



## THREE CORNER DRILL TRAINING IN IMPROVING AGILITY OF PARTICIPANTS OF SOCCER EXTRACURRICULAR

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### ABSTRACT

Agility is the essential component in sport exercise. This study aims to find out that three corner drill exercise by running around 3 corners, where each corner forms a triangle with 5 meters apart between corners, improves agility of the participants of soccer extracurricular. The design of this research is experimental pre-test and post-test group design. The research subject are 32 participants of soccer extracurricular in SMA Negeri 8 Denpasar. The result of research is the average of agility pre-test with Shuttle run in control group is 15.83 seconds and the average of post-test is 14.84 seconds. Meanwhile, the average pre-test in experimental group is 15.84 seconds and the average of post-test is 13.69 seconds. Based on t- independent test the average of post-test between control and experimental group is  $p = 0.000$  ( $p < 0.05$ ). It means that there is significant difference for the post-test result between groups. It can be concluded that three corner drill exercise with 5 meter in distance can be chosen as a training in improving agility.

**KEYWORDS :** Training, three corner drill, agility

### INTRODUCTION

Soccer is the first popular sport in Indonesia and fancied by all levels in society. In soccer, there are several basic techniques which must be mastered by players, those are kicking ball, receiving ball, dribbling, body feint with ball, passing inside foot and goalkeeper techniques.<sup>1</sup>

Good physical condition is importantly needed, such as endurance, strength, agility, speed and coordination to do the basic techniques in soccer.<sup>2</sup> Physical training is needed to support the success of athletes in applying skills in soccer. A number of researches state that the basic technique in soccer needs good agility, since it is an essential factor in determining the success of soccer player. Agility in soccer is important, especially when the player is dribbling the ball, agility can be one of indicators of the success player in the future.<sup>3</sup> It is important to have training to improve agility mainly in soccer.<sup>4</sup> There is a significant relation between physical training especially in agility training with the success of soccer player, so this part is the most important one to be trained.<sup>5</sup> Regular training program also gives an impact towards agility and speed in soccer athletes in the age of 11 – 13 years old.<sup>6</sup>

Based on the literature review, it is stated that agility affect the success of an athlete. Agility can be trained and improved. A lot of training can be conducted in improving athletes' agility. One of trainings is three corner drill running. This training is one of methods to train agility by running with dribbling through the pointed cones mark. The players pass the cones by dribbling the ball as fast as possible and must not touch those cones.<sup>7</sup> This training is proved to improve athletes' agility in dribbling and can be done by combining more than one drill or exercise.<sup>8</sup> Based on field observation, there is a lack of agility in male participants of soccer extracurricular in SMA Negeri 8 Denpasar. This research was conducted to improve the agility by using three corner drills method training, which is the subject run 5 meters distance for 12 repetitions in 4 sets.

### MATERIAL AND METHOD

The design of this research is experimental randomized pre-test and post-test groups design. The target population of the research is 67 people and the sample is chosen with the criteria such as age, weight and height with accessible

population is 58 people. In determining the number of population random sampling technique is used and 28 people is chosen as the sample. The sample is equally divided into two groups with random allocation and there are 14 people in each group. Pre-test was conducted in control and experimental groups. After the data was obtained from both groups, it was continued with 5 meters in distance *shuttle run* training with 12 repetitions 4 sets for control group, and three corner drills with 12 repetitions 4 sets to experimental group. Both training was conducted for 6 weeks and agility test was done in the end of trainings, then the result was analysed by using statistic.

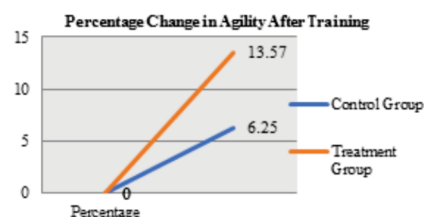
### RESULTS

**Table 1. Difference Test Data Of Treatment Effect Between Groups With T-test Independent In Determining The Final Result Agility Measurement**

Group	Mean of Agility (Second) $\pm$ SD (Standard Deviation)	t value	p value
Pre Test Control	15.83 $\pm$ 3.833	5.824	0.976
Intervention	15.84 $\pm$ 1.158		
Post Test Control	14.84 $\pm$ 4.353	8.690	0.000
Intervention	13.69 $\pm$ 0.356		

p significance ( $p < 0.05$ )

From the analysis above (Table 1), it shows that there is a significant difference from the post-test result between control and experimental groups ( $p < 0.05$ ). To simplify in reading and understanding the research result, it can be described in presentation though the diagram below:



**Fig 1. The Percentage Change Of Agility After Training**

Based on the average percentage of time change agility measurement after training for 6 weeks in figure 1 shows that the percentage of average change in experimental group is greater than control group. It can be stated that the research in experimental group shows a greater change than training in control group.

## DISCUSSION

The obtained result of research is in accordance with the previous result or theory which is stated that a training which is done with more than one drill or three drill position or three training will improve agility. As the previous research result, it is stated that training methods by using three corner drills can improve the agility of athletes effectively.<sup>9</sup> This training method is strongly suggested to be applied to improve agility with simple method usage and easily to be understood and to be done in the field.<sup>10</sup>

Sheppard and Young, (2006) state that agility has a strong relation with physical quality.<sup>11</sup> The agility test is commonly related with physical component test, such as change in directional velocity, or cognitive component, such as anticipation or pattern introductory. This agility test is expected to predict well through three drill methods which is done and developed the component of physical and cognitive training such as visual technique, visual speed and anticipation. The ability to run fast is very influential on the agility improvement, the method of this agility training is also related with the power of lower limb.<sup>12</sup>

There is an improvement in ability and physiology responds in this training, that is hypertrophy (muscle enlargement) and innervation adaptation. Hypertrophy is happened as the cause of the increased in myofibril, increased capillary density and increased number in muscle fibers. It is also happened because of neural adaptation which is characterized by an increase in one's technique and skill level.<sup>13</sup> The speed of muscle contraction depends on the adhesiveness of the muscle fibers and the speed of nerve impulses transmission. A person who is able to change direction from a position to a different position at high speed with good coordination of motion means his/her agility is quite high.

