

by Hans Tanner, Carsten Effertz and Gerd Thissen

Explosive takeoff speed and power are critical factors in soccer. Unfortunately, coaches who don't understand the complexity of rapid movement simply make their players work out their leg muscles, then wonder why they're not getting any faster. The reason is that efficient speed requires optimal co-

ordination of all the muscles involved. In this article, speed and coordination experts Hans Tanner and Carsten Effertz team up with Dr. Gerd Thissen of the German Soccer Academy to help you get the most out of an excellent speed training tool: the speed and coordination ladder.



Elevate your speed!

Training activities for speed and coordination ladders

Overcoming the hurdles to better running

In his 15 years as FC Zurich's coordination and running coach from 1994 to 2008, Hans Tanner developed his own way of improving players' running skills. And it seems to have worked: Five players on the Swiss team that took the U17 world championship in 2009 were Tanner alumni. Youth players stand to gain the most from the Tanner method, which aims to stabilize and improve the basic movements underlying running coordination.

There are four main factors that can have a negative influence on soccer players' running technique (see Info 2 at right):

- hip muscle imbalances
- lack of muscle tone in the foot, caused by weakness of the lower leg muscles
- lack of intermuscular coordination
- inability to achieve a high stride frequency.

Hip muscle imbalances

We can "thank" our sedentary lifestyle for our general tendency to have weak back and abdominal muscles. A lack of physical activity can result in shortening of the rectus femoris and groin muscles.

Running technique: Positive factors

- | | | | |
|----------|---------------------------------|----------|------------------------------|
| 1 | ERECT POSTURE | 3 | HIGH STRIDE FREQUENCY |
| 2 | RUNNING ON BALLS OF FEET | 4 | FRESH AND UNFATIGUED |

The result is that players tend to lead with the heel, causing them to “lean back” as they run, overworking the muscles in the front of the thigh and underworking the ones in the back. To prevent these problems, our training method strongly emphasizes maintaining an upright posture.

Weak foot muscles

Without good foot muscle tone, it’s impossible to achieve good acceleration. Video analysis has shown that most soccer players don’t really engage their ankles while running. But strong muscles shorten your foot’s ground contact time and enable you to change directions faster. Running on your heels shifts your center of gravity backwards, which effectively puts on the brakes. When you lead with the ball of your foot, on the other hand, your weight automatically shifts forward, moving your whole body forward faster.

Tip: Make barefoot running part of your training program. Running without the support of a shoe strengthens players’ foot muscles and improves their feel for the right way to run.

Intermuscular coordination and stride frequency

Many players have trouble taking off from a standing position, usually because their strides are too long and their stride frequency is too low. But short strides are best for the first few yards, especially in soccer: Shorter strides make for faster sprinting. And of course, to achieve the right stride frequency, all the muscles involved have to be working together.

Why train running coordination?

The purpose of coordination training is to teach the brain to activate the muscles the right way at the right moment. And the muscles need to learn how to work together. The best strength-training program in the world is worthless if the muscles aren’t properly activated and coordinated in the context of an actual movement sequence.

So the first step of coordination training is brain training. And the sooner players start, the more their playing careers will benefit. Besides running coordination, they’ll also be improving their reaction speed and takeoff power. And there’s another positive side effect: Coordination training is an excellent way of preventing injuries.

In situations demanding good running coordination and soccer-specific skills, players who have received extensive coordination training will have a leg up on players who haven’t: Instead of having to mentally “recalibrate” for each movement sequence, they’ll be able to react instantaneously and execute the necessary movements automatically, just as they’ve been trained to do. This saves mental energy, which in turn saves valuable seconds.

On the following pages we present some of the many training activities in our program, including our “Golden Eight” warm-up exercises as well as coordination exercises for one or more speed ladders. Good technical execution is essential for all of these activities. Fast running depends on good posture and foot positioning, plus active use of the arms (see Info 1 above).

For more information (in German) on our speed training method, visit www.tannerspeed-lauftraining.de or www.lauftraining.ch.

Running technique: Negative factors

- | | | | |
|----------|--------------------------|----------|--|
| 1 | MUSCLE IMBALANCES | 3 | POOR INTERMUSCULAR COORDINATION |
| 2 | WEAK FOOT MUSCLES | 4 | LOW STRIDE FREQUENCY |

Warm-up: The “Golden Eight”

► Author’s note (Hans Tanner)

These eight coordination exercises are a perfect way to prepare your players for any practice or match!



