

## Exercise Treadmill Test for Children

### Introduction

During exercise, there are changes in heart rate, heart rhythm, blood pressure and respiration. Exercise may also elicit cardiovascular abnormalities not present at rest. Therefore, exercise can be used as a test to assess the function of the cardiovascular system, and to evaluate symptoms of heart and lung diseases. The following are common reasons to perform an exercise test:

1. Assessment of chest pain, palpitations, dizziness induced by exercise
2. Assessment of exercise capacity, cardiopulmonary function
3. Evaluation of effectiveness of medical treatment for heart and lung diseases

### Treadmill Exercise Test

The test is performed with the child walks or runs on a treadmill, while his/her heart rate and blood pressure are monitored. Sometimes information about the child's ability to consume oxygen is required, the child will then be asked to breathe through a mouthpiece, and a clip will be placed on the child's nose.

During the test, the speed and slope of the treadmill are increased in steps to maximize the child's effort. The test will be terminated if the following observation is noted:

1. Development of chest pain, dizziness, excessively high or low blood pressure, difficulty in breathing, leg fatigue,
2. Abnormal electrocardiographic findings suggesting inadequate blood flow to heart muscle, and dangerous heart rhythm disturbance,
3. Maximal effort has been obtained.

### Preparation Before the Test

The child should wear sport shoes and loose, comfortable clothes. A light breakfast or lunch is allowed but should be eaten at least two hours before the test. Before the test, the doctor will explain the purpose and the risks of the test to the child and parents. The child will be connected to devices for

electrocardiographic monitoring and blood pressure measurement during the test.

### **Possible Risk and Complication**

1. Heart attack
2. Dangerous abnormal heart rhythm
3. Fainting, or syncope
4. Sudden death

The test is supervised by a doctor and monitored by devices. The risk of death related to exercise test is very low, in the range of 1 in 2,500 to 10,000. Emergency equipment and medical personnel will be available to deal with dangerous complications that may happen.

### **After the Exercise Test**

The child should rest for 20-30 minutes, and may leave the laboratory if there is no discomfort. Preliminary results of the test will be explained to the parents before discharge.

### **Remarks**

The list of complications is not exhaustive and other unforeseen complications may occasionally occur. In special patient groups, the actual risk may be different. For any queries or further information, please consult our medical staff.