



**MUSCULAR
ENDURANCE**



**BODY
COMPOSITION**

SKILL-RELATED COMPONENTS OF FITNESS



AGILITY



SPEED



REACTION TIME



BALANCE



POWER



COORDINATION

WHY WE ARE PHYSICALLY INACTIVE ?

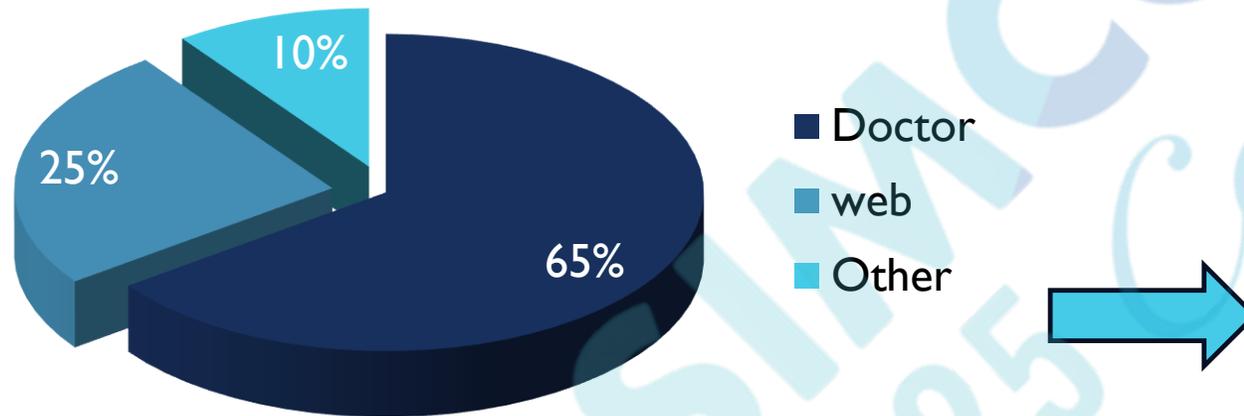
Personal & Physical Factors

- Lack of time
- Lack of motivation
- Lack of energy
- Poor skills - lack self-management skills and like goal-setting
- Social environment
- Insufficient knowledge & Fear of injury

Environmental & Social factors

- Urbanization
- Technology
- Transportation
- Work

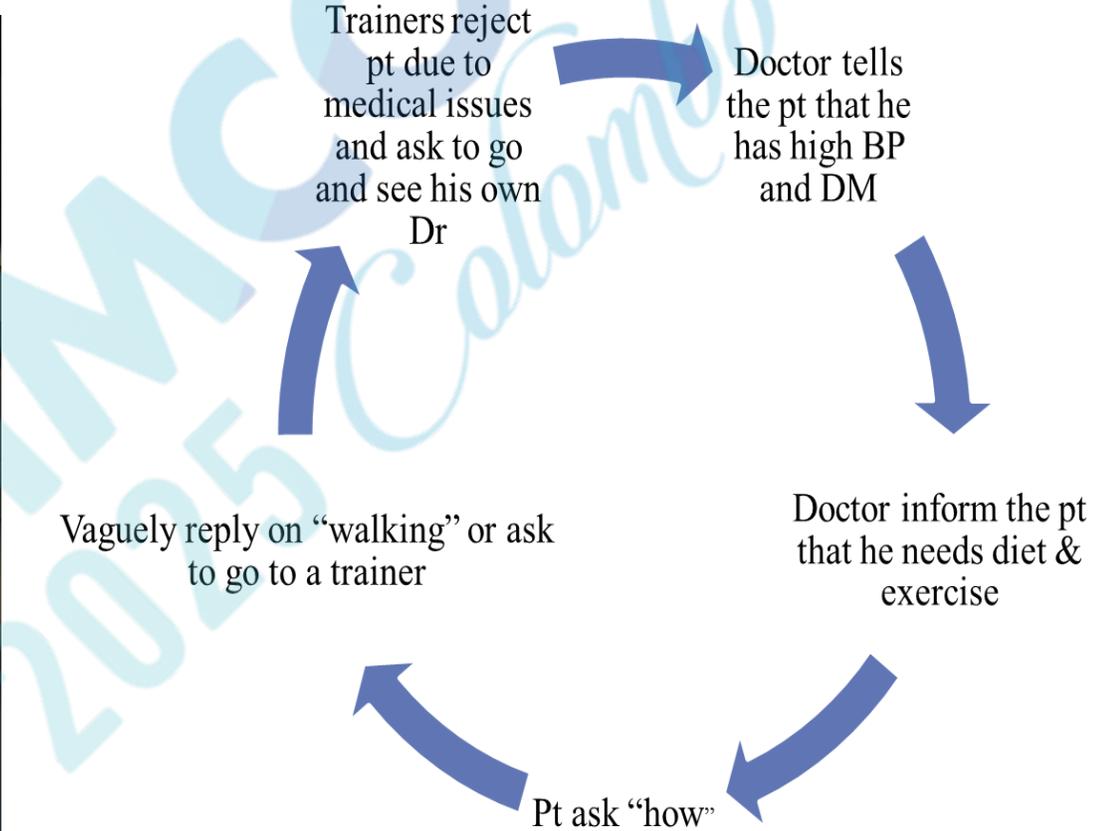
WHAT ARE THE BARRIERS ?



