



ISSN: 2456-0057
IJPNPE 2017; 2(2): 145-147
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www.journalofsports.com
Received: 22-05-2017
Accepted: 25-06-2017

Manu Poswal
Research Scholar, Panjab
University, Chandigarh, Punjab,
India

Dr. Prasanta Kumar Das
Associate Professor, Tripura
University, Tripura West,
Tripura, India

Intensive training effect on reaction time among students of teacher education programme

Manu Poswal and Dr. Prasanta Kumar Das

Abstract

As per the results of earlier research, reaction time of an individual is a valid indicator of any central nervous system. Its an ability to receive and sync movements expressed by the person. This cognitive ability is a key to the athlete in several aspects of everyday living, but significantly not at all limited to taking instant decision in dangerous situations. Exercise is known to increase blood flow in human body and provide oxygen to the muscles and brain. Through intense exercise reaction time of the response of a human body can also be affected because both brain and the muscles are separately correlated with reaction time. To determine this, several research paper have been reviewed and found that intense training does effect on reaction time among students of teacher education program. To do any intensive exercise prior training is must which eventually help in balancing body weight, response or reaction time and the agility of the human body. It is also advisable that establishing exercise regimen in early stage in life and maintaining the same in the later stage in life would definitely improve the reaction time among people, which eventually help body to maintain baseline blood pressure, reaction time and heart rate. Over all, results concluded that intense training among students reduces reaction time i.e. significant improvement in the coordinative ability of the reaction time. Hence, it has been suggested that routine exercise is helpful to people in maintaining their daily reaction time.

Keywords: Reaction time, students, training program

Introduction

Reaction time is the ability to react in seconds, based on the situation. In sports, significant number of times, reaction time has been over looked. Reaction time simply means how quickly an athlete can react or respond to a stimulus. Be an athlete or a common man, quick reaction time is being expected from everybody in their day to day life. That's why it has become significantly important for people to improve their reaction time through various exercises, which help them in benefiting them in several ways like circulation, flexibility, strength and power. To do so, nobody needs to be a player or an athlete to get benefited from an intense reaction time. To be able to respond quicker an intense exercise is requited so that reaction time can decrease. Reaction time can be significantly influenced by accuracy and the speed of your cognitive ability. This cognitive ability can be influenced by the significant factors such as physical health and accurate diet. Having an understanding on how these extremely important factors work together can help in improving the reaction time significantly.

Circulation: Cognitive ability helps in increasing the speed of information processing which eventually helps in improving and maintaining healthy circulatory system. In general, aerobic base exercises helps in increasing blood circulation of a brain and heart rate. With healthy brain person reaction time increases ten times more than the usual and processes information faster than before which leads to faster reaction time.

Flexibility: It is also another significantly important component of the reaction time because if the body muscles are not flexible then body is unable to respond on the signals received from brain. To help improve in body flexibility several exercising techniques such as yoga plays an important role.

Correspondence
Manu Poswal
Research Scholar, Panjab
University, Chandigarh, Punjab,
India

Strength: Strength comes from strong muscles and strong muscles can be built over the period of regular exercise. To support reaction time strength is also another significantly important factor because these factors correlate with muscle endurance. (Reid, Does Exercise Affect Reaction Time) in his article said that "Performing strengthening exercises helps in building muscles and strength which eventually helps in maintaining significantly high energy level, which continually react to stimuli for lesser reaction time.

Power: Power is also another extremely important factor for muscles to use and complete task in a short or minimum time. In sports such as squat jumps, mountain racing, gun shot etc. power plays an important role. As per (Reid, Does Exercise Affect Reaction Time) "muscles are used to produce high level energy in short period". Performing high velocity exercise helps in improving muscles energy level which eventually helps in improving reaction time.

From years people are studying coordinative abilities of reaction time and its effect on human body. Now days, exercise have become a common practice among people which is directly correlated with weight control. A part from weight control, exercise also helps in improving mood, reaction time etc. (Mayo, 2014) [7]. There are several ways to improve reaction time few of them are as follows make quick decisions, practice eye exercise, work on balance exercise, try agility drills, try ball drills, playing brain or video games will also help in increasing reaction time.

