

Effects of the application of Kinesio Taping® on ankle range of motion and calf and hamstring pain in the non-professional football player

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Introduction:

Can the application of Kinesio Taping on a healthy non-professional football player's lower limb help to prevent muscular injuries and/or improve the performance?

Objective:

Evaluate the effects of Kinesio Taping Method® on ankle dorsiflexion's R.O.M., hamstring and calf pain and cramps prevention

Approach:

A group of 20 healthy non-professional football players was included in the study. Each athlete got one of his legs taped with three applications of Kinesio Taping Method:

- Hamstring facilitation
- Calf inhibition
- Achilles tendon correction

The evaluation focused on:

- Ankle dorsiflexion's range of motion, measured with goniometer
- Hamstring and calf pain, quantified with VAS and NPRS
- Cramps prevention

Data collection has been done also for the other non-taped player's leg and the results have been compared. The examined leg was called GS, the control leg was called GR.

The evaluation was made in five different moments during the time of a soccer match:

1. noKT, before the match without tape



Results:

- Kinesio Taping application has immediately determined, in GS, an INCREASE about 2° in **ankle dorsiflexion's range of motion**, maintained in the all times of data collection with the tape applied on the skin, specifically KT-start, KT-mid and KT-end phases.
- About **pain** reduction, with pain meant like muscular fatigue, no relevant changes by tape application have been reported: only in KT-mid phase has been calculated a possibly relevant clinical outcome with the results in percentage of 97,42% and 83,36% referred respectively to NPRS and VAS data.
- Finally, **cramps prevention** has been successful referred to NEVER cramp contraction occurred in all the study's data collection.

These results look like important in terms of improving the performance of the athlete during the match because, focusing on the increasing of R.O.M., a major dorsiflexion in the ankle means more influence on the dynamic balance¹ and more possibilities to stop and better control the ball and also gives greater range of motion to the foot for rolling during the kick.

Pain reduction in the first half of the game can predict a less muscular fatigue perceived during the break and then a better physical condition when the match will restart and, also, to not have a loss of quality and/or quantity of performance in the last part of the first half of the football match. Even if results don't look to reduce pain, management of its increasing is guaranteed.

Cramps prevention means to not have to substitute a football player unable to continue playing because of this temporary injury, and that is really important

Conclusions:

Kinesio Taping Method application of hamstring facilitation, calf inhibition and Achilles tendon correction, according with previous studies², has definitely helped on increasing ankle dorsiflexion's R.O.M. and to prevent cramps; a mild pain (muscular fatigue) modulation has been given too.

Future Efforts:

That kind of study can be improved including a larger number of healthy players and also, because the first aim of Kinesio Taping Method is to be a tool of the physiotherapist for patients' treatment, to make the same study but over a group of non-professional athletes that are going to restart playing football after a muscular (hamstring/calf) injury.

1. Basnett C. et al, *Ankle dorsiflexion range of motion influences dynamic balance in individuals with chronic ankle instability*, The International Journal of Sports Physiotherapy, Vol.8, Num.2, Apr 2013, 121-128
2. Merino-Marban R. et al., *Effect of kinesio tape application on calf pain and ankle range of motion in duathletes*. Journal of Human Kinetics 37/2013, 129-135