Four out of ten doctors (41%) talk about the importance of exercises, but don't always offer suggestions on the best ways to be physically active

ACSM survey;
Nearly 2/3 of patients (65%) are more interested in exercises to stay healthy **if advised by their doctors**

EXERCISE PRESCRIBING BARRIER



HOW TO OVERCOME SEDENTARY BEHAVIOR

At home

- Increase household chores
- Home gardening
- Reduce screen time – TV, computer, phone
- Play with kids
- Walk more – park from far location
- Take stairs
- Increase standing time, avoid sitting/lying

At Work place/travelling

- Walk more, 10000 steps/day
- Get down at least one halt before the destination and walk
- Take stairs instead of elevators
- Maximize standing time
- Standing desks/ walking meetings
- Small exercise sessions
- Change in posture at least hourly

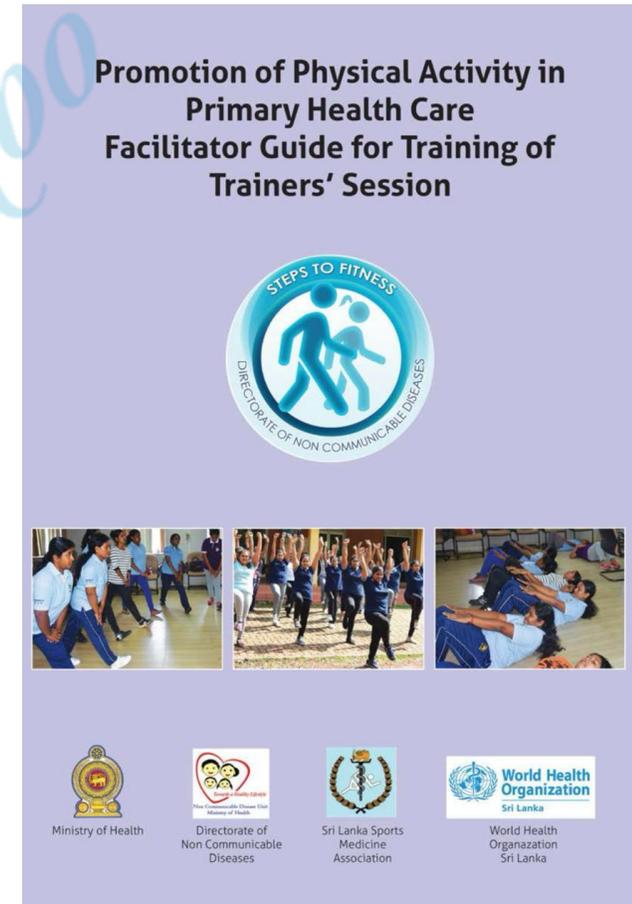
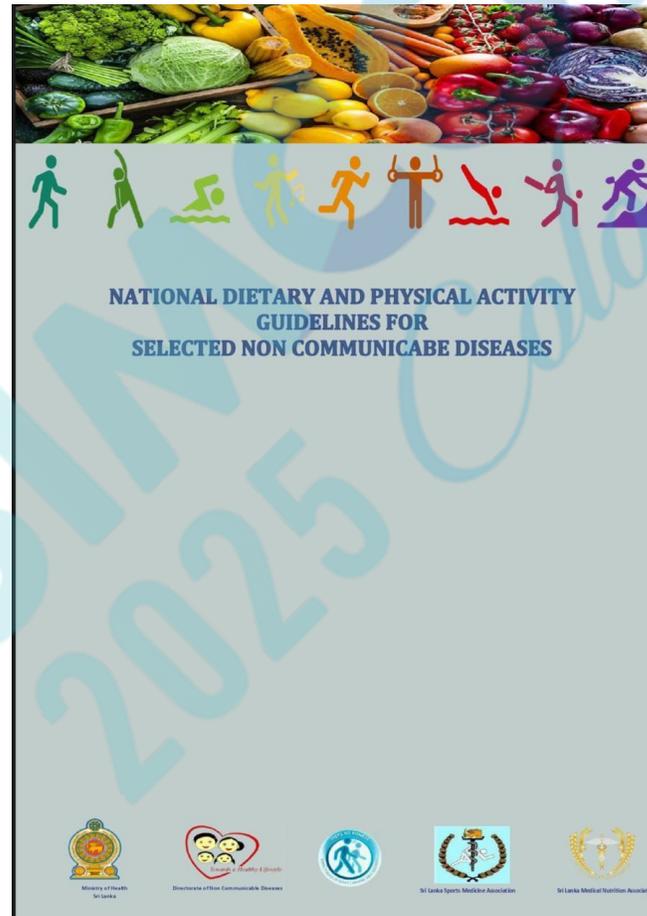
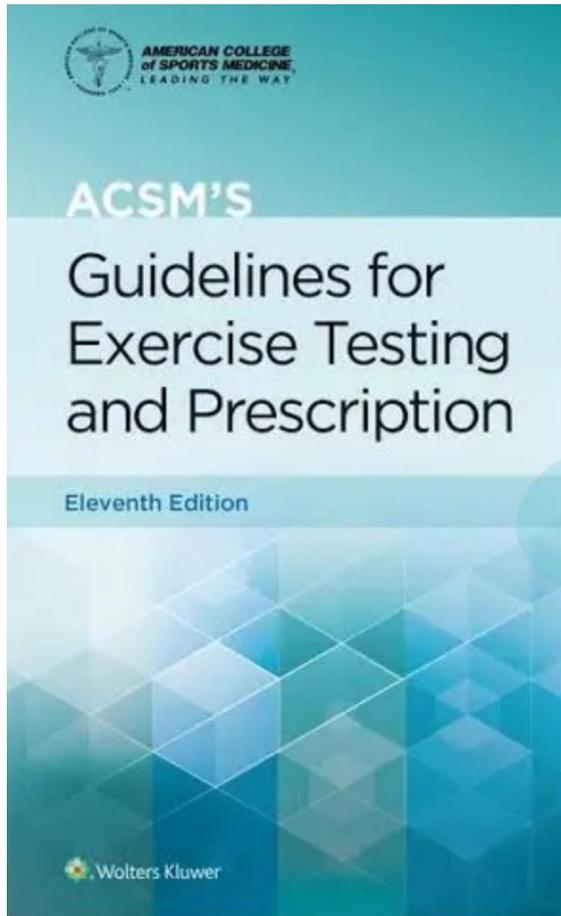
Time to think about how to perform exercise intervention



