Physical Exercise Training to Enhance Executive and Social Functions

May 17th, 2021

THE HONG KONG POLYTECHNIC UNIVERSITY
香港理工大學

INFORMED CONSENT TO PARTICIPATE IN RESEARCH

Neural Mechanism of Physical Exercise in Enhancing Executive and Social Functions in Adolescents

(Simplified Title: Physical Exercise Training to Enhance Executive and Social Functions)

Principal investigator: Dr. Bess Yin Hung Lam (Research Assistant Professor, Department of Rehabilitation Sciences, The Hong Kong Polytechnic University)

Project information:

This study aims to investigate the effectiveness and the neural mechanism of physical exercise in enhancing the executive and social functions in adolescents. The findings of this study will provide the basis for the design and implementation of a community-based physical exercise training targeting executive and social functioning problems in the adolescents in Hong Kong.

Participants who meet the inclusion criteria will be recruited in this study: 1) age ranges from 7 to 17 years; 2) studying at one of the primary or secondary schools in Hong Kong; 3) have never been diagnosed with Autism Spectrum Disorder or any other disorder listed in the Fifth Edition of *Diagnostic and Statistical Manual* of Mental Disorders (DSM-V); and 4) are not currently under any psychiatric medications or therapies.

This study includes two phases. In Phase 1 screening, the participants will be assessed via a questionnaire measuring psychosocial and neurocognitive variables as well as the demographic information. This screening session will take about 20 minutes. Besides, the blood pressure and heart rate of the participants will be assessed by electrocardiogram.

Some participants from Phase 1 will be selected to enter into the Phase 2 for the physical exercise training. Before the start of the training program, a physical fitness test will be used to assess the speed and coordination of movement, and cardiorespiratory fitness of the participants. This fitness test consists of two parts: 1) a 4 × 10 meters shuttle run test and 2) a 20-meters run test. The entire training program lasts for four weeks and participants need to participate in a total of 12 sessions. In each session, every participant will be trained to run or walk for 30 minutes.

Before and after the completion of physical exercise training, the participants will be invited to Magnetic Resonance Imaging (MRI) scanning that will take about 1 hour and Electroencephalogram (EEG) recordings that will take about 45 minutes. The MRI scanning and EEG recordings aim to take images of your brain for understanding the anatomy and activity. During the MRI scanning and EEG recordings, the participants will be asked to perform and give responses in a number of computerized tasks by pressing corresponding buttons according to the instructions. After the completion of the study, the participants will be compensated with monetary reward for their time and travelling expenses. To obtain longitudinal research data, participants for this study may be contacted in the following two years to go through the same assessments as above mentioned.

Benefits:

Upon the completion of study, all participants will be compensated with monetary reward for their time and travelling expenses.

It is anticipated that the research findings will lead to an understanding about the effectiveness of physical exercise in enhancing executive and social functions in adolescents. This knowledge

could be very beneficial because it could help to develop better intervention and prevention studies that could improve these neuropsychological problems in adolescents.

Risks:

The entire research procedure has a very low risk. You have every right to withdraw from the study before or during the training or measurement without penalty of any kind. There are no known side effects or after- effects associated with having a MRI scan and EEG recordings, so you would be free to leave the research room when you are finished.

Before the start of the physical exercise training program, a physical fitness test will be used to examine the speed and coordination of movement, and cardiorespiratory fitness of the participants to ensure that the participants are physically fit to participate in the training program.

For the MRI scanning, some people find that the scanner makes them feel uncomfortable (because they have to keep still for a long time and the loud banging noise while in the scanner) or claustrophobic (nervous in small spaces). Such feelings will go away once you are outside the scanner. If you know that you are claustrophobic, you may wish to discuss this with the researcher beforehand. It is not safe to have an MRI scan if you have any metal in your body. This is because of the strong magnetic field. Teeth fillings are safe but you should discuss other metal dental work (e.g. braces) with the researcher beforehand. For your safety, you would be asked to fill out safety screening questionnaires, and to remove any metallic items (e.g. jewellery, coins). MRI do not use X-rays and the magnetic fields do not have harmful effects. It is also no clear evidence that MRI given to a pregnant woman could harm the unborn child. However, if there is a possibility that you are pregnant, you must NOT take part in this study. In the unlikely event of us seeing any structural abnormalities on your MRI scan, a member of our research team will discuss the implications with you and, with your permission, your doctor may be notified. However, it is important to note that we do not carry out scans for diagnostic purposes, and therefore these scans are not a substitute for a clinical appointment. Rather, our scans are intended for research purposes only.

For EEG recordings, having electrodes placed on your head is not painful, but it may cause mild discomfort or irritation of the skin in some people. If this happens, you should tell the research assistant that you feel uncomfortable, and they will try and help you. If it becomes very uncomfortable, you should tell the research assistant, and they will stop the testing.

I _____ understand and agree with all the information regarding the research study stated in the information sheet. I hereby consent to participate in the captioned research conducted by Dr. Bess Yin Hung Lam (RS, Principal investigator) (Ethics ID no.: HSEARS20190311003). I understand the benefit and risks involved. My participation in the project is voluntary. I understand that I am free to withdraw from the study without penalty if I so wish. I understand that I consent to the processing of my personal information for the purposes of this study only. I understand that the information obtained from this research study may be used in future research and published. However, my right to privacy will be retained, i.e. my personal details and/or photo will not be revealed. I understand that any such information will be treated as strictly confidential.

I acknowledge that I have the right to contact Dr. Bess Lam (Tel no.: 3400 8974/ email: bess.lam@polyu.edu.hk) for any query. Also, I may contact Miss Cherrie Mok, Secretary of the Human Subjects Ethics Sub-Committee of The Hong Kong Polytechnic University in writing (c/o Research Office of the University) (Tel no.: 27664329) for any complaints. I also understand that participation in this study requires me to sign a consent form.

Name of participant: _____

Signature of participant: _____

Name of researcher: _____

Signature of researcher: _____

Date: _____

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