Jockey Club Children's Spine Care Community Project

賽馬會學童脊柱保健計劃

Spine Health & Scoliosis

Organizer

THE HONG KONG POLYTECHNIC UNIVERSITY
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Co-organizer

Donor

香港賽馬會慈善信託基金
The Hong Kong Jockey Club Charities Trust
同心同步同進 RIDING HIGH TOGETHER

Background

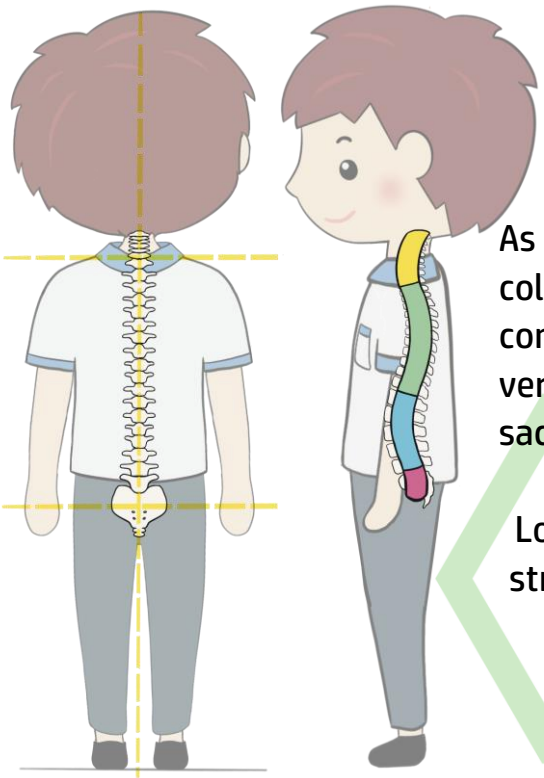
We are a team of healthcare professionals from The Hong Kong Polytechnic University (PolyU). In collaboration with Sik Sik Yuen and full support from The Hong Kong Jockey Club Charities Trust, "Jockey Club Children's Spine Care Community Project" has been launched with the aim to promote public awareness of good posture.

It is important for children to maintain a healthy spine during their growth period. Our team will deliver spinal health talks and provide scoliosis screening for high risk group of children in terms of intense period of growth (Primary 4-6 and Form 1-3 students). Further assessments and treatments will be arranged if necessary.

Spine Health

Our spine, with its strong structure, is the main supporter of the body. The vertebrae of the spine, together with the ligaments, muscles and inter-vertebral discs stabilize the spine, allow the body to perform movements and adopt different postures.

The main functions of our spine include "supporting body", "providing body movement" and "protecting nervous system".



As shown in the picture with different colours and from top to bottom, our spine is composed of cervical vertebrae, thoracic vertebrae, lumbar vertebrae, and sacrum/coccyx respectively.

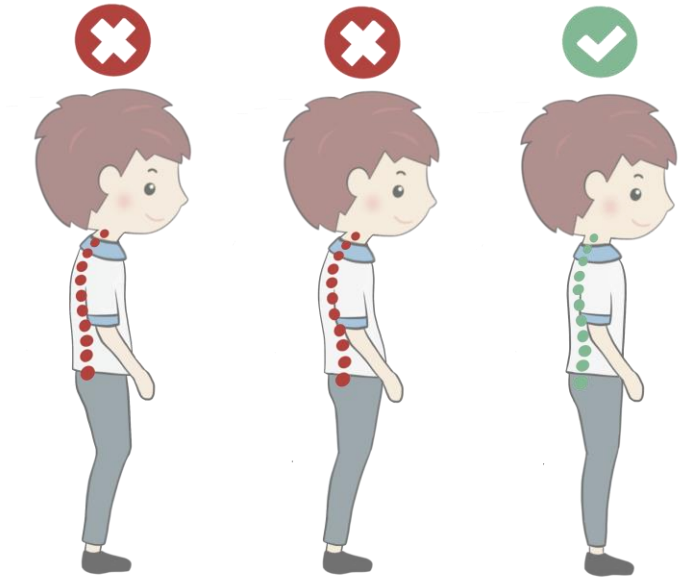
Looking from behind, the spine should be straight, our shoulders and pelvis are level.