EXERCISE PRESCRIPTION GUIDE



ACSM & NATIONAL PHYSICAL ACTIVITY AND EXERCISE GUIDELINES



STAGES OF BEHAVIORAL CHANGE



1. Pre-contemplation

Not intending to start changing in the near future

2. Contemplation

Seriously considering change

3. Preparation

Ready to change

4. Action

Starts to make changes

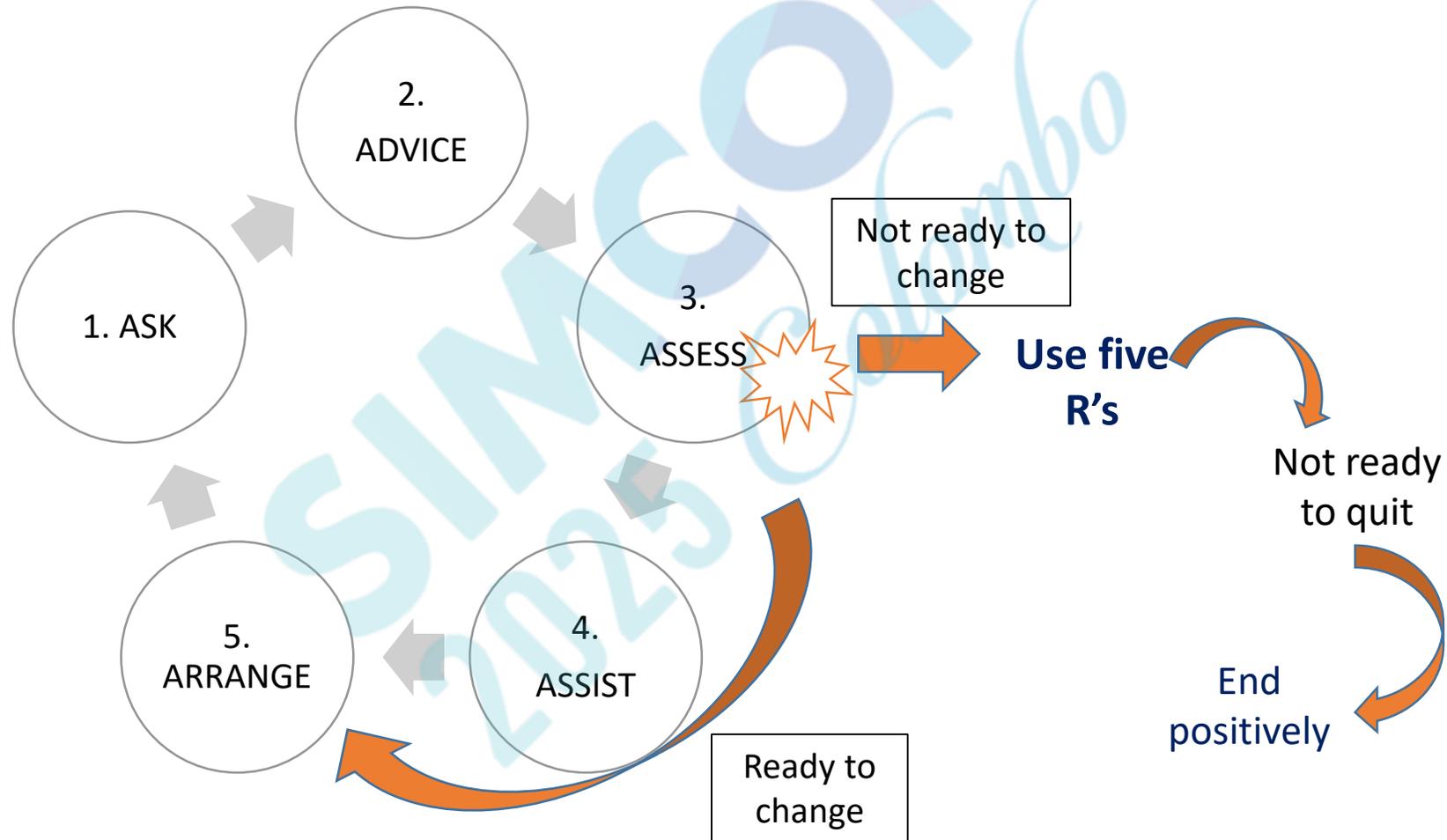
5. Maintenance

Maintains the behavior change

Transtheoretical Model (TTM)

Remember, Relapse can occur at any stage

Brief Intervention - Motivation



COMPONENTS OF EXERCISE PRESCRIPTION – FITT VP

- **F** - Frequency (how often)
- **I** - Intensity (how hard)
- **T** - Type (type of activity)
- **T** - Time (duration of exercise)
- **V** - Volume
- **P** - Progression

EXERCISE SESSION

- Warm-up
- Dynamic stretching
- Cardiovascular endurance (aerobic) / Resistance exercises (strength) / Balance training
- Warm down
- Flexibility- static stretching

- **Special precautions- based on fitness and existing illness**

SCREENING FOR RISK

PHYSICAL ACTIVITY READINESS QUESTIONNAIRE (PAR-Q+) ASSESSMENT

- Do you have a heart condition or high blood pressure?
- Do you feel pain in your chest at rest, during daily activities, or when you do physical activity?
- Do you lose your balance because of dizziness or have lost consciousness in the last 12 months?
- Have you ever been diagnosed with another chronic medical condition other than IHD & HTN
- Are you currently taking prescribed medications for a chronic medical condition?
- Do you currently or within past 12 months have a bone, joint or soft tissue problem that could be made worse by becoming more physically active?
- Were you that you should only do medically supervised physical activity ?

Physical Activity Readiness Questionnaire - PAR-Q (revised 2007)

PAR-Q & YOU

(A Questionnaire for People Aged 15 to 69)

Regular physical activity is fun and healthy, and increasingly more people are starting to become more active every day. Being more active is very safe for most people. However, some people should check with their doctor before they start becoming much more physically active.

If you are planning to become much more physically active than you are now, start by answering the seven questions in the box below. If you are between the ages of 15 and 69, the PAR-Q will tell you if you should check with your doctor before you start. If you are over 69 years of age, and you are not used to being very active, check with your doctor.

Common sense is your best guide when you answer these questions. Please read the questions carefully and answer each one honestly: check YES or NO.

