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V Manobala

Ph. D Research Scholar,
Department of Physical
Education, Bharathiar
University, Coimbatore,
Tamil Nadu, India

Dr. R Annadurai

Assistant Professor,
Department of Physical
Education, Bharathiar
University, Coimbatore,
Tamil Nadu, India

Correspondence

V Manobala

Ph. D Research Scholar,
Department of Physical
Education, Bharathiar
University, Coimbatore,
Tamil Nadu, India

Precise II-muscle fiber on selected corporeal variables school boys: A study

V Manobala and Dr. R Annadurai

Abstract

The purpose of this study was designed to precise II-muscle fiber on selected corporeal variables school boys. To achieve this purpose of the study (N=12) boys from government high school, Coimbatore District, in Tamil Nadu. Their age ranged from 12 to 15 years based on their school records. This study will be evaluating various type of muscle fiber testing for ACE attribute such as II, ID and DD. Molecular genetic analysis will be performing with DNA samples obtain from saliva. General questionnaire will be used to select participants and those with disability or dieses will not include in the study.

Keywords: Precise II-muscle fiber, corporeal variables, school boys

Introduction

DNA is a nucleic acid that contains the genetic instruction used in the development and functioning of all known living organisms. It has been recognized that the inter-individual variability of physical performance traits and the ability to become an elite athletes have a strong genetic basis. The genetic factors that influence the phenotype are now being sought. Several families, twins, case control and cross sectional studies suggest an important role of genetic along with epigenetic and environmental factors in the determination of individual difference in physical performance and training response.

It is now very well established that a genetic component of the variance in any phenotype (i.e. height, muscle mass, strength, athletic status, etc) is determined by small changes in structure of DNA which are called polymorphisms. There are no less than 50 million polymorphic variants in the human genome, which make all individual different. The most common types of DNA sequence variants are single nucleotide and insertion/deletion (I/D) polymorphism. Genetic variants can affect the amount and structure of RNA/protein.

This study will know the children muscle fibres level and growth indicator, depending on the polymorphism of the angiotensin converting enzyme (ACE) and actinin-3 (ACTN3) gene to understand the genetic influence of exercise ability and growth process.

Epigenetic of physical exercise modifications resulting from physical exercise to the genome of cells. Epigenetic modifications are heritable alterations that are not due to changes in the sequence of nucleotides. Epigenetic modifications, such as histone modifications and DNA methylation, alter the accessibility to DNA and change chromatin structure, thereby regulating patterns of gene expression. Methylated histones can act as binding sites for certain transcription factors due to their bromodomains and chromodomains. Methylated histones can also prevent the binding of transcription factors by hiding the transcription factor's recognition site, which is usually found on the major groove of DNA. The methyl groups bound to the cytosine residues lie in the major groove of DNA, the same region most transcription factors use to read a DNA sequence. A common epigenetic tag found in DNA is the covalent attachment of a methyl group to the C5 position of the cytosine found in CpG dinucleotide sequences. CpG methylation is an important mechanism of transcriptional silencing Loscalzo, J. (2011) [1].

Methodology

The purpose of this study was designed to precise II-muscle fiber on selected corporeal variables school boys.

To achieve this purpose of the study (N=12) boys from government high school, Coimbatore District, in Tamil Nadu. Their age ranged from 12 to 15 years based on their school records. This study will be evaluating various type of muscle fiber testing for ACE attribute such as II, ID and DD. Molecular genetic analysis will be performing with DNA samples obtain from saliva. The subjects was be selected

purposive sampling used. General questionnaire will be used to select participants and those with disability or dieses will not include in the study. After informed consent for participants will sought from the parents of the participants.

Result and Discussion

Table 1

	Muscle Code	N	Mean	Std. Deviation	Minimum	Maximum
Cardio-respiratory endurance	II	12	2224.7317	587.67642	859.60	2713.00
Abdominal Strength & Endurance	II	12	24.5833	3.62963	19.00	32.00

Table-I shows the Cardio-respiratory endurance (RR:2273.6620). Abdominal strength & endurance (II:2224.7317), (DD:2263.4433), (XX :2474.5000), (II:24.5833), (DD:29.1667), (XX :31.6667), (RR:28.0000).

Table 2: Showing regression analysis of selected anthropometric, corporeal, functional variables and type II muscle fibers

Model Summary						
Model	R	R Square	Adjusted R Square	Standardized Coefficients Beta	Std. Error of the Estimate	Sig.
Cardio respiratory	.048	.002	-.097	.048	3.00071	.882
Abdominal Strength & Endurance	.474	.225	.148	.474	2.64464	.119

Table II shows Cardio respiratory that the R existed at .048 and R square at .002respectively. This highlights that .002 % variation in the type II muscle fibers was being caused by Cardio respiratory. The value of Beta coefficient has arrived at .002 (significance at .01 level), so it signifies that Cardio respiratoryof least positive affects performance.

Table II shows abdominal strength & endurance that the R existed at .474 and R square at .225respectively. This highlights that 22% variation in the type II muscle fibers was being caused by Muscular Strength and Endurance. The value of Beta coefficient has arrived at .001 (significance at .01 level), so it signifies that Muscular Strength and Endurance of positive affects performance.

Conclusion

Finally concluded this study was II muscle fiber had positive correlation of Cardio respiratory and abdominal strength & endurance variables of school level boys.

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