Chapter XXI

WARMING UP AND COOLING DOWN EXERCISES

by Masaru Saito

1. Order of Warming up Exercises

a. Running and jogging with varied footwork.
b Exercises for all parts of the body.
c Exercises especially for volleyball movements.
d Stretching or flexibility exercises.
e Training for coordination, speed and power (to improve anaerobic capacity).
f. Training to improve aerobic capacities.
g Warm ups with balls.
h. Main Volleyball Training such as set ups, spike receptions, service receptions, spikes, services and blockings, combined and complex training, combination training.

2. Content of Cooling Down Exercises

a. Relaxation exercises for all parts of the body.

b. Stretching exercises and sports massages for players.

3. Some Examples of Warming-Up Exercises

a