



Effects of unilateral, bilateral and combined resistance
training on the speed and accuracy of the serve in youth
tennis players

Expert Information	
Work Unit:	University of Putra Malaysia
Full name:	Ma Xudong
Title:	Effects of unilateral, bilateral and combined resistance training on the speed and accuracy of the serve in youth tennis players
Research Area:	Physical Education
Working Experience:	School assistant, coach



**JAWATANKUASA ETIKA UNIVERSITI UNTUK
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**FORM 2.5: RESPONDENT'S INFORMATION SHEET AND GUARDIAN'S/PARENT'S
CONSENT**

Please read the following information carefully. Do not hesitate to discuss any questions you may have with the researcher.

1. Study title: Effects of unilateral, bilateral and combined resistance training on the speed and accuracy of the serve in youth tennis players

2. INTRODUCTION:

Your child are invited to participate in a experimental study on the effects of unilateral, bilateral and combined resistance training on the speed and accuracy of the serve in junior tennis players. The purpose of this study is to gather information on the effects of unilateral, bilateral and combined resistance training programmes on strength, explosiveness flexibility, Coordination and speed and accuracy of the serve in youth tennis players. Respondents in this study will not receive any financial or other forms of reimbursement or compensation throughout the trial period. In addition, there will be no charge to respondents for this study. Experimental procedures, including all tools or alternative tools being used (if any), will be provided free of charge to all respondents throughout the course of the study. The information provided below will help you decide whether or not to participate.

3. WHAT WILL YOU HAVE TO DO?

Participation in this study is voluntary. If you decide to participate, you are free to discontinue participating any time. If the decision is made to participate, it is the responsibility of the participant not to miss a training session.

STUDY PROCEDURES:

This study is expected to recruit 32 participants. If you meet the inclusion criteria and agree to participate, you will randomized take part in the following process, which will take approximately one hours of your time each week for 6 weeks. You will be assessed 3 times during the study period. Each will take approximately one hour. The following tests will be measured.

Maturity Test

This test is used to assess the level of maturity of the subject. Maturity is used to describe demographic characteristics

Five-RM BS Test

This test is used to assess the strength of the subject's lower limbs . The test uses a barbell to perform a back squat. The subject is required to lift the barbell as much as possible.

Five-RM BP Test

The test assesses the strength of the subject's upper limbs. The test requires the subject to master the technique of using a barbell. The subject is asked to perform as many reps as possible.

Countermovement jump Test

The CMJ was administered three times with a one-minute rest period each time. Subjects were asked to squat quickly to a depth of their choice and then jump as high as possible

Overhead Medicine Ball Test

This is a test to assess the subject's level of explosive strength in the upper limbs. A rubber exercise ball of 21.5 cm in diameter and weighing 3 kg is used to perform the test. The subject has to hold the ball with both hands and throw it as hard as they can from above their head and record the number of throws.

Shoulder Joint Flexibility Test

This test is a test to assess the flexibility of the subject's upper limbs. This test is done by naturally opening the arms, making a fist and drawing a circle in the air from top to bottom. The participant places both fists naturally between the shoulder blades.

Hand-Eye Coordination Test

This test is a test to assess the subject's upper limb coordination. Subjects will be measured with

their dominant hand. The test will last for 1 minute and each bounce will ensure that the ball is above the head

Serve speed

The subject's serve speed was assessed during the second test. Subjects are required to perform 8 maximum serves and the tennis ball must land in the middle of the court. Maximum speed recorded using a radar gun for analysis

Serve accuracy

The accuracy of the subject's serve is assessed during the second test. Subjects are required to make 8 serves and the strokes in the target area are ranked according to a 3, 2, 1 scoring system.

