 **NANYANG
TECHNOLOGICAL
UNIVERSITY**
SINGAPORE

CC0005 Healthy Living and Wellbeing


Lecture 3

Health and Fitness

Presented by Ms Janice Tay

© 2021 Nanyang Technological University, Singapore. All Rights Reserved.

1

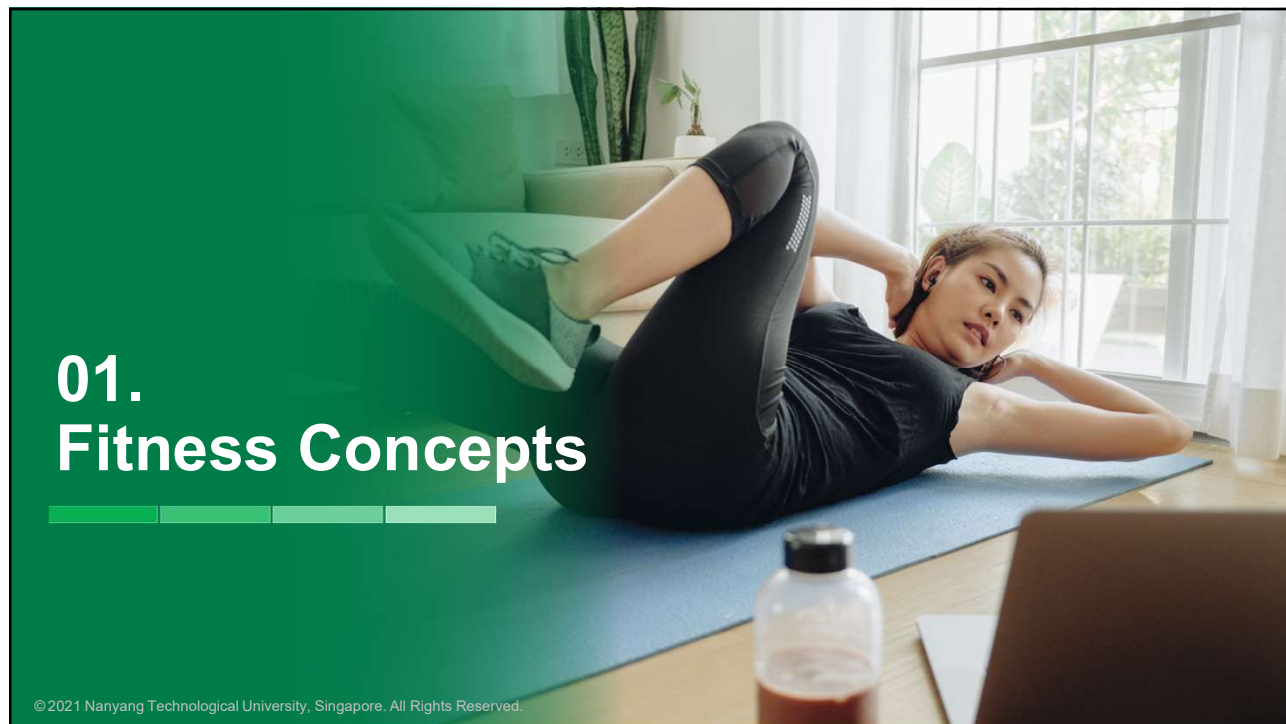


Intended Learning Objectives

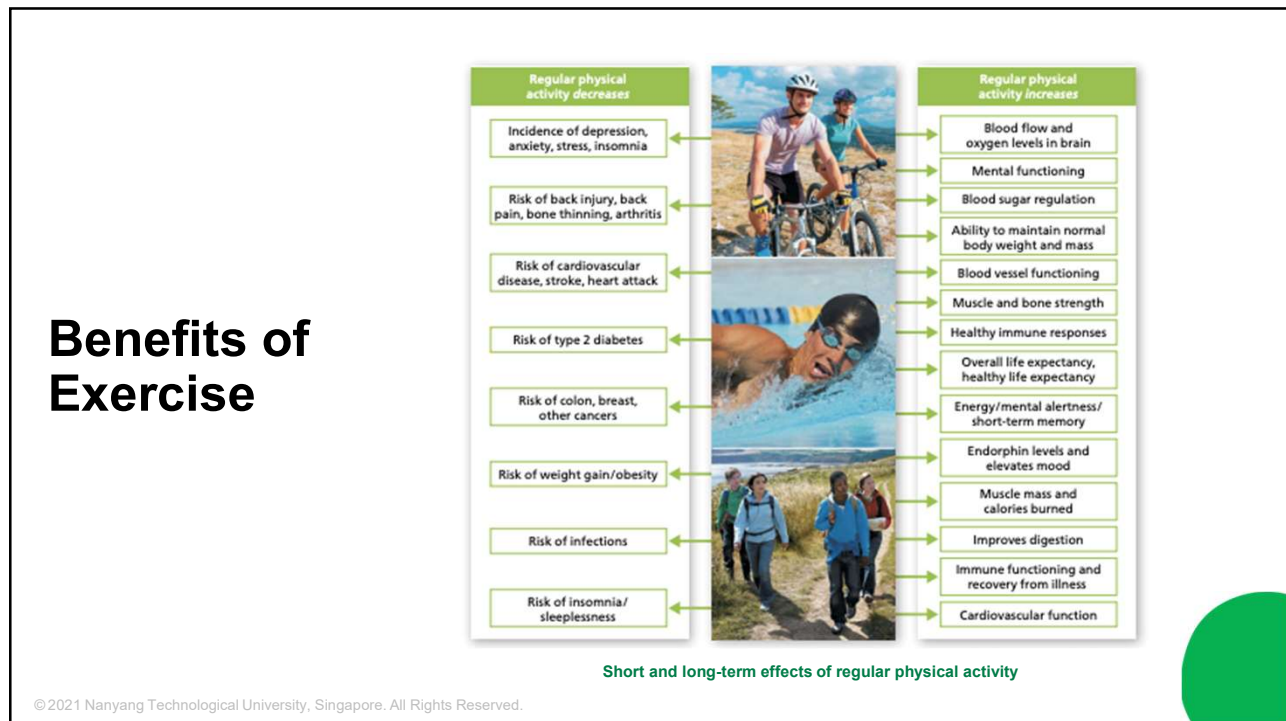
1. Describe the different types of fitness and benefits of exercise
