

# **Pia Maria Vinken: The Role of Elastic Taping in Athletic Motor Skill Performance**

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## References of published articles:

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Supporting musculoskeletal functioning is of prominent interest in the applied sport. Thereby, the utilization of elastic taping is very popular, while it is suggested to positively affect musculoskeletal as well as lymphatic and analgesic aspects of athletic performance. However, research findings supporting this assumption are quite inconclusive. It was questioned in this thesis if and how athletic motor skill performance of active and healthy athletes could be affected under the influence of elastic taping. It was hypothesized that the task requirements as well as the application requirements distinguish between the effects of elastic taping in athletic motor skill performance. Four experimental studies were conducted to investigate the role of elastic taping supposed to affect muscle and joint functioning in athletic motor skills. The results of this thesis illustrate that athletic motor skill performance requiring body transport could, depending on the elastic taping, either not be affected or impaired. Athletic motor skill performance requiring body stability could, depending on the elastic taping, either not be affected or facilitated. Athletic motor skill performance requiring object manipulation could, independent of the elastic taping, be facilitated. When applying elastic taping to enhance athletic performance the effects of such application interventions depend on the demands of the motor skill at hand, the parameter selected to represent motor skill performance, as well as on the modalities of elastic taping applied to the athlete's body. Parameters of athletic motor skill performance representing the athlete's ability to coordinate and regulate the motor skill are more likely to be affected under the influence of elastic taping as compared to parameters of athletic motor skill performance representing the athlete's ability to improve mechanical parameters. Furthermore, the body part where elastic taping is applied seems to have a more prominent impact on athletic motor skill performance, than specific application modalities of elastic taping.

The effect of elastic taping on athletic motor skill performance is mainly based on a changed sensory stimulation during execution and control of motor skills when elastic taping is applied to specific parts of the athlete's body. A psychological impact of elastic taping and its effect on athletic motor skill performance cannot be neglected. However, the results of this thesis reveal that sensory stimulation, resulting from the touch of elastic taping, affects the athlete's sensation and perception during motor skill execution, thus being able to affect athletic motor skill performance. It seems as if elastic taping stimulates receptors involved in motor skill execution and control rather than directly affecting musculoskeletal structures and their functioning.