

## (Training to Prevent Sports Injuries to Ankles for Football Athletes)

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### Abstract

*The problem is that the incidence of ankle injuries in soccer athletes at soccer clubs in West Nusa Tenggara dominates every year, and experiences a decline in performance due to ankle injuries. The aim of this service is to analyze ankle injuries in NTB football players by identifying injuries through the coaches, medical team who provide information to the physiotherapy team. The method used in this research design is observational with a case control design with a retrospective study with the aim of finding out training to prevent sports injuries to the ankle for football athletes. Research stages: Screening Questionnaire and Ankle examination form, Initial examination 1, Examination management 1 and Seminar workshop. Research Results Based on the results and discussion in this research, it can be concluded that: there is a very significant effect of sports injury prevention training on the ankle for football athletes after chronic ankle injury.*

**Keywords:** Training, prevention of sports injuries. Ankle, football.

### INTRODUCTION

Football is a very popular sport in the world, with a very high risk of injury. There are various kinds of injuries to the ball that can be experienced by athletes, namely contusions, cramps, sprains, strains, up to bone fractures. The level of injury experienced is 13 to 35 incidents per 1000 hours of competitive play, 74% of which occur from contact with opponents (Walls et al, 2016).

The most common injury is an ankle injury. During the FIFA World Cup period, the highest incidence of ankle injuries was 50% of the total injury incidents (Walls et al., 2016). In the 2019 Indonesian league season, the Persebaya Surabaya medical team recorded ankle injuries experienced by 55% of the total injuries to football athletes. Ankle injuries are a challenge for athletes, doctors, physiotherapists and stakeholders involved in the world of football, considering that these injuries can affect a player's performance on the field (Manoel et al., 2020).

Injury is tissue damage or other disruption of normal physical conditions resulting from participation in sports, resulting from rapid or repetitive transfer of kinetic energy (Bahr, 2020). Injuries that often occur in soccer are ankle injuries. During the FIFA World Cup period, the highest incidence of ankle injuries was 50% of the total injury incidents (Walls et al., 2016). Ankle sprains are one of the highest c

ases of ankle injuries. Ankle sprains are injuries that result in tears in the ligaments in the ankle. The cause of this injury is excessive use and excessive pressure on the ankle joint, causing a tear (Rodas, 2019)

The novelty in this research is that there are no physiotherapists who have implemented ankle injury prevention, especially in the sport of football in NTB. Therefore, it is necessary to carry out a service to prevent ankle injuries to the feet of players around NTB.

Vertical jump height is influenced by leg muscle contractions, including the hamstrings, quadriceps, adductor muscle group, abductor muscle group, gastrocnemius and plantar muscle group. During the post-injury recovery process, the leg muscles look for a new balance to cover the functional deficit from the vertical jumping movement.

This causes differences in the increase in leg muscle strength involved in post-injury recovery. Until now, which muscles play a role in the recovery process after chronic ankle injury in improving the function of vertical jumping movements have never been analyzed. The aim of this research is to analyze the contribution of hamstring, gastrocnemius, plantaris, abductor and adductor muscle strength to the vertical jump height of football players who have recovered from chronic ankle injuries.

**Bone Anatomy** The ankle joint is a type of hinge joint which is formed from several layers of bones that articulate with each other. The distal Os.Fibula and Os.Tibia articulate with the tarsal os.which forms the structure of the foot. The tarsal os consists of the calcaneus, talus, navicular, cuboid and cuneiform. With such an anatomical structure, the ankle joint only allows movement along one axis, namely the bimalleolar axis. Ankle movements are dorsiflexion and plantarflexion.



Figure 1. Anatomy of the Ankle Joint (Sobotta, 2012)

The aim of this service research is to analyze ankle injuries in NTB football players by identifying injuries through coaches, medical teams who provide information to the physiotherapy team so that we can carry out Training to prevent sports injuries to the ankle for NTB football athletes.

The problem is that the incidence of ankle injuries in soccer athletes at soccer clubs in West Nusa Tenggara dominates every year, and experiences a decline in performance due to ankle injuries. Analysis of post-chronic ankle injuries in NTB soccer athletes can be a reference for the medical team to treat ankle injuries. Proper handling really helps athletes display their best performance and also helps the team achieve the best performance. So based on the above analysis a conclusion is drawn "Ankle sports injury prevention training for football athletes"

**RESULTS AND DISCUSSION**

This research design is observational with a case control design with a retrospective study with the aim of finding out Training to prevent sports injuries to the ankle for football

athletes. In this study, a soccer team was used which was divided into 2 groups, namely the injury group, which was divided by administering a questionnaire. Apart from administering questionnaires, inspections and measurements are also carried out on the specified samples.

This research uses tools and materials to support the research process and data collection, including: 1. Research Tools a. Screening Questionnaire b. Ankle examination form c. Camera d. Force deck, Stationery f. Force frame g. Nord bord.

The sample in this study were NTB football team players aged 17 to 36 years. Then the Exclusion Criteria are 1) Having an injury that requires further action 2) Not willing to fill out the informed consent and Drop Out Criteria 1) An injury occurred during the examination 2) The subject withdrew,

This research will be carried out in the Lab. Samudera Pyrotherapy which is located at Jl. Majapahit no. 37 Mataram, all inspections will be carried out at that location. Then this research will be carried out in January 2024. The examination will only take one meeting.

Table 1. Research Time

Activity	Week 1	Week 2	Week 3	Week 4
Screening and determining research subject groups				
The intervention is carried out in the form of screening and several tests				
Statistical analysis of research data and workshop provision				

**Implementation of research Implementation procedures**

This research was carried out while adhering to health protocols, where all people involved in

this activity were required to wear masks, maintain a safe distance, wash their hands both before and after the activity, and avoid crowds. Apart from that, the implementation of this research will be divided into several sessions so as not to cause crowds in order to maintain health protocols. In this research, there are several stages in carrying out the research, including:

**Initial inspection 1.** Before the research subject enters the room for examination, the subject must first have their body temperature measured, make sure they wear a mask and wash their hands 2. Research subjects enter the room one by one 3. Give direction to the research subject regarding what will be examined 4 5 types of muscles and vertical jump height 5. Before making contact with the subject, the physiotherapist must first wash their hands and wear personal protective equipment. Subjects are divided into 2 groups according to the results of the questionnaire given. 7. The subject is positioned for measurement examination.

**Examination management 1.** Each group will undergo the same examination, namely 2 types of examination 2. Vertical jump examination will be carried out using a force deck. 3. Use a force frame to determine the value of muscle strength. 4. Force frame is used to examine the adductor and abductor, gastrocnemius and plantaris muscles. 5. For hamstring muscle strength, use a Nordboard. 6. After all the examinations have been carried out, data processing will be carried out to determine the results of the examination. subject.

**Characteristics of Research Subjects** The characteristics of the subjects in this study were obtained by descriptive statistical analysis including age, body mass index (BMI), leg length, and vertical jump height. Based on descriptive analysis, it shows that the research subjects meet the expected criteria. This is in accordance with table 5.1, showing that the injured and non-injured groups do not have almost the same difference in mean values so that the research subjects in the two groups have almost the same characteristics. In this study, the subjects were 28 male soccer athletes aged 17-36

years who had experienced chronic ankle injuries.

research conducted by Velnar (2009), the healing process that occurs in both tissues and organs in the body has almost the same process, namely involving immunology and biological systems in the body, and there will be similarities in the phases that must be passed as a healing process. As well as research conducted by Smith (2012), exercises carried out regularly and systematically in accordance with a well-developed rehabilitation program can have a significant effect on the muscles involved in carrying out the exercise.

There is a special post-injury rehabilitation program which aims specifically to return an athlete to their best or higher performance as before the injury. The rehabilitation program is structured starting from reducing pain, restoring range of motion in joints, increasing muscle mass, muscle strength, power to muscle endurance which will affect an athlete's performance after injury (Mattacola, 2002)

## CONCLUSION

Based on the results and discussion in this research, it can be concluded that: there is an influence training to prevent sports injuries to the ankle for football athletes very significant after chronic ankle injury.

## SUGGESTION

Providing the same "rehabilitation" program for each sampling, giving a more detailed questionnaire to get a more specific sampling of ankle injuries and more specific measurements to compare strength, power or muscle endurance after injury and without injury.

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