Training Protocol

It is approximately one hour twice a week for 6 weeks. Each session will last 60 minutes and will start with a 5 minute dynamic warm up, followed by 50 minutes of strength training activities and finish with 5 minutes of relaxation activities (relaxation activities). Your child will use equipment such as barbells and dumbbells to perform different resistance exercises, including squats, pushing and pulling, rotations and other basic movements. Supervisors will help your child when he or she does unilateral training. Your child will be instructed on how to complete the exercises they are asked to do. The muscle strengthening programme will give your child many benefits according to the American Physical Fitness Association's guidelines for youth people. In addition, the researcher will also act as a healthcare provider, ensuring a safe environment and the necessary protections

4. WHO SHOULD NOT ENTER THE STUDY?

- Systematic resistance training in the last three months
- Health problems that may confound study results, including sports injuries, musculoskeletal injuries, etc.
- To take performance-enhancing supplements such as creatine and protein powder

5. WHAT WILL BE BENEFITS OF THE STUDY?

(a) TO YOU AS THE SUBJECT?

Your child will undergo resistance training programs that are proven to be safe and effective. Your child's leg strength, explosiveness and more will improve before and after the program.. With these tests, your child will learn the benefits of leg strength, explosiveness and flexibility and whether they improve with training. Benefits of participating in an exercise program to improve tennis serve.

(b) TO THE INVESTIGATOR?

This study will contribute to the discovery of new knowledge about resistance training in adolescents and will be useful to teachers, coaches and other health care providers working with youth. In addition, this research will fulfil the requirements for my PhD in Gerontology.

6. WHAT ARE THE POSSIBLE RISKS?

There are some small risks associated with exercise testing and training, including muscle soreness, strains, joint irritation and falls. A proper warm-up and relaxation will help to minimise these risks. To prevent falls or injuries, I or an assistant will stand by your side throughout the test to provide protection against resistance training. The investigator will purchase insurance for the subjects

7. WILL THE INFORMATION THAT YOU PROVIDE AND YOUR IDENTITY REMAIN CONFIDENTIAL?

All research records, including questionnaires, tests or other information about your child will be kept confidential and will not be disclosed to others. Information will be presented in a way that does not identify your child. In addition, study supervisors, auditors, the JKEUPM Ethics Review Panel and regulatory agencies will be granted direct access to participants' medical records for the sole purpose of validating clinical trial procedures and data.

8. WHO SHOULD YOU CONTACT IF YOU HAVE ADDITIONAL QUESTIONS DURING THE COURSE OF THE RESEARCH?

The researcher conducting this study is Ma Xudong, a PhD student in education, who can be contacted and asked about. You can get in touch at

GS662041@student.upm.edu.my or +86 13519661021 (Wechat and Phone number). We're here to provide any information you need and address any concerns that may arise. In addition, the cost of the above insurance, training, testing, etc. will be borne by the researcher.

The JKEUPM Ethical Review Panel has approved this study. If you have any questions about your rights as a participant in this study, please contact:

The Secretariat, JKEUPM, at email address jkeupm@upm.edu.my

Please initial here if you have read and understood the contents of this page _____

9. GUARDIAN'S/PARENT'S CONSENT FORM

Study title: Effects of unilateral, bilateral and combined resistance training on the speed and accuracy of the serve in youth tennis players

Investigator: Ma Xudong

I Identity Card No.

address.....

..... hereby voluntarily agree to allow my *son / daughter / ward..... to take part in the research stated above *(clinical/ questionnaire/drug trial).

I have been informed about the nature of the research in terms of methodology, possible adverse effects and complications (as written in the Respondent's Information Sheet). I understand that my *son / daughter / ward has the right to withdraw from this research at any time without giving any reason whatsoever. I also understand that this study is confidential and all information provided with regard to the identity of my* son / daughter / ward will remain private and confidential.

I* wish / do not wish to know the results related to my my *son's / daughter's / ward's participation in the research

I agree/do not agree that the images/photos/video recordings/voice recordings related to my son/daughter/ward be used in any form of publication or presentation. (if applicable).

* delete where necessary

Signature

Signature

(Parent/Guardian)

(Witness)

Date :.....

Name :.....

I/C

No. :.....

I confirm that I have explained to the respondent's parent/guardian the nature and purpose of the above-mentioned research.

Date

Signature

(Researcher)