Running coordination begins with warm-up, so we’ve put together a set of eight outstanding exercises you can do before any match or training session. These exercises, which we call the “Golden Eight,” not only improve running coordination, they also help to activate all the muscle groups we use in soccer.

The entire sequence takes about 10 minutes and can easily be incorporated into your standard warm-up program.

To start, divide players into two groups. For each group, set out two cones spaced 20–30 yards apart. Players run to the far cone, then jog back to their starting point. Adjust the running distance so that all players are constantly in motion and no one has to wait.

Tip: The first 5–7 yards are your “coaching zone.” Any mistakes should be corrected here so that players can spend the rest of the run working on them.

The great advantage of these exercises is that players eventually learn to do them on their own. This frees you to set up other activi-

Running on the balls

Tips

- Actively flex your feet up and down, setting them down gently.
- Don’t lead with your heel!
- Keep your body upright.
- Take quick steps.
- Actively swing your arms, keeping your shoulders low.



1 Raise one foot, bending knee slightly and keeping foot flexed.



2 Bring foot downward and place only ball of foot on ground.



3 As soon as ball touches ground, repeat with other foot.

Alternating knee lifts

Tips

- Keep your upper body erect while bringing your weight forward over your feet to increase your forward momentum.
- Actively work your ankles on each step.



1 Run on balls of feet, actively lifting knees.



2 Take two “normal” steps without lifting knees ...



... then lift knee on third step (2–1 rhythm).

ties without worrying whether your players are going to be properly prepared for the physical and mental demands of the training session (or match) ahead. Also, the need to focus on the execution of the technical sequences speeds up players' reaction time and muscle contraction rate, activating their nervous systems and heightening all of their senses.

Of course, to achieve these benefits, you've also got to pay attention to the coaching points shown at right—it's always easier to correct mistakes before players internalize them!

STRETCHING, NOT SITTING

WEIGHT SHIFTED FORWARD

FEET UNDER BODY

HIGH STRIDE FREQUENCY

EXERCISE 3

Crossover step

Tips

- Keep your upper body still and don't rotate from the waist.
- Take short steps.



1 Run on balls of feet, bringing left foot across imaginary centerline ...



2 ... and setting it down. Then bring right foot across centerline ...



3 ... and set it down. Slight counterrotation of arms stabilizes torso.

EXERCISE 4

Speed skipping

Tips

- Keep your weight over your feet to increase your forward momentum.
- For optimal acceleration, actively swing your arms and try to minimize your ground contact time.



1 From standing position, quickly bring one knee up, pushing from ankle.



2 Both feet briefly leave ground, then land, ideally side by side.



3 Bring other knee up to 90-degree angle immediately upon landing.

Warm-up: The "Golden Eight"

EXERCISE 5

Sideways twlst

Tips

- Keep your upper body still while actively rotating your hips.
- Try to run in a straight line without turning your torso to face the direction you're moving in.



1
Sideways run: Bring left foot behind right leg and set it down ...



2
... then bring it back around while beginning to counter-rotate arms ...



3
... and plant left foot firmly in front of right foot. Repeat with other foot.

EXERCISE 6

Flamingo hop

Tips

- Keep your upper body erect.
- Do a complete hip rotation on each step.
- This move simulates receiving a ball in the air with the instep.



1
Hop on left foot, rotating right knee outward and raising foot to left hip ...



2
... then briefly touch fingertips of left hand to inside of foot.



3
Bring foot back to ground and repeat, bringing other foot up on next step.

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EXERCISE 7

Flying bat

Tips

- Pay attention to timing: Actively kick your heel up while simultaneously raising the opposite arm.
- Try to keep your body fully extended throughout the entire exercise.



1
Hop on left foot, kicking right heel up behind buttocks ...



2
... to briefly touch left hand while extending right arm forward and up.



3
Release quickly, bringing right foot back down, and repeat on other side.

EXERCISE 8

Stork walk

Tips

- Swing your foot quickly forward on each kick.
- Keep your upper body erect.
- Always land on the balls of your feet.



1
Bring up one knee to 90-degree angle (note: photo shows mistake).



2
Actively swing raised leg forward with loose kicking motion ...



3
... then set foot down and immediately bring opposite knee up.

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