2. Critically examine popular fitness trends and actual participation trends in Singapore
3. Identify ways to increase non-exercise activity levels and avoid the dangers of a sedentary lifestyle

© 2021 Nanyang Technological University, Singapore. All Rights Reserved.

2

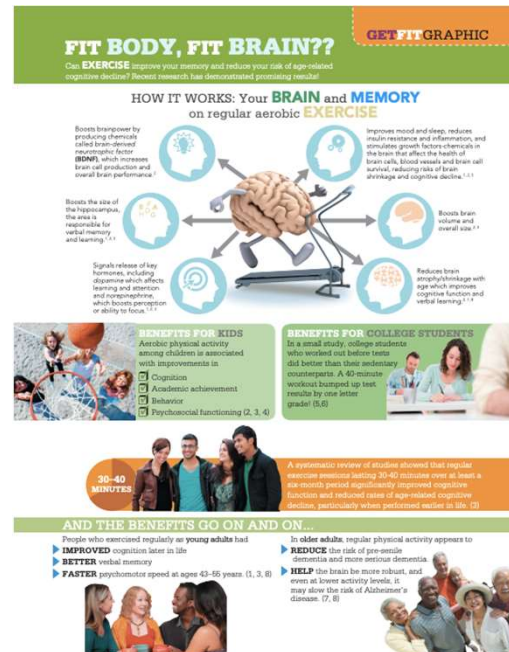


3



4

Can Exercise Make Me Smarter?