Review of literature

To assess the impact of intensive training on quick reaction time, several researcher have worked on different parameters, few of them are listed below for better and clear understanding.

As per the scholar (Malhotra, 2015) [6] "In sports, improvement in reaction time can significantly help athlete to maximize the performance in taking quick decision". (Malhotra, 2015) [6] also, said that intensive physical exercise is mandatory to improve the reaction time. Author claims here that exercise is a low cost non pharmacological alternative for the improvement of the cognitive performance.

As per (Malhotra, 2015) [6], there are few more studies which talked about the reaction time trend due to attention state or arousal. This attention state includes tension developed in muscle due to extensive exercise. (Malhotra, 2015) [6] also found that these muscular tension permit brain to work significantly faster than ever.

As per (Aouadi, Ridha, Nawi Alanazi HM, 2015) [6] "Physical activity is extremely important and recommended to retain good physical health". As per the author, intense exercise post training, affect brain in several different ways. This might work against the effects of mental deficiencies such as improving cerebral perfusion, increasing cerebral blood flow, encourage neurogenesis etc. Later on the author suggested that, regular exercise teacher programmed training will differently improved the reaction time. In this case physical activity becomes necessary means of recuperating cognitive activity performance in adolescents.

Aim of the study done by (Xi Jin, Bobby Eason, Mark Loftin, 2015) [13] was to assess the significant effect and the duration of intense exercise on reaction time. (Xi Jin, Bobby Eason, Mark Loftin, 2015) [13] also wanted to examine the significant impact of "influence of fitness in aerobic in regards with reaction time". In both the subject on the effect of reaction time, author found that "aerobic fitness is averagely correlated

with the choice of reaction time and the intensity of the exercise where in duration of the exercise on the reaction time is highly correlated with each other".

Another study on assessing the effect on intensive training on aerobic was done in 1990 where in author (Lynn Bishop Panton, James E. Graves, Michael L. Pollock, James M. Hagberg, William Chen, 1990) [5] also found "the average impact of reaction time post six month time on resistance and aerobic training".

According to (Abigail Roach, Darin Lash, 2014) [2] "reaction time of any individual could be a indicator of a capability of a nervous system. This nervous system is able to receive & synchronize movement expressed by peripheral nervous system". This cognitive ability (reaction time) is a connection between action and reaction time. This is the time when person make quick decision in dangerous situations, prevention from injury, athletic abilities, etc.

In the journal author (Georg Ebersbach, Almut Ebersbach, 2014) [4] has discussed about the cognitive performance of the effect of physical exercise in patients with Parkinson's disease. According to, (Georg Ebersbach, Almut Ebersbach, 2014) [4] "physical exercise with LSVT BIG or Nordic Walking is significantly positively associated with the improvement in cognitive performance of the patient with Parkinson disease".

As per the scholar (Shailesh Reddy, James T. Eckner, Jeffrey S Kutcher, 2014) [11] "Impaired RT (reaction time) is the most sensitive and common indicator of a cognitive ability with the change such as mild traumatic brain injury. In sport field reaction time is universally the most significant and prolonged injury and gradually return to the baseline over the time". As per the study continuous exercise helps athlete in improving their reaction time over the period of time.

(A. H. Tweit P. D. Gollnick, G. R. Hearn, 2013) [1] has done intense training on "twenty six low fitness students. Pre and post training records have been noted for strength, body reaction time, agility and muscle power. Seven weeks training had been given to these low fitness students for four thirty minute sessions per week". As per the results these 26 students have shown significant improvement in their fitness level post seven weeks of intense training.