Protect Our Spine – Good Posture

Children and adolescents are in important stages of bone development. Correct posture gives not only a smart appearance but also helps to prevent injury and illness of the back.

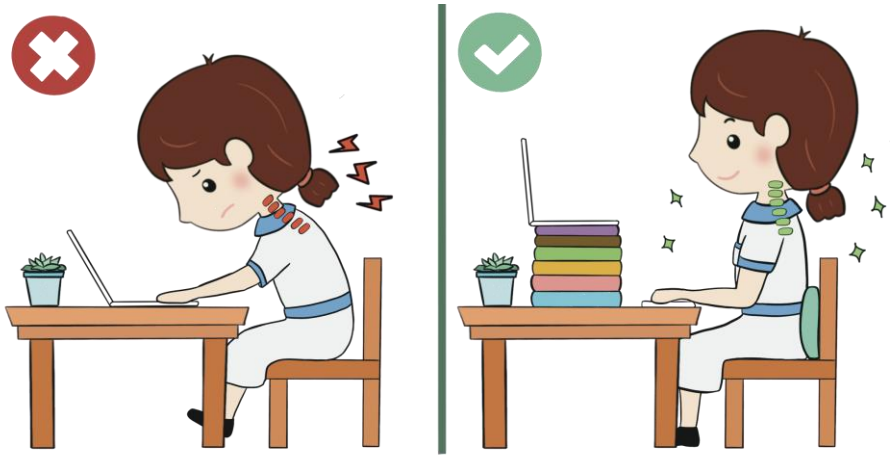
When Standing or Walking

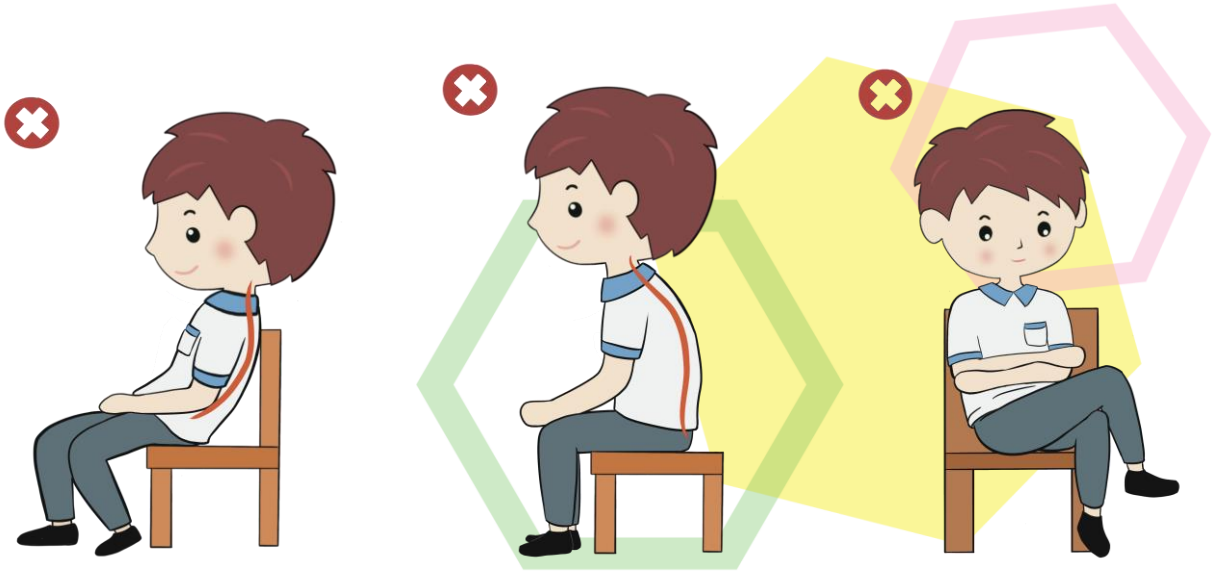
- Head faces forward with chin tucked in
- Shoulders at the same level and relaxed
- Tug in abdomen and stand straight
- Both feet bear weight equally
- Avoid forward tilting of pelvic
- Avoid wearing high heel shoes