By giving three corner drills training, muscles will be more elastic and the space for the joints will be better, so the joint will become so flexible and it causes the swing of the leg in making steps is wider. Dynamic balance is also trained because in this training a person must be able to take the control of body condition in doing movement. With the improving in those components, the agility will improve as well.<sup>14</sup>

Doing agility training methods by using more than one drill is stated better and effective as well as significant in improving agility in the field. It means that by doing agility training methods with two or three methods in one time can maximize the individual's agility explosion ability which gives a great effect to the success in sport.<sup>15</sup>

Zacharia, Maronge, Brazda, & Boulmay, (2013) states that the skill of agility and speed can be improved by doing training methods with more than one drill, this training method is fairly effective and can be used as the reference to optimize the agility and speed in athletes.<sup>16</sup> Agility training with running exercise method with ball dribbling in the speed of 10m, 20m, 30m and agility (Little and MM test) are done in more one drill. The research result indicated that MM test with and without ball is a reliable and valid test for the assessment of dribbling skills and the agility of young players.<sup>17</sup>

## CONCLUSION

Agility which is done in experimental group after three corner drill method shows a significant result compared to control group.

## Conflict Of Interest

The authors declare no conflict of interest.

## REFERENCES

1. Asadi A, Arazi H, Ramirez-Campillo R, Moran J, and Izquierdo M. Influence of maturation stage on agility performance gains after plyometric training: a systematic review and meta-analysis. *J. Strength Cond. Res.* 2017;31:2609–2617.
2. Davids K, Lees A, Burwitz L. Understanding and measuring coordination and control in kicking skills in soccer: implications for talent identification and skill acquisition. *J. Sport Sci.* 2000; 18: 703–714.
3. Muehlbauer T, Gollhofer A, Granacher U. Associations between measures of balance and lower-extremity muscle strength/power in healthy individuals across the lifespan: a systematic review and meta-analysis. *Sports Med.* 2015;45:1671–1692.
4. Young WB, Dawson B, Henry GJ, Agility and change-of-direction speed are independent skills: Implications for training for agility in invasion sports. *International Journal of Sports Science and Coaching.* 2015;10(1):159–169.
5. Hammami M, Gaamouri N, Aloui, Sheppard RJ, Chelly MS. Effects of combined plyometric and short sprint with change-of-direction training on athletic performance of male U15 handball players. *J. Strength Cond. Res.* 2018.
6. Sermahaj S. The impact of regular training programme on the speed and agility performance of the young football players. *Sport Science.* 2017;10(1):117–121.
7. Kusnani N, Widiyanto W, Bird S. Effect of reactive agility training drills on speed and agility in Indonesian university students. *Journal of Social Sciences Research.* 2019;5: 1272-1275.
8. Hammami R, Granacher U, Makhoul I, Behm DG, Chaouachi A. Sequencing effects of balance and plyometric training on physical performance in youth soccer athletes. 2016. *J. Strength Cond. Res.* 30: 3278–3289.
9. Jeffreys I. Motor Learning—Applications for Agility, Part 2. *Strength & Conditioning Journal.* 2006; 28.
10. Krolo A, Gilic B, Foretic N, Pojskic H, Hammami R, Spasic M, Sekulic D. Agility testing in youth football (Soccer) players; evaluating reliability, validity, and correlates of newly developed testing protocols. *International Journal of Environmental Research and Public Health.* 2020; 17(1).
11. Sheppard J and Young W. Agility literature review :Classifications, training and testing. *Journal of Sports Science.* 2006;24(9): 919–932.
12. Sonoda, T, Tashiro Y, Suzuki Y, Kajiwaru Y, Zeidan H, Yokota Y, Aoyama T. Relationship between agility and lower limb muscle strength, targeting university badminton players. *Journal of Physical Therapy Science.* 2018; 30(2):320–323.
14. Johnson P and Buijibabu M. Effect of Plyometric and Speed Agility and Quickness (SAQ) on Speed and Agility of Male Football Players. *Asian Journal of Physical Education and Computer Science and Sport.* 2017;7(1): 26–30.
15. Roozen M and Suprak DN. Factors Determining Agility, in *Developing Agility and Quickness*, J. Dawes and M. Roozen Ed. US: NSCA. 2012; 1–24.
16. Dawes, J. Creating open agility drills. *Strength and Conditioning Journal.* 2008; 30(5): 54–55.
17. Zacharia G, Maronge GE, Brazda FW, Boulmay BC. Hemoglobin SO-Arab and -thalassemia diagnosed in an adult: A case-based review of the hemoglobinopathies. *American Journal of the Medical Sciences.* 2013;346(4):325–327.
18. Mitrotasios M. A New Test for the Assessment of Agility and Dribbling Skill of Soccer Players Aged 14-15 Years Old. *International Journal of Science Culture and Sport.* 2018;6(29): 425–433.