© 2021 Nanyang Technological University, Singapore. All Rights Reserved.

5

What are the kinds of exercise I should do?



© 2021 Nanyang Technological University, Singapore. All Rights Reserved.

6

Types of Fitness



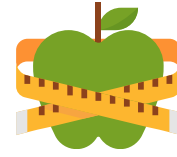
Health-related

- Cardiorespiratory fitness
- Musculoskeletal fitness
- Body composition



Performance

- Cardiorespiratory fitness
- Musculoskeletal fitness
- Body composition
- Speed/agility
- Power



Functional

- Cardiorespiratory fitness
- Musculoskeletal fitness
- Balance/gait
- Flexibility
- Motor agility
- Body composition

American College of Sports Medicine & Chodzko-Zajko, W. (2014). ACSM's exercise for older adults (1st ed.). Lippincott, Williams & Wilkins.

© 2021 Nanyang Technological University, Singapore. All Rights Reserved.

7

What is Being Functionally Fit?

Human movement is a multi-joint three-dimensional movement.

- Includes activities of daily living

Functional fitness varies for different people

How do we train for functional fitness?

- Multi-joint movements
- Core stability



© 2021 Nanyang Technological University, Singapore. All Rights Reserved.

8

How Much Activity Should We Do?



The physical activity pyramid

© 2021 Nanyang Technological University, Singapore. All Rights Reserved.

9

02. Trends in Fitness

© 2021 Nanyang Technological University, Singapore. All Rights Reserved.

10

Popular Exercise Trends

Some of the most popular trends in the past two decades include:

1. Circuit/Interval training
(HIIT, Metcon, Tabata, HILIT, PHAT, CrossFit)



2. Mind-body exercises
(Yoga, pilates)



3. Dance (Cardio-dance: Zumba, Jazzercise, barre workouts, etc.)



4. Aerobics (Step aerobics, body pump, indoor cycling, etc.)



© 2021 Nanyang Technological University, Singapore. All Rights Reserved.

11

Popular Exercise Trends

5. Martial arts/wrestling (kickboxing, Muay Thai, jujitsu, taekwondo, karate, etc.)



6. Obstacle courses; bootcamps



7. Races and events



8. Wearable tech and virtual challenges



© 2021 Nanyang Technological University, Singapore. All Rights Reserved.

12

So Many Options... How to choose?

Considerations when choosing the right exercise:

- Injury / Chronic pain
- Pregnancy
- Time and budget
- Novice
- Personal taste



© 2021 Nanyang Technological University, Singapore. All Rights Reserved.

13

The Singapore Sports Participation Scene



Sports Index

Participation Trends 2015

Prepared by:
Market Insights & Consumer Analytics

Released on:
June 2016

LIVE BETTER THROUGH SPORT



© 2021 Nanyang Technological University, Singapore. All Rights Reserved.

14

Preferred Activities

Preferred Activities and Motivators

Motivations evolve through life stages. The young look forward to reaping social benefits while the old the physical benefits.