YES	NO	
<input type="checkbox"/>	<input type="checkbox"/>	1. Has your doctor ever said that you have a heart condition and that you should only do physical activity recommended by a doctor?
<input type="checkbox"/>	<input type="checkbox"/>	2. Do you feel pain in your chest when you do physical activity?
<input type="checkbox"/>	<input type="checkbox"/>	3. In the past month, have you had chest pain when you were not doing physical activity?
<input type="checkbox"/>	<input type="checkbox"/>	4. Do you lose your balance because of dizziness or do you ever lose consciousness?
<input type="checkbox"/>	<input type="checkbox"/>	5. Do you have a bone or joint problem (for example, back, knee or hip) that could be made worse by a change in your physical activity?
<input type="checkbox"/>	<input type="checkbox"/>	6. Is your doctor currently prescribing drugs (for example, water pills) for your blood pressure or heart condition?
<input type="checkbox"/>	<input type="checkbox"/>	7. Do you know of any other reason why you should not do physical activity?

If YES to one or more questions

Talk with your doctor by phone or in person BEFORE you start becoming much more physically active or BEFORE you have a fitness appraisal. Tell your doctor about the PAR-Q and which questions you answered YES.

- You may be able to do any activity you want — as long as you start slowly and build up gradually. Or, you may need to restrict your activities to those which are safe for you. Talk with your doctor about the kinds of activities you wish to participate in and follow his/her advice.
- Find out which community programs are safe and helpful for you.

NO to all questions

If you answered NO honestly to all PAR-Q questions, you can be reasonably sure that you can:

- start becoming much more physically active — begin slowly and build up gradually. This is the safest and easiest way to go.
- take part in a fitness appraisal — this is an excellent way to determine your basic fitness so that you can plan the best way for you to live actively. It is also highly recommended that you have your blood pressure evaluated. If your reading is over 144/94, talk with your doctor before you start becoming much more physically active.

DELAY BECOMING MUCH MORE ACTIVE:

- If you are not feeling well because of a temporary illness such as a cold or a fever — wait until you feel better; or
- If you are or may be pregnant — talk to your doctor before you start becoming more active.

PLEASE NOTE: If your health changes so that you then answer YES to any of the above questions, tell your fitness or health professional. Ask whether you should change your physical activity plan.

Informed Use of the PAR-Q: The Canadian Society for Exercise Physiology Health Canada, and their agents assume no liability for persons who undertake physical activity, and if in doubt after completing this questionnaire, consult your doctor prior to physical activity.

No changes permitted. You are encouraged to photocopy the PAR-Q but only if you use the entire form.

NOTE: If the PAR-Q is being given to a person before he or she participates in a physical activity program or a fitness appraisal, this section may be used for legal or administrative purposes.

"I have read, understood and completed this questionnaire. Any questions I had were answered to my full satisfaction."

NAME: _____

SIGNATURE: _____ DATE: _____

SIGNATURE OF FRIEND OR GUARANTOR (for participants under the age of majority): _____ WITNESS: _____

Note: This physical activity clearance is valid for a maximum of 12 months from the date it is completed and becomes invalid if your condition changes so that you would answer YES to any of the seven questions.

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WHAT ARE THE TYPES OF EXERCISES



WHAT IS AEROBIC / CARDIORESPIRATORY EXERCISE

- Increase breathing and heart rates
 - Improve the health of heart, lungs, and circulatory system
 - Healthy body composition and weight
 - Keep you healthy
 - Improve your fitness
 - help you perform the tasks you need to do every day
- *Brisk walking or jogging*
 - *Yard work (mowing, raking)*
 - *Dancing*
 - *Swimming*
 - *Biking*
 - *Climbing stairs or hills*
 - *Skipping exercises*
 - *Chair aerobics*
 - *Playing tennis or basketball*

AEROBIC EXERCISE INTENSITY GUIDELINES

Intensity	Subjective measures		Physiological / relative measures		Absolute measures	
	Talk test	Rate of perceived exertion (RPE)		% of maximum heart rate (HRM)		% of heart rate reserve (HRR) or VO ₂ R
		20 points scale	10 points scale			
Light	Able to talk or sing	<10	<3	<64 %	<40 %	<3
Moderate	Able to talk but not sing	11-16	3-4	64-76 %	40-60 %	3-6
High	Difficult to talk	>17	≥5	>76	>60	>6

EXERCISE INTENSITY

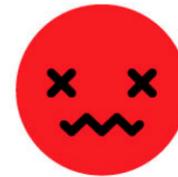
RATING PERCEIVED EXERTION

JUST NOTICEABLE

LIGHT

HEAVY

ALMOST MAX



0

1

2

3

4

5

6

7

8

9

10

NOTHING
AT ALL

VERY
WEAK

WEAK

MODERATE

SOMEWHAT
STRONG

STRONG

VERY
STRONG

VERY,
VERY
STRONG

EXERCISE INTENSITY

HR
220 - AGE
max

Example:
Age: 40 years old
 $220 - 40 = 180 \rightarrow$ maximum heart rate
 $180 - 63 = 117 \rightarrow$ heart rate reserve

wikiHow

Heart Rate Reserve (HRR)
 $HR_{max} - RHR = HRR$
 $180 \text{ bpm (HR}_{max}) - 63 \text{ bpm (RHR)}$

 117 bpm

Target Heart Rate
 $THR = HR_{max} \times \text{desired \%}$
OR
 $HRR \times \text{desired \%}$

INTENSITY AND METABOLIC COST

Sedentary <1.5 METs <40% of max HR	Light 1.6 – 3 METs 40-55 % max HR RPE <3	Moderate 3-6 METs 55-70 % max HR RPE 3-4	Vigorous >6 METs 70-90 % max HR RPE >5
Driving	Casual walking 3 km/hour	Brisk walking 3-5 km/hour Downhill walking	Walking > 7 km/hour Jogging/running
Sitting, watching TV	Cycling below 12 km/hour	Cycling 12-16 km/hour on level terrain	Cycling > 16 to 24 km/hour on level terrain or uphill cycling
Using computer	Cooking, playing instrument	Low impact dancing	High impact dancing Competitive sports