When Sitting and Resting

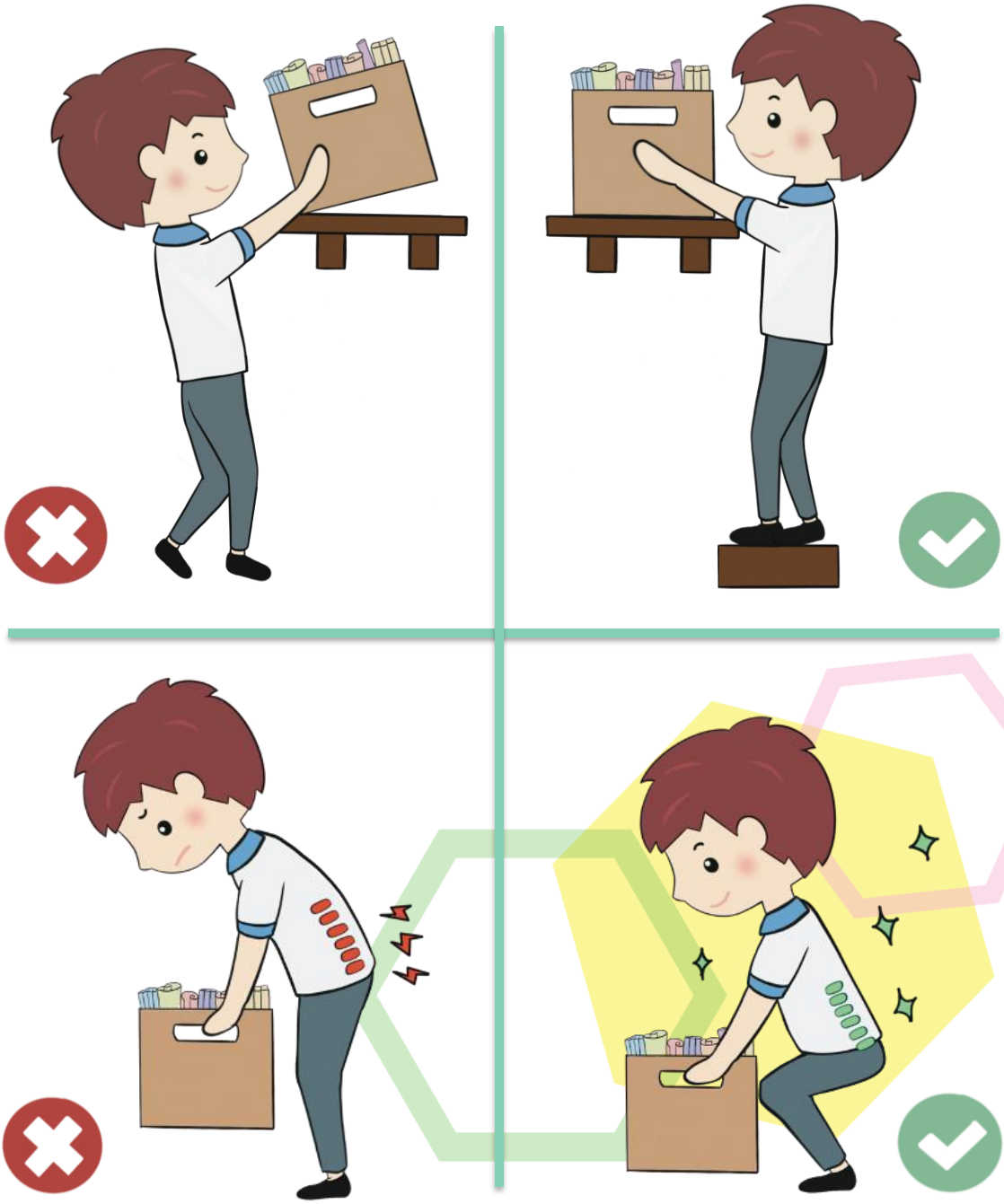
- Neck and back should be straight, relax neck and shoulders
- Keep the back against the chair or use a backrest especially in the lower back region
- Both feet should rest flat on the floor or a footrest
- Keep the forearms and thighs parallel to the floor
- Hold elbows at the sides creating an L-shape (90 degrees) in the arms
- Desk and chair should be in appropriate height, and close to each other
- Position knees at the same height or slightly lower than the hips
- Place ankles in front of the knees
- Avoid crossing knees or ankles