	Teens (13-19 Y.O.)	Young Adults (20-39 Y.O.)	M.A. Adults (40-59 Y.O.)	Seniors (60+)
Most Enjoyable Sports	Basketball 13	Jogging/Running* 21	Walking for health 28	Walking for health 52
	Football / Soccer 12	Swimming 13	Jogging/Running* 19	Jogging/Running* 8
	Badminton 12	Walking for health 9	Swimming 9	Other workout** 8
	Jogging/Running* 10	Badminton 8	Bicycle Touring 8	Calisthenics 6
	Swimming 7	Football/Soccer 7	Other workout** 6	Bicycle Touring 3
	Bicycle Touring 4	Other workout** 7	Badminton 5	Qigong 3
	Other workout** 4	Basketball 5	Calisthenics 3	Swimming 3
	Netball 3	Bicycle Touring 5	Treadmill 3	Treadmill 2
	Dance Sports 3	Yoga 4	Football/Soccer 2	Dance Sports 2
	Floorball 3	Dance Sports 2	Yoga 2	Tai Chi 2
What Makes Sports Enjoyable	Maintains health 33	Maintains health 37	Maintains health 46	Maintains health 52
	Fun to do in group 20	For physical development 14	For physical development 13	For physical development 17
	Promotes bonding 18	Promotes bonding 14	Relaxing to mind & body 12	Convenient facilities 13
	For physical development 17	Fun to do in a group 13	Convenient facilities 11	Relaxing to mind & body 13
	Challenging/Requires skills 15	Relaxing to mind & body 12	Easy, safe, comfortable 11	Easy, safe, comfortable 13
	Improves appearance 14	Improves appearance 11	Improves appearance 11	Improves appearance 11
	Passionate about sport 12	Convenient facilities 10	Promotes bonding 9	Convenient to organize 11
	Easy, safe, comfortable 8	Convenient to organize 9	Convenient to organize 9	For mental development 7
	General liking of activity 8	Easy, safe, comfortable 8	Fun to do in a group 7	Promotes bonding 6
	Convenient to organize 8	Passionate about sport 8	For mental development 5	Fun to do in a group 3
	Convenient facilities 7	Challenging/Requires skills 8	Enjoy other things 5	Enjoy other things 3
	Relaxing to mind & body 6	General liking of the activity 6	General liking of activity 5	General liking of activity 3

* Outdoor and not on Treadmill

** Other workout or exercises with equipment in Gym / Home Gym / Indoor or Outdoor Fitness Corner

© 2021 Nanyang Technological University, Singapore. All Rights Reserved.

15

Barriers to Participation in Past Year

Across life stages, non-participation is either due to lack of time or the lack of interest in sports, or both. In addition, some Teens are busy with other non-sport activities while the Seniors are hindered by a long-term physical disability. Among young and middle-aged adults, it is the added responsibility at home (on top of work).

	Teens (13-19 Y.O.)	Young Adults (20-39 Y.O.)	M.A. Adults (40-59 Y.O.)	Seniors (60+)
% of Non-participants in Past Year				
Barriers to Participation in Past Year*	Lack of time: Because of work 32	Lack of time: Because of work 61	Lack of time: Because of work 59	Lack of time: Because of work 29
	Not interested in sports 55	Not interested in sports 47	Not interested in sports 47	Not interested in sports 49
	Lack of time: Need to care for family 7	Lack of time: Need to care for family 29	Lack of time: Need to care for family 23	Lack of time: Need to care for family 18
	Lack of time: Due to other activities** 32	Lack of time: Due to other activities** 19	Lack of time: Due to other activities** 20	Lack of time: Due to other activities** 15
	Long-term physical disability 6	Long-term physical disability 5	Long-term physical disability 13	Long-term physical disability 33
	Lack of sport partner/companion 12	Lack of sport partner/companion 10	Lack of sport partner/companion 11	Lack of sport partner/companion 10
	Short-term personal injury or illness 6	Short-term personal injury or illness 4	Short-term personal injury or illness 9	Short-term personal injury or illness 14
	Lack of facilities nearby 10	Lack of facilities nearby 7	Lack of facilities nearby 10	Lack of facilities nearby 9
	Lack of money for sports activities 7	Lack of money for sports activities 4	Lack of money for sports activities 5	Lack of money for sports activities 6