MODERATE AND VIGOROUS INTENSITY EXERCISES

Moderate-intensity physical activity requires a moderate amount of effort and noticeably accelerates the heart rate	Vigorous-intensity physical activity requires a large amount of effort and causes rapid breathing and a substantial increase in heart rate
Examples of moderate-intensity exercise include:	Examples of vigorous-intensity exercise include:
<ul style="list-style-type: none"> • Brisk walking 	<ul style="list-style-type: none"> • Running
<ul style="list-style-type: none"> • Dancing 	<ul style="list-style-type: none"> • Walking/climbing briskly up a hill
<ul style="list-style-type: none"> • Gardening 	<ul style="list-style-type: none"> • Fast cycling
<ul style="list-style-type: none"> • Housework and domestic chores 	<ul style="list-style-type: none"> • Aerobics
<ul style="list-style-type: none"> • Cycling 	<ul style="list-style-type: none"> • Fast swimming
<ul style="list-style-type: none"> • Active involvement in games and sports with children/walking domestic animals 	<ul style="list-style-type: none"> • Competitive sports and games (e.g. traditional games, football, volleyball, hockey, basketball)
<ul style="list-style-type: none"> • Construction work (e.g. roofing, thatching, painting) 	<ul style="list-style-type: none"> • Heavy shoveling or digging ditches
<ul style="list-style-type: none"> • Carrying/moving moderate loads (<20kg). 	<ul style="list-style-type: none"> • Carrying/moving heavy loads (>20kg).

WHAT IS RESISTANCE EXERCISE ?

- Improve muscular fitness by exercising a muscle or a muscle group against external resistance
- Any exercise that causes the muscles to contract against an external resistance
- Increases in strength, power, muscle bulk and endurance
- External resistance can be dumbbells, exercise tubing, your own body weight, bricks, bottles of water, or any other object that causes the muscles to contract

***Free weights** – dumbbells or barbells*

Weight machines

***Medicine balls** – weighted balls*

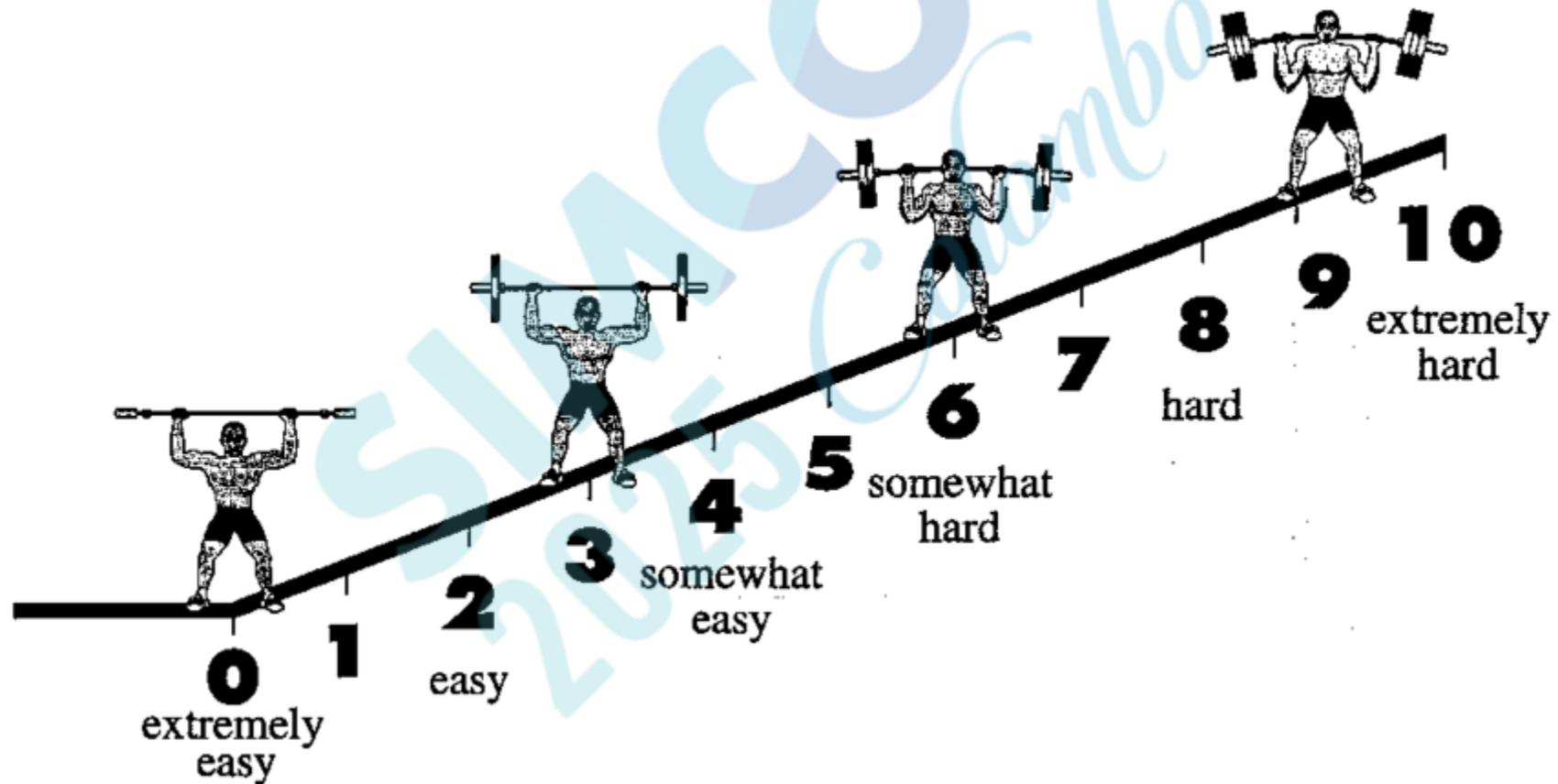
***Resistance bands** – bands provide continuous resistance through ROM*

***Your own body weight** – can be used for squats, lunges, push-ups and chin-ups, sit ups, planks*

RESISTANCE EXERCISES



OMNI RESISTANT SCALE – STRENGTH TRAINING INTENSITY



WHAT IS FLEXIBILITY EXERCISE

- Activities that help joints move through their full range of motion necessary for carrying out daily tasks
- Stretching muscles keep body stay flexible.
- Increase muscle blood flow
- Avoid discomfort when confined in a space for a long period of time