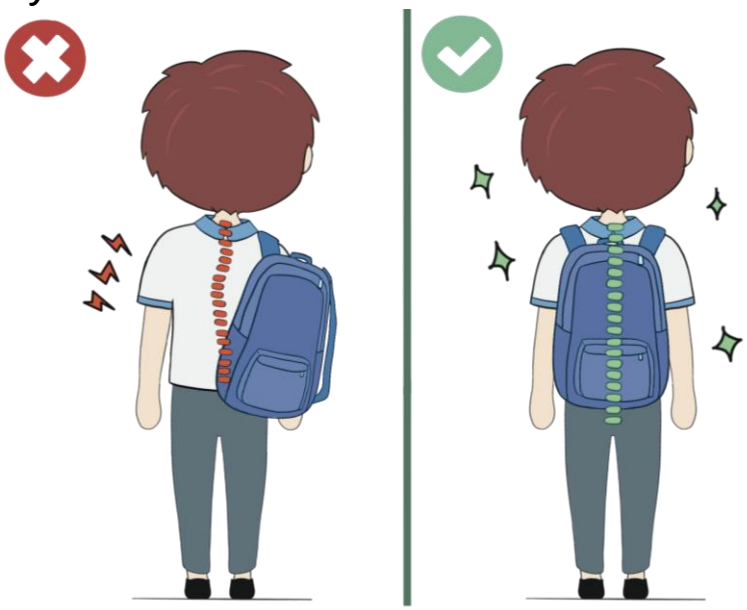
When Getting Objects from Height and Moving Heavy Objects

- When getting objects from height, use a platform or ladder for high object, avoid stretching the arm excessively
- Separate heavy objects into smaller portions and carry them with both hands
- Ask somebody to help if the object is too heavy, or use trolley to carry heavy objects
- When moving heavy objects, bend the knees and squat, keep the back straight, move the body close to the object, use thigh muscles to lift the object, do not bend the body



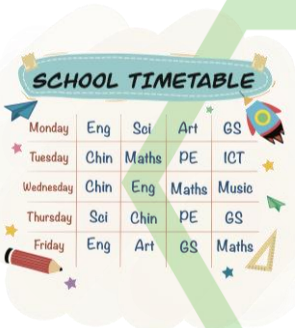
When Carrying School Bags

- Carry the bag on both shoulders and with the bag close to the back, the weight of the school bag should not exceed 10% of the body weight
- If carrying the bag on one shoulder or with one hand, switch sides frequently



School Bag Tips

1. Pack the largest and heaviest textbooks and items closest to the inner sides of the school bag while the lighter items should preferably be placed on the outer sides of the school bag
2. Pack school bags according to the daily timetable and instructions of teachers, avoid bringing unnecessary items to school
3. Use backpacks with wide padded adjustable shoulder straps to suit the body shape
4. Keep shoulder straps tight when carrying school bags, and the backpacks should stay close to our back



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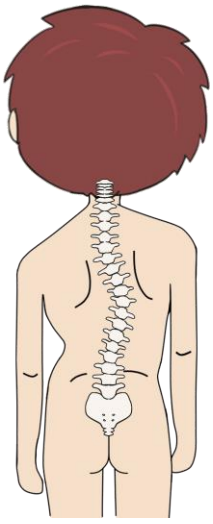
Introduction to Scoliosis

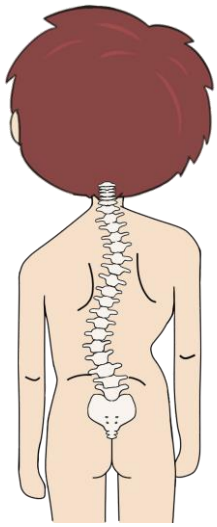
Scoliosis refers to a condition with lateral curve and vertebral rotation of the spine, which appears like an elongated "C" or "S" shape than a straight line when viewed from the back. The causes of scoliosis may include congenital deformities, neuromuscular disorders and other unknown reasons. Adolescent idiopathic scoliosis (AIS) is the most common type of scoliosis occurred in adolescent and most of them with unknown causes.