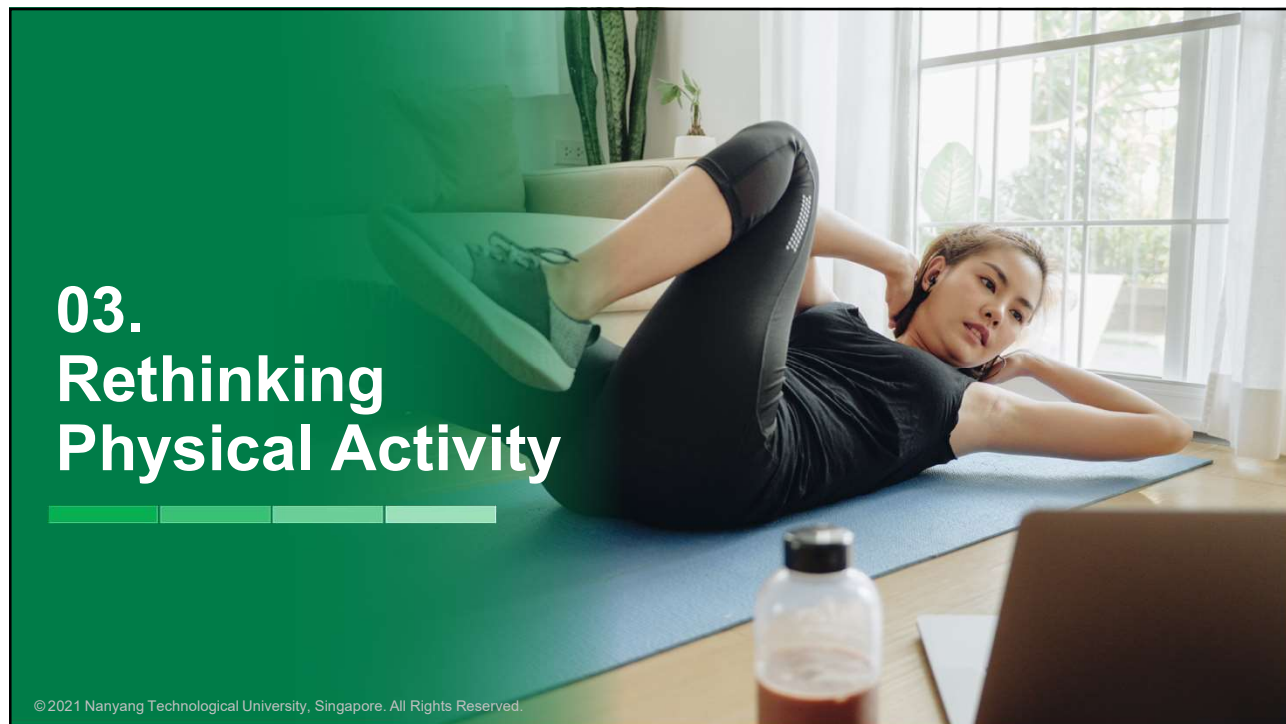
* Reasons for not participating in past year (To a large extent or to some extent)