Stretches

Yoga

Tai chi

Pilates

FLEXIBILITY EXERCISES

Dynamic Stretching

40

3

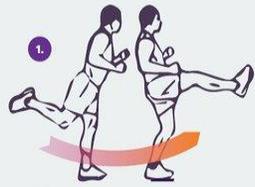
Up to 2

Rest Between Sets

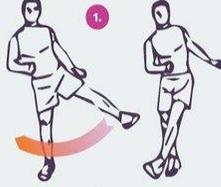
reps/each

sets

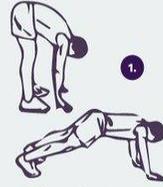
min



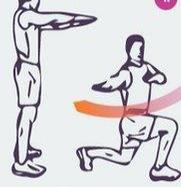
Front Swings



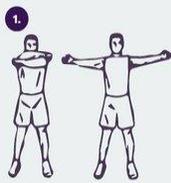
Side Cross Swings



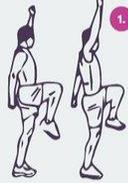
Plank Walk-Outs



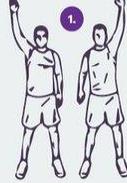
Lunge Torso Twists



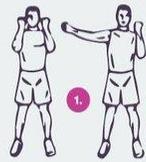
Hug Into Chest Expansion



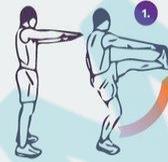
March & Reach



Arm Push-Back



Backfist Flings



Front Leg Raise Toe Tap

Static Stretching



10 Minute
Chair
Pilates
for the office



WHAT IS BALANCE EXERCISE ?

- Exercises that strengthen the muscles that help keep upright
 - Includes legs and core
 - Improve stability and help prevent falls
 - Benefit obese since weight is not always carried
 - Can be intense, like challenging yoga poses
- *Single leg standing and raising the other leg to the side or behind*
 - *Tandem gait*
 - *Chair squat*
 - *Walking while alternating knee lifts with each step.*
 - *Yoga*
 - *Tai Chi*

BALANCE EXERCISES



EXERCISE TYPES AND BENEFITS

Type	Benefits
Cardiorespiratory / Aerobic	<ul style="list-style-type: none">Improve cardio-respiratory fitnessImprove enduranceWeight reduction and maintenanceReduce visceral and peripheral fat
Resistance	<ul style="list-style-type: none">Reduce visceral and peripheral fatImprove lean body massMuscle strengthening and conditioningReduce sarcopeniaIncrease bone density
Flexibility	<ul style="list-style-type: none">Improve joint range of movementReduce muscle stiffnessAvoid musculoskeletal injuries
Balance training	<ul style="list-style-type: none">Reduce falls & improve confidence

**What is the recommended exercise volume for
a healthy life**



EXERCISE FOR SUBSTANTIAL HEALTH BENEFITS

Aerobic Exercises

150 minutes of moderate intensity or 75min of vigorous intensity activity per week. Minimum of 5 days
Can combine moderate & vigorous activities.
(1min of vigorous activity = 2min of moderate activity)

Resistance or Strength Exercises

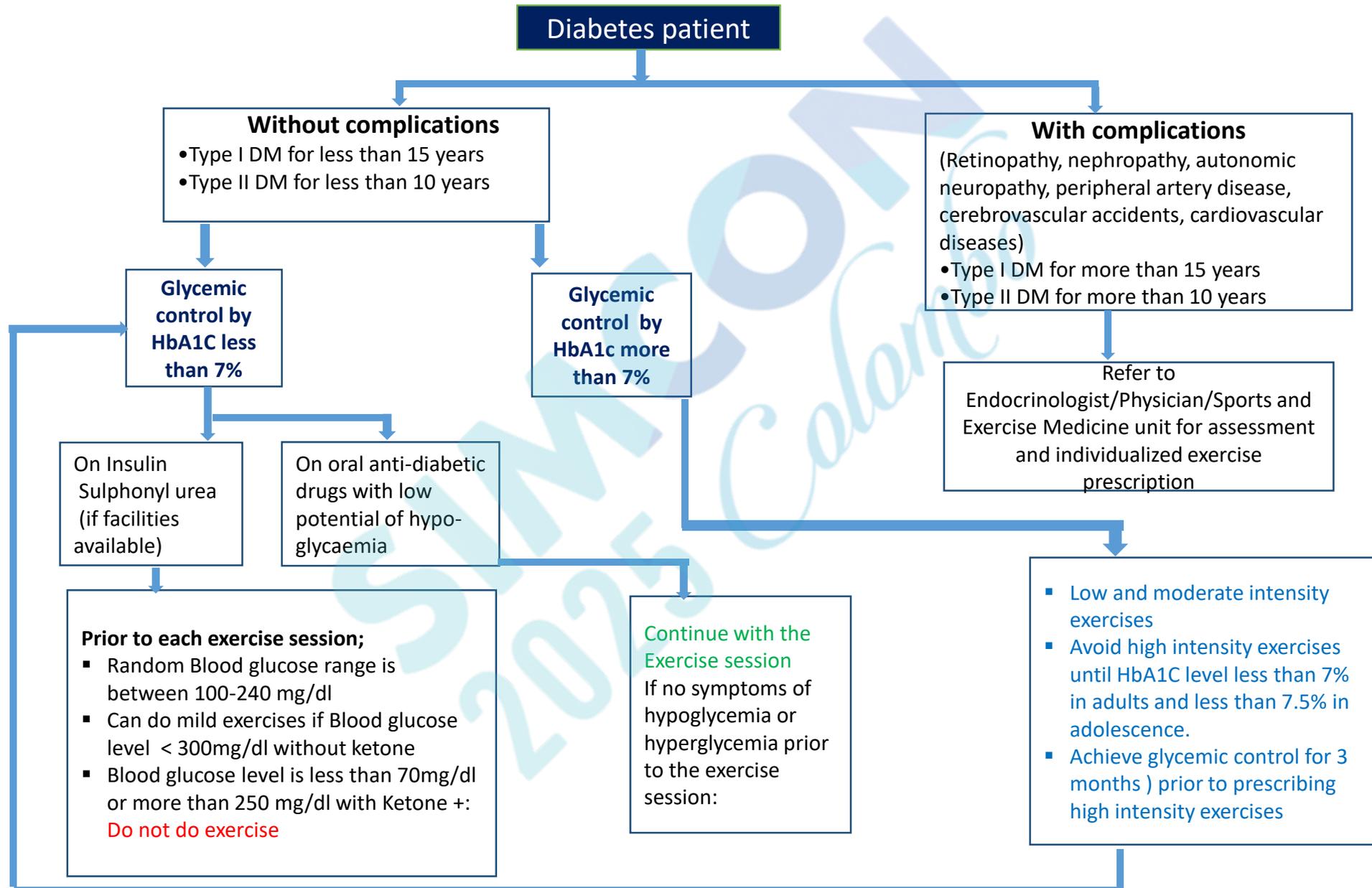
2 to 3 session in non-consecutive days per week
Moderate intensity of with 60-80% of 1 RM
8 -12 repetitions x 2-4 sets for 20-30 minutes , RPE/OMNI scale 3-5
8 – 10 different muscle groups 2 minutes rest between sets.
Body weights, free weights, resistance bands, weight machines
Pelvic floor strengthening exercises for older women

EXERCISE FOR SUBSTANTIAL HEALTH BENEFITS...

Flexibility or Stretching Exercises	Preferably on daily basis, minimum of 2-3 per week 4 or more repetitions per muscle group. Stretch to the point of feeling tightness or slight discomfort. Static stretch should be held for 20-30 seconds
Balance Exercises	Those with poor mobility should perform at least 3 days per week (≥50yrs)
Lifestyle Activities	Every day, to keep MET value between 4 and 6. Household activities, home gardening, reduce the screen time, high step counts, increase walking by parking at far locations and playing with kids
For weight loss	Double the duration (start with 150 min to reach 300 min/week)

EXERCISE PRESCRIPTION GUIDES FOR CHRONIC NCDs

SCREENING OF PATIENTS WITH DIABETES FOR EXERCISE PRESCRIPTION



Safe Blood Glucose Levels for Exercise

- ❑ 5.5 -13 mmol/l (100-240 mg/dl) – Allow for exercise
- ❑ >16.7 mmol/l (300mg/dl) without ketosis - no exercises recommended
- ❑ <4 mmol/l (70 mg/dl) or > 14 mmol/l (250 mg/dl) with Ketone +ve - Postponed exercise and correct abnormal glucose

EXERCISE AND INSULIN

TYPE 1 DM & REGULATION OF INSULIN DOSAGE

Exercise	Types	Pre- caution	Insulin adjustment
20 -30 minutes Less than 70% VO2 Max	Walking , golf, table tennis	Pre exercise 15 g of fruit exchange or 60 calories	Minimal or no
< 1 hour Moderate to vigorous	Jogging, swimming, cycling, skiing, tennis	15- 30 g rapidly absorbing carbohydrates : pre-exercise and every 30 minutes after the onset of activity . Adequate Hydration	25% reduction
> 1 hour Vigorous activity	Marathon, running, triathlon, cross country skiing	30 g or 100-120 calories in every 30 minutes Adequate hydration	30-80% reduction

What Advice for a Diabetes Patient on Exercise

Glucose monitoring before and after the exercise session for the first few sessions until a stable control

Educating the patient about the signs and symptoms of hypoglycemia

Keep records on hypoglycemic symptoms or low blood glucose level values to learn the glycemic response to exercise

Engage in exercise with a partner

During prolonged exercises, patients need to consume 15-20g of carbohydrate source intermittently

Choose relative soft terrains while performing exercises

Foot care protocol

Always carry 15-20g of a rapid acting carbohydrate source



BEWARE OF EXERCISE AND NON-DIABETIC MEDICATION

Beta blockers	Blunt HR response to exercise and adrenergic symptoms of hypoglycemia Reduce maximum exercise capacity
Diuretics	Cautions with dehydration
Statin	Increase risk of myopathy (fibrates/niacin)

MEDICAL CLEARANCE AND EXERCISE RECOMMENDATION FOR HYPERTENSION

**Asymptomatic risk group
and stage 1 and 2 HTN**

- No testing for light to moderate physical activity

HTN and documented CVD

- Medically supervised exercise testing for vigorous exercise

**Risk group without CVD or
stage 3 HTN (BP >180/110
mmHg)**

- Exercise testing prior to moderate intensity exercises but not indicated for light intensity physical activity

High intensity exercise

- Exercise testing with ECG monitoring

CONTRAINDICATION FOR EXERCISE IN HYPERTENSION



- Unstable angina
- Severe valvular heart disease – high grade AS
- LVOT
- Decompensated heart failure
- High grade A-V block (grade 3)
- Ventricular arrhythmias
- Myocarditis or pericarditis
- Aortic dissection
- Acute thrombophlebitis,
- Recent vascular embolism
- Extreme psychological issues

SPECIAL CONSIDERATIONS AND PRECAUTIONS FOR EXERCISE WITH HYPERTENSION

- **Avoid intensive isometric exercise such as heavy weight lifting**
- **Terminate exercise if SBP exceeds 220 mmHg and DBP 105 mmHg**
- **No exercise when resting BP > 200/110 mmHg**
- **Aware of signs and symptoms of hypoglycemia and heat intolerance due to β -blockers and diuretics**
- **Antihypertensive such as CCB, β -blockers and vasodilators lead to sudden reductions in post-exercise blood pressure. Extend and monitor the cool-down period carefully**
- **Use perceived exertion to monitor exercise intensity to curb β blockers effect**
- **Avoid Valsalva maneuvers during resistant exercises**
- **Seek medical attention if deterioration of exercise capacity**

EXERCISE INTERVENTION FOR CARDIAC REHABILITATION

INDICATION

- Medically stable post-MI
- Stable angina
- Post CABG surgery
- Post - PCI or other trans-catheter procedure
- Compensated congestive heart failure (CHF)
- Cardiac procedure - valvular and pacemaker insertion including ICD
- High-risk CVD ineligible for surgical intervention

CARDIAC REHABILITATION EXERCISES

CONTRAINDICATION

- Unstable angina
- Uncontrolled Blood Pressure (Resting systolic 200/110)
- Postural drop of > 20mmHg with symptoms
- Critical aortic stenosis
- Acute systemic illness or fever
- Active pericarditis or myocarditis
- Recent Pulmonary and Cerebral embolism
- Uncontrolled atrial or ventricular dysrhythmias
- Uncontrolled sinus tachycardia (> 120 beats/min)
- Uncompensated Congestive Heart Failure
- Third-degree atrioventricular (AV) block without pacemaker
- Thrombophlebitis
- Resting ST-segment depression or elevation (>2mm)
- Uncontrolled diabetes mellitus (FBS >250mg/dl)

EXERCISE FOR CARDIOVASCULAR DISEASES

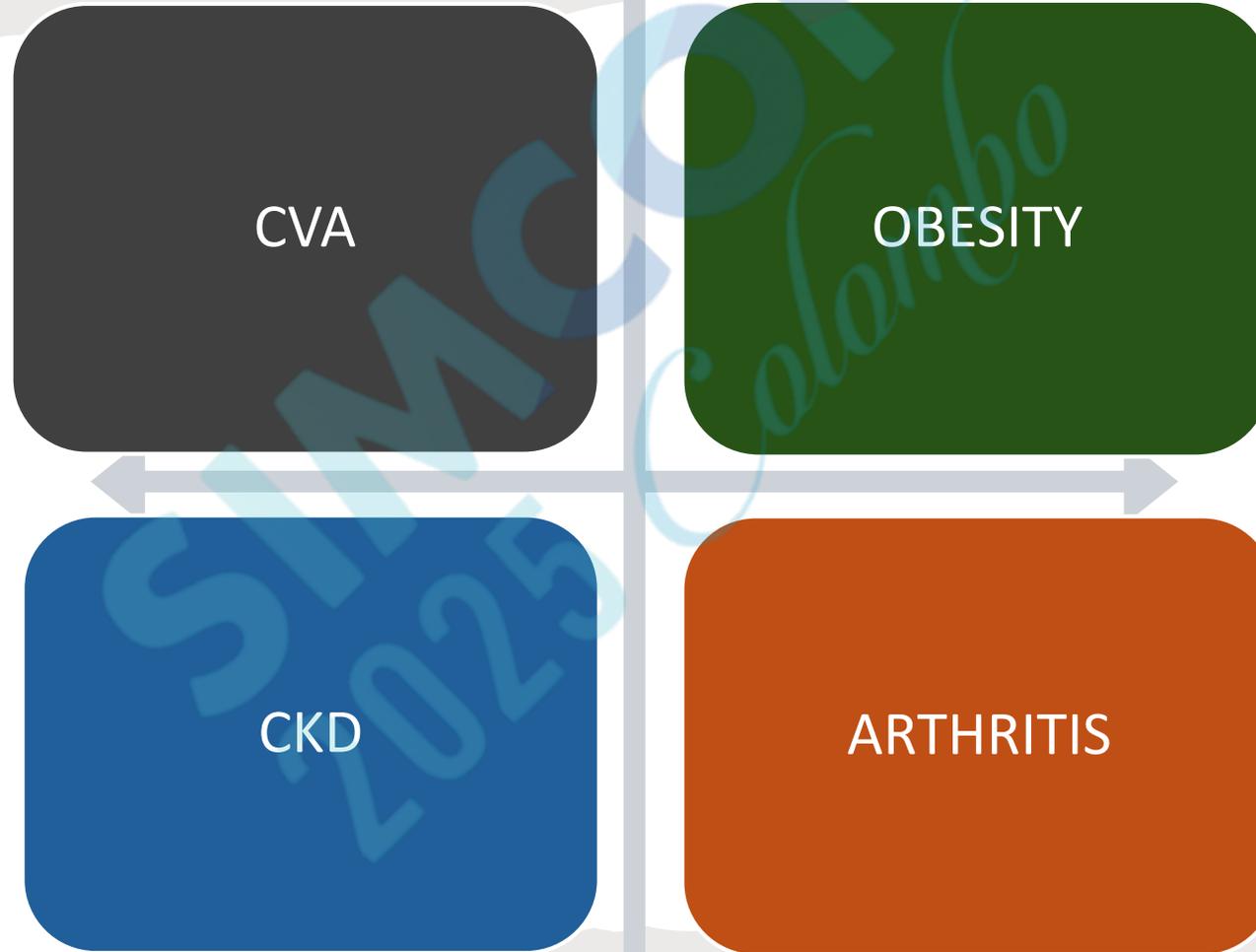
AEROBIC EXERCISE

- Frequency- 3-5days/ week
- Intensity- start with mild to moderate intensity. If no cardiac stress test available, maintain the heart rate at 20 to 30 beats above the resting heart rate or 10 beats below the ischemic threshold level.
- RPE 3- 4 level at the beginning of the exercise schedule.
- It is important to initially increase the duration than the intensity
- Time- 20- 40 mins.
- Type - walking, swimming, cycling, dancing, gardening, stationary cycling

RESISTANT EXERCISE

- No Valsalva manoeuvre
- Straining should be done during the strengthening exercises
- Frequency- 2-3 non-consecutive days/week
- Intensity - 8-10 different exercises focusing on major muscle groups.
- 10 – 15 repetitions. 3-4 RPE/ omni resistance scale [3-6]

OTHER NCDs



TAKE HOME



- ✓ Discuss benefit of exercises for health and chronic NCDs in detail
- ✓ Risk of early death is imminent without exercises
- ✓ Explore the behavioral stage prior to prescription
- ✓ Brief motivational intervention
- ✓ FITT-VP component for each prescription
- ✓ Collaborate with specialists if indicated
- ✓ Regular follow up to assess progression
- ✓ Aware of specific guidelines for common NCDs exercise intervention
- ✓ Don't forget to discuss special precautions

TIME TO STAND





THANK YOU

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