Scoliosis happens in 2-3% of adolescents. Girls are more likely to have scoliosis than boys while people with family history of scoliosis are also of higher chances. Scoliosis is usually developed in adolescence and spine deformities may continue to worsen as children grow. Approaching bone maturity, the curve deterioration will be slowed down.

C-Shape

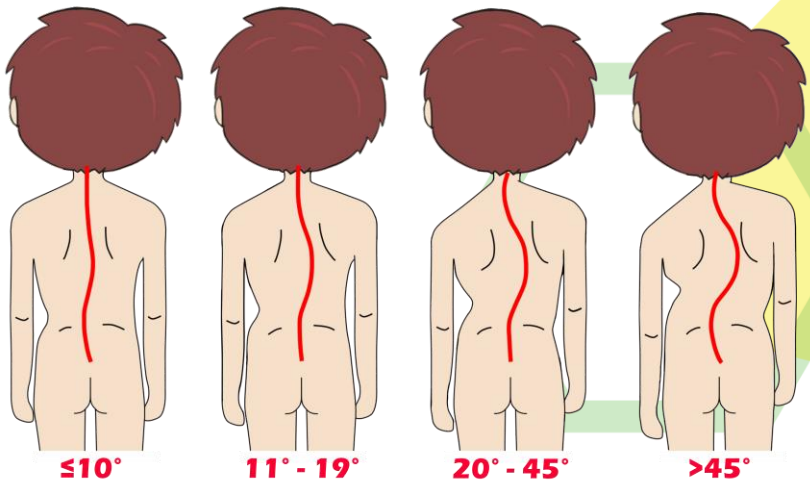


S-Shape



Cobb Angle	Scoliosis Severity
<20°	Mild
20° - 45°	Moderate
> 45°	Severe

Scoliosis can be divided into three categories in terms of curve severity. With X-ray images, Cobb angle is the standard assessment to diagnose and track the progression of scoliosis.