**Lack of time: Because of other non-sports recreational activities

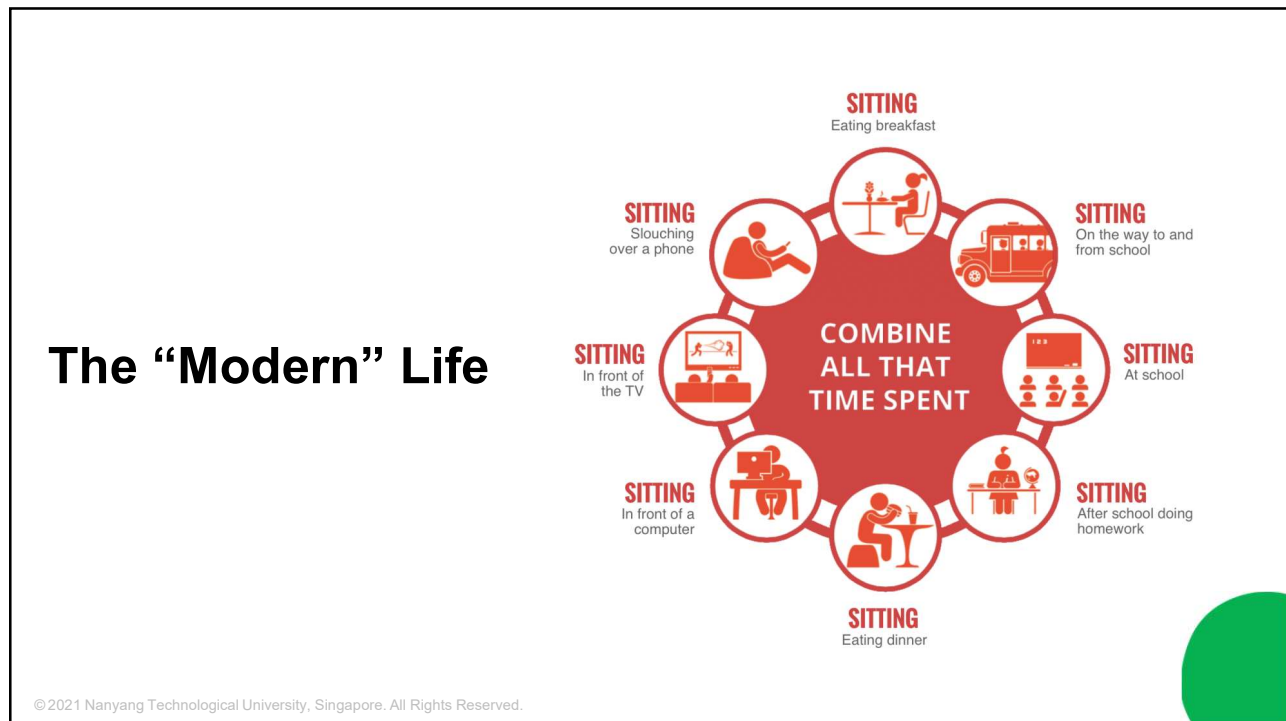
Note: There is a further need for research, particularly qualitative, to better understand and address the root cause for the lack of interest in sports plus determine the best course of action or programs that will be relevant to those who lack the time for sports.

© 2021 Nanyang Technological University, Singapore. All Rights Reserved.

16

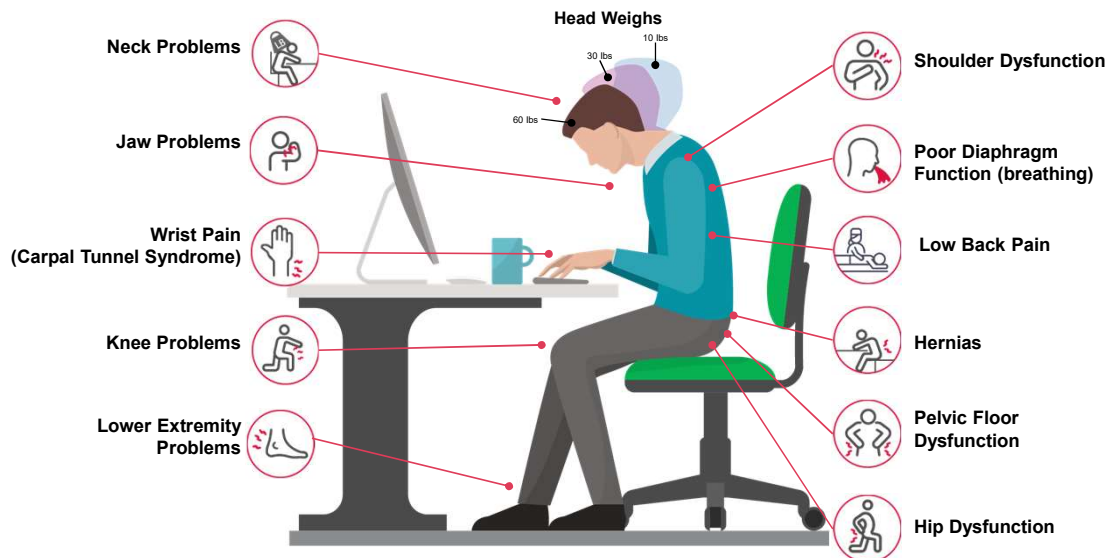


17



18

Sitting is an Orthopedic Perfect Storm



19

Hypokinesia

Sitting Equates to Smoking

The problem is so bad that medical experts now equate sitting with smoking, because prolonged sitting will shorten your life, just like smoking. Sitting as little as 2 hours continuously, increases risk for:

- Heart disease
- Diabetes
- Metabolic syndrome
- Cancer
- Back and neck pain
- And other orthopaedic problems



Source: Levine, J.A. (2014). *Get up! Why your chair is killing you and what you can do about it*. Palgrave Macmillan.

