Khoo Teck Puat Hospital
NHG Health

Yishun Community Hospital
NHG Health

Adding Years of Healthy Life

Department of
Rehabilitation Services - Physiotherapy

General Exercise Guidelines for Type 2 Diabetes

REGULAR Exercise…

- **Lowers** your blood glucose level in the long run
- **Improves** cholesterol levels, blood pressure and body weight
- **Lowers** your risk of developing complications such as heart attack and stroke
- **Reduces** the risk of death related to diabetes and its complications by 30-40%
- May **reduce** the amount of medication you need to take





Before You Exercise...

- Ensure adequate hydration and sufficient sleep the night before
- Avoid alcohol intake
- Ensure you rest at least 1 hour after a meal
- Wear proper and comfortable attire and footwear. It should be appropriate to the weather, type of exercise and not restrictive
- Exercise with someone if you are new to exercise or exercising for long duration
- Bring along a hypoglycaemia kit or some sweets in the event of low blood sugar
- Bring your mobile phone and medical ID (if you have) in case of emergencies
- Check your blood sugar level if you have a glucometer

Exercising with safe blood sugar levels

Pre-exercise blood glucose level

< 4.0 mmol/L	4.0-5.5 mmol/L	5.6-15.0 mmol/L	>15.0 mmol/L

HYPOGLYCAEMIA

- Delay your exercise.
- Follow the 15/15 rule. Quickly consume any of these:
  - 15g of carbohydrate in soft drinks (read the label)
  - ½ glass of fruit juice (about 125 ml)
  - 3 soft or jelly sweets (not chocolate)
  - 3 teaspoons of honey, sugar or glucose powder
- Check blood glucose 15 minutes later
  - If < 4.0 mmol/L, repeat 15/15 rule
  - If > 4.0 mmol/L, consume longer-acting carbohydrate or bring forward your next meal if it is due within an hour

- Do not exercise if you feel unwell!

Exercising with safe blood sugar levels

Pre-exercise blood glucose level

< 4.0 mmol/L	4.0-5.5 mmol/L	5.6-15.0 mmol/L	>15.0 mmol/L

Borderline level

- Exercise with caution.
- Have a light snack (15-30g of long-acting carbohydrate e.g. 3 pieces of biscuit and milo) before exercising.
- If exercising for more than 30 minutes, consume additional carbohydrates.

- Note: If you are on insulin and/or sulphonylurea, standby 15g of fast-acting sugars due to a higher risk of hypoglycemia occurring with exercise.

Exercising with safe blood sugar levels

Pre-exercise blood glucose level

< 4.0 mmol/L	4.0-5.5 mmol/L	5.6-15.0 mmol/L	>15.0 mmol/L

Good range!

- Go ahead with your exercise, but monitor signs and symptoms throughout as you do so.
- If exercising for more than 60 minutes, you may need to consume additional carbohydrates.

- Note: If you are on insulin and/or sulphonylurea, standby 15g of fast-acting sugars due to a higher risk of hypoglycemia occurring with exercise.

Exercising with safe blood sugar levels

Pre-exercise blood glucose level

< 4.0 mmol/L	4.0-5.5 mmol/L	5.6-15.0 mmol/L	>15.0 mmol/L

- If you are feeling well and have taken your usual medications, proceed to exercise with caution
- Monitor your glucose trend and increase your fluid intake
- Generally, aerobic exercises would help lower blood glucose level.
- Avoid strenuous exercises or heavy lifting if your blood sugar level is high as it may further increase blood glucose levels

Aerobic/Cardiovascular Exercise

Any exercise involving large muscle groups sustained for a period of time. Examples are brisk walking, cycling, swimming and dancing.

How long?

Aim for at least 150-300 minutes each week. If you have not been exercising regularly, start with about 40 to 60 minutes each week. Then gradually increase this as you get fitter.

How hard?

Aim for a combination of moderate to vigorous intensity exercise. Your breathing should be faster such that you are able to speak full sentences but unable to sing (slight panting)





Strengthening Exercise

Exercise that involves pushing or pulling against a load or resistance. Examples of bodyweight exercise includes the half squat and push up. You can also use resistance bands, dumbbells and gym machines.