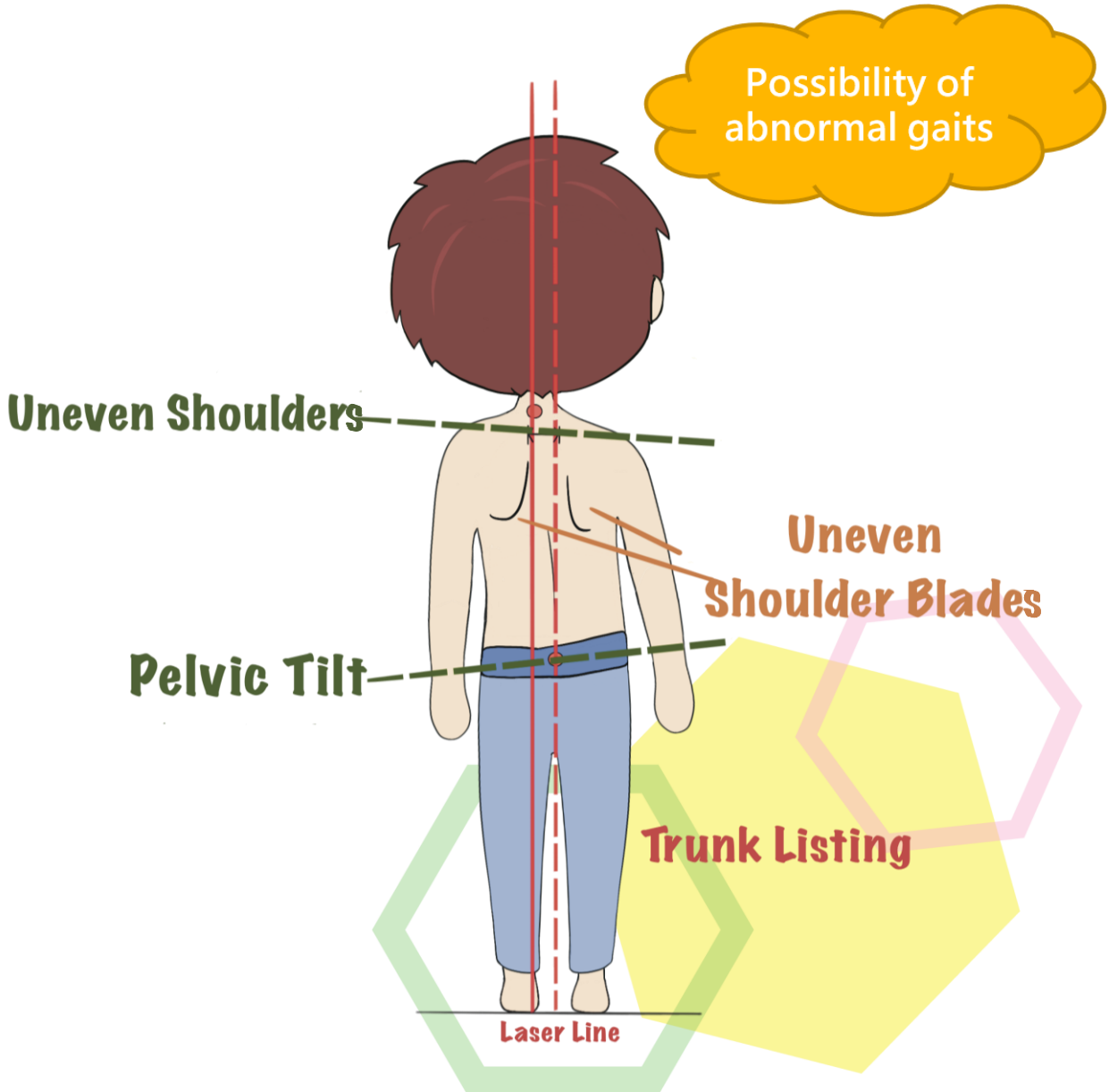


Assessment of Scoliosis
Physical Observation

Body asymmetries are the major signs of scoliosis. They include:

1. Uneven shoulders
2. Uneven shoulder blades
3. Trunk listing
4. Pelvic tilting

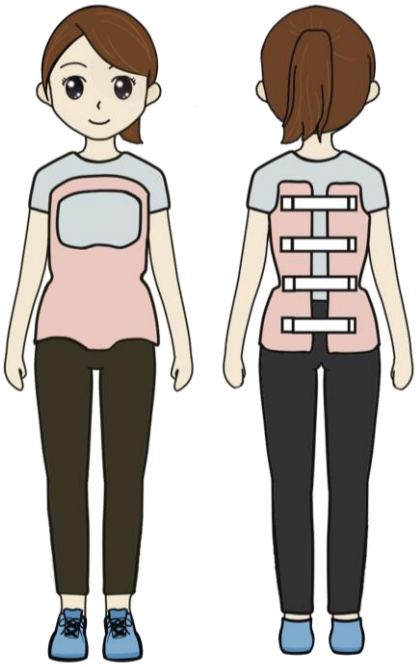
Scoliosis with mild to moderate severity is usually asymptomatic while in severe cases, appearance and cardiopulmonary function could also be affected.