© 2021 Nanyang Technological University, Singapore. All Rights Reserved.

20

A NEAT Idea for Daily Health

- **Non-exercise activity thermogenesis (NEAT)** describes the calories burnt from unplanned exercises, such as movements we make from our daily activities.
 - This does not include sleeping, breathing and eating.
- It's also sometimes called non-exercise physical activity, or NEPA.



© 2021 Nanyang Technological University, Singapore. All Rights Reserved.

21

04. Exercise Q & A



© 2021 Nanyang Technological University, Singapore. All Rights Reserved.

22



Is HIIT better than running?

© 2021 Nanyang Technological University, Singapore. All Rights Reserved.

23

Pros and Cons of HIIT and Steady-State Training

Pros and Cons of HIIT Training		Pros and Cons of Steady-State Training	
Pros	Cons	Pros	Cons
<ul style="list-style-type: none"> • Better performance • Better insulin sensitivity • Burns more calories • Good for fat loss • Better heart health • Time efficient with shorter workouts • Can be done anywhere 	<ul style="list-style-type: none"> • Discomfort • Not suitable for beginners • Increased risk of injury • Risk of burnout or overtraining 	<ul style="list-style-type: none"> • Less stress on the heart and body • Increased endurance • Better health • Faster recovery • Improved ability to burn fat • Increases slow-twitch muscle fibres • Can be more enjoyable 	<ul style="list-style-type: none"> • Time-consuming • Risk of overuse injury • Can be monotonous • Not as efficient in burning calories

© 2021 Nanyang Technological University, Singapore. All Rights Reserved.

24



**Will drinking a protein shake help me
build more muscles?**

© 2021 Nanyang Technological University, Singapore. All Rights Reserved.

25



**Will drinking too much protein shake be bad
for my health?**

© 2021 Nanyang Technological University, Singapore. All Rights Reserved.

26



Does taking caffeinated drinks help me burn fat during exercise?

© 2021 Nanyang Technological University, Singapore. All Rights Reserved.

27

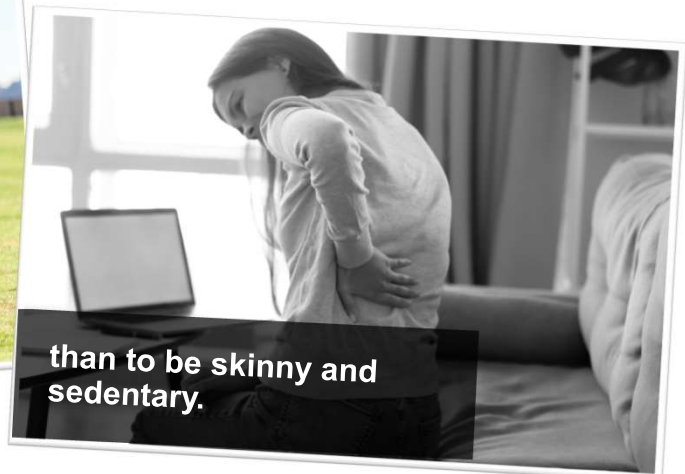


Is a low carbohydrate diet good for athletes?

© 2021 Nanyang Technological University, Singapore. All Rights Reserved.

28

It's better to be fat and fit



than to be skinny and sedentary.

© 2021 Nanyang Technological University, Singapore. All Rights Reserved.

29

No part of this video shall be filmed, recorded, downloaded, reproduced, distributed, republished or transmitted in any form or by any means without written approval from the University.

© 2021 Nanyang Technological University, Singapore. All Rights Reserved.

30