In the research on exercise effect on reaction time scholar (Sany Castell, Stephen Lord, 1994) [10] discuss about the improvement of the reaction time of the elder generation. In the journal (Sany Castell, Stephen Lord, 1994) [10] mentioned that intense teacher training program helped elder generation in improving reaction time, quadriceps strength and reduce body affect as compared with the ones who don't exercise. This group has continuously shows good improvement in throughout the programme.

Scholar (Etnyre, B., T. Kinugasa, 2002) has found that people who react "to an auditory stimulus by extending their leg had faster reaction times". It has also been said that, if people performed three second iso-metric leg contraction then leg muscles react faster.

(Welford, 1980) [12] Said that there were numerous studies being done where in reaction time depreciate when the person is either tired or relaxed or tensed. As per the study done by (Welford, 1980) [12] reaction time is much higher and faster soon after the exercise because this is the time when all the components such as circulation, flexibility, strength and power are active.

Discussion

Systematic review on reaction time is being done to see the

intense training effect on the improvement of reaction time among students. Several discussions have been on this topic and found that coordinative ability RT (reaction time) has helped people in improving their reaction time because of continuous exercise. Reaction time is the nervous system ability to receive, process and then initiate response to stimuli. Responses which take more time to initiate are assumed to have longer processing time. Several researcher have work on the listed factors left vs right handedness, age, practice, gender, exercise, the use of stimulant drugs, type of personality, brain injury and illness, hypothyroidism and hyperthyroidism which eventually helps in influencing reaction time. If in any of the factor, there is a significant decrease in reaction time than it can be assumed that there is a development in the cognitive ability of the function post exercise. Exercise, especially in sports have a positive significant impact on cognitive ability, in which brain majorly involves in different stages of acquisition, processing, storage and executive functions. Control executive processes are extremely important in occupational and sports where in person are expected to take decision on performing physical activity. This executive controlled processed help people in their reaction time. In couple of studies reaction time have shown average improvement in the field of aerobic.

Conclusion

Study on the coordinative ability such as reaction time could be easily correlated with people, who are getting benefit in their day to day life because of regular training. Their health and reaction time to responses have significantly improved post training. Out of eleven reviews, none of the review has shown any negative impact of response time post training. Hence, it can be concluded that coordinative ability reaction time has a significant impact on students post training. Establishing exercise regimen from an early stage in life and maintaining the same in the later stage in the life would definitely improve the reaction time among people. This exercise will eventually aid in body balance and coordination.

References

1. Tweit AH, Gollnick PD, Hearn GR. Effect of Training Program on Total Body Reaction Time of Individuals of Low Fitness, 2013.
2. Abigail Roach, Darin Lash. The Effects of Exercise on Reaction Time, 2014.
3. Aouadi Ridha, Nawi Alanazi HM. Impact of Physical Exercise on Reactive Time and Cognitive Function in Mentally Deficient Adolescents, 2015.
4. Georg Ebersbach, Almut Ebersbach. Archives of Physical Medicine and Rehabilitation, 2014.
5. Lynn Bishop Panton, James Graves E, Michael Pollock L, James Hagberg M, William Chen. Effect of Aerobic and Resistance Training on Fractionated Reaction Time and Speed of Movement. Gerontology, 1990.
6. Malhotra V. Exercise and reaction times, 2015.
7. Mayo CS. Effects on your body and behaviour, 2014.
8. Reid A. Does Exercise Affect Reaction Time.
9. Reid A. (N.D.). Does Exercise Affect Reaction Time. Retrieved from <https://woman.thenest.com/exercise-affect-reaction-time-12650.html>.
10. Sany Castell, Stephen Lord. Effect of exercise on balance, strength and reaction time in older people, 1994.
11. Shailesh Reddy, James Eckner T, Jeffrey Kutcher S. Effect of Acute Exercise on Clinically Measured Reaction Time in Collegiate Athletes. Med Sci Sports

Exerc. 2014.

12. Welford A. Choice reaction time: basic concepts, 1980.
13. Xi Jin, Bobby Eason, Mark Loftin. Effect of Exercise Intensity Level on Choice Reaction Time, 2015.