Treatment of Scoliosis

Orthotic Treatment

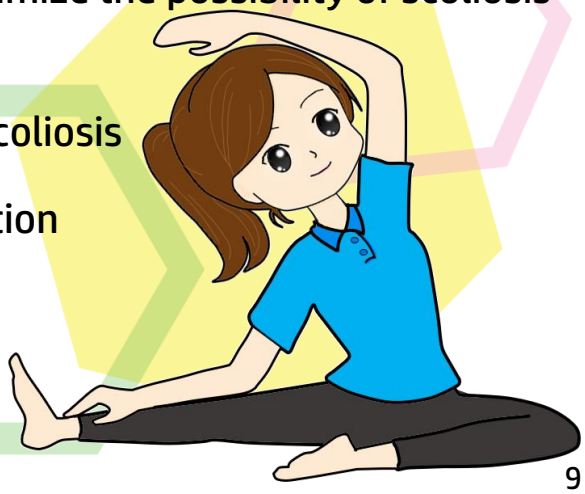
Mild scoliosis should be managed with maintaining good postures and strengthening of back muscles. Moderate and severe scoliosis should be monitored and treated by specialists according to bone maturity. Spinal orthosis (bracing) and physiotherapy are common treatment methods to control the curve progression. Surgical method may be considered to correct severe scoliosis.



Physiotherapy

Aims:

1. To maintain spinal flexibility and to strengthen core muscles for good posture in mild cases
2. To reduce the effect of muscle imbalance and to enhance the effect of scoliosis bracing in order to minimize the possibility of scoliosis deterioration
3. To decrease back pain caused by scoliosis
4. To enhance cardiopulmonary function



Instructions to Physiotherapy Exercises

Each set of exercises are encouraged to be done **at least once per day** and be **repeated 10 times for each exercise**.

(A) Set 1: Stretching exercises

Point to note : Do the exercise **slowly** until you feel the corresponding muscle group being stretched.

1. Pectoralis - abdominal muscles stretching

Lie on your stomach, bend your knees, hold your insteps tightly with your hands, lift your head and knees, and hold for 10 seconds.

2. Deep back muscles stretching

Lie on your back, lift your head and chin, pull your knees as close as possible to your chin, and hold for 10 seconds.

3. Lateral abdominal muscles stretching

Sit or stand with your left hand on your waist, raise your hand high, bend your body to the left, and hold for 10 seconds. Return to the neutral position and repeat the stretching in reverse direction.

4. Pectoral muscles stretching

Sit or stand with hands at the back, hold them together tightly, lift them up, and hold for 10 seconds.

5. Abdominal obliques stretching

Lie on your back, bend your knees, rotate your hip to left side to keep your knee close to the floor mat, and hold it for 10 seconds. Return to the neutral position and repeat for right side.

6. Deep hip flexor stretching

Stand with your upper body straight, right knee flexed and left foot leg straight, place your hands on your right knee, stretch your left foot until you feel the stretching of anterior hip muscles, hold for 10 seconds. Repeat with another leg.

7. Hamstring stretching

Sit on bed or floor with your left leg straight and your right knee bent, lean your trunk forward until you feel tightness over your hamstring, and hold for 10 seconds. Repeat with the opposite leg.

(B) Set 2 : Strengthening exercises

Point to note : Maintain **normal breathing**; do not hold your breath.

1. Abdominal muscles strengthening

Lie on your back, bend your knees, put one hand between your back and floor mat, contract your abdominal muscles so as to press the lower back onto your hand, and hold for 5 second.

2. Rectus abdominis strengthening

Lie on your back, bend your knees, put your hands across the chest, left your head and shoulders off the floor, and hold for 5 second.

3. Abdominal obliques strengthening

Lie on your back, bend your knees, put your hands across the chest, lift your head and shoulders and try to reach your left knee with your right elbow, and hold for 5 seconds. Repeat with another side.

4. Back muscles strengthening

Lie on your stomach, put your hands at the back of your neck, chin up, extend your legs, lift your head and feet at the same time, and hold for 5 seconds.

Jockey Club Children's Spine Care Community Project

Spinal Health Talk

- Healthcare professions will give spinal health talks related to posture & scoliosis on school campus (virtual and face to face mode)
- Teachers and students are welcome to join the talk

Scoliosis Assessment

- After the talk, healthcare professions will provide scoliosis assessment to students, including using the advanced ultrasound machine
- Assessment results with suggestions will be given to parents via their children

Treatment

- Corresponding treatment will be provided to students based on the severity of scoliosis
- Treatment includes: physiotherapy exercises and orthotic management

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Regular Examination Protects Your Spinal Health

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please approach us via the following ways:

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