How long?

Aim for at least 2 non-consecutive days each week, covering major muscle groups like your legs, chest, shoulders and back.

How hard?

You should use a moderately heavy load that allows you to do 10 to 15 repetitions per set.
Do not hold your breath.

Flexibility Exercise (stretches)

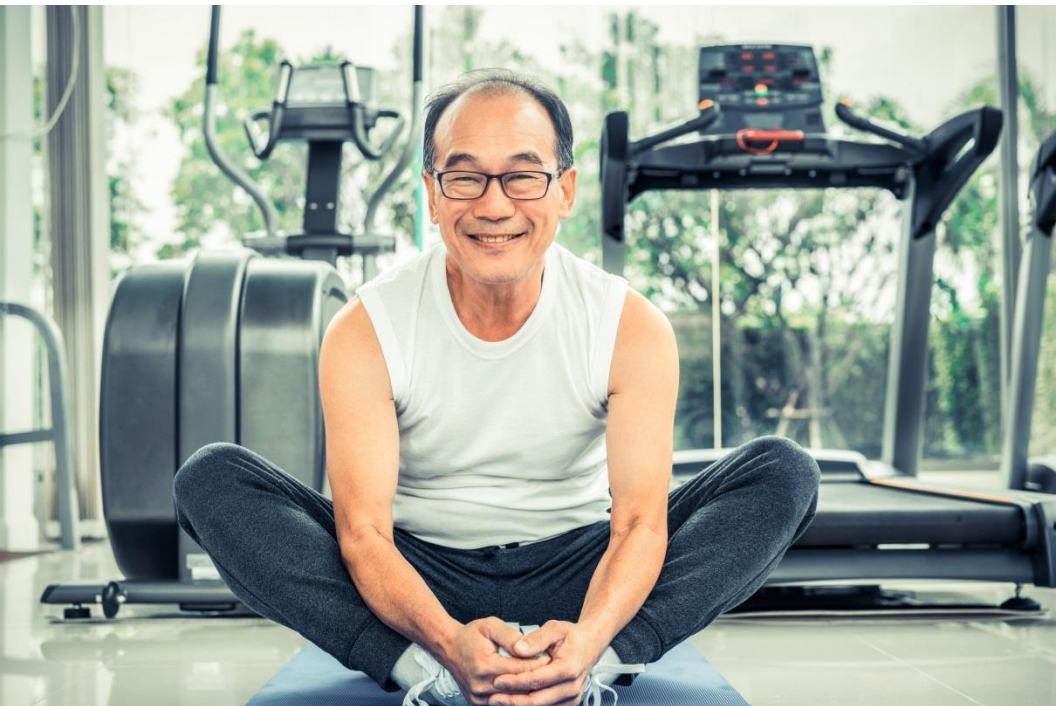
Stretches ensure that your muscles are flexible and not too stiff. Stiff joints can result in joint pain.

How long?

You can do stretches daily and throughout the day covering all muscle groups. For each stretch, hold for about 10-20 seconds.

How hard?

You should feel a gentle pulling feeling during each stretch. You should also be able to speak very comfortably. *Do not* hold your breath.



After You Exercise…

- Remember to cool down and perform stretches after your exercise
- Ensure you replenish the fluid lost by drinking plain water
- Check your feet to see if you may have wounds or ulcers
- If you have a glucometer, check your blood sugar again







After You Exercise…

Post-exercise blood glucose level

< 4.0 mmol/L	4.0-5.0 mmol/L	>5.0 mmol/L

< 4.0 mmol/L

- Perform 15/15 rule

4.0 – 5.0 mmol/L

- Have your next meal within 1 hour
- Have a light snack if your next meal is more than 1 hour away

> 5.0 mmol/L

- Good!



- If you are new to exercise, start slow and aim towards the recommended guidelines for exercise.
- Exercise should be progressive and challenging but not too difficult.
- It is normal to have muscle aches for a few days. However, you should not feel any severe joint pain.

If you are still unsure about exercising or have mobility issues, please seek help from your doctor and a physiotherapist.

Exercises illustrated and instructed in this handout are strictly for designated patients base on the assessment and instruction of the therapist. If you have any doubts, please contact your therapist.

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