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## Soccer Training Based on the Sprinter/Skater Principle

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In this report of my practical experience, I would like to use the example of a girls’ soccer team to demonstrate that the following areas were improved through supplementary, specific coordination training using the PNF Sprinter/Skater method:

1. Susceptibility to injury
2. Mobility
3. Team interaction and group coordination as a result of improved individual coordination
4. Lower-limb alignment, particularly leg-axis positioning, as assessed with the drop-jump test

The subjectively assessed results were supported by biomechanical measurements and isokinetic strength testing.

In addition, data on the players’ injuries between 2008 and 2010 were collected using a questionnaire.

The basic idea behind this case study arose from the fact that women are several times more likely than men to sustain an anterior cruciate ligament injury.

The U17 girls’ soccer team from Bad Sassendorf demonstrates that preventive training can have a positive influence in the context of anterior cruciate ligament injury prevention.

It also became evident that the training benefited not only the players who were considered at risk of ligament injury. Fundamental motor abilities, including mobility, strength, endurance and coordination, also improved, while the number of injuries decreased.

The improvement in the performance level of each individual player also resulted in a considerable improvement in the performance of the team as a whole.

A clear increase in controlled dynamic movement could be observed. Its effectiveness was reflected in successful finishing and in the number of goals scored.

At the beginning of the season, the goal set by the players and coaching staff was to remain in the league and to meet the performance requirements of the *Bezirksliga*, the regional league.

This goal was achieved and even exceeded.

### Training schedule

- Soccer-specific training twice per week, 120 minutes per session
- Training according to the PNF Sprinter/Skater method once per week, approximately 60 minutes
- League matches or competitive situations, including tournaments, once per week, approximately 80 minutes

At the beginning of 2008, the coach of the U17 girls' soccer team asked me to observe the players during competitive matches from a physiotherapeutic perspective.

The reason for the coach's request was the noticeably high overall incidence of injuries among his players compared with the opposing teams. My focus was on the movement economy of each individual player.

### The training

Changing and supplementing the training programme, including the introduction of the Skater/Sprinter method, was something new not only for the players, but also for the club as a whole.

The first exercise sessions, which were performed without soccer boots, clearly revealed where the problems were.

Standing on one leg while maintaining adequate trunk stability and performing movements in the Sprinter and Skater patterns proved to be a real challenge. The girls quickly reached their limits, which I had not expected.

This raised the following question: How can someone play soccer when they already experience considerable difficulty simply standing on one leg?

The answer can be found in their effortful movement behaviour and insufficient coordination.

Based on my observations, I recognised that these girls compensated for limited coordination and inadequate posture by using excessive muscular effort. This situation was particularly evident in the form of injuries.

### Conclusion

I have been conducting training according to the Skater/Sprinter method with the U17 girls' soccer team since 2008. These exercises have now become part of their regular training routine.

Prevention is a very important aspect that should be considered in every sport. Coaches and instructors have a particularly great responsibility when working with children and adolescents.

Sport should promote health and enjoyment. Coaches and instructors should therefore be trained to recognise postural weaknesses and abnormal or inefficient movement behaviour and should be capable of addressing these problems through specific exercises.

As a supplement to sport-specific training, the Skater/Sprinter method is ideally suited for this purpose. The athletes enjoy it, it requires very little equipment and it can be applied almost anywhere.

## The Training

Skater pattern in side support: bend the lower knee to develop controlled mobility in the lower shoulder, involving adduction and anterior depression.

Chopping pattern: push the elbows towards the left while moving the toes in the opposite direction towards the right.

Skater pattern on a Pezzi ball.

Skater pattern on a Pezzi ball with a bridge.

Sprinter pattern on a Pezzi ball.

Training with a resistance band: Skater pattern for trunk activation and the initial-swing phase, performed concentrically and eccentrically.

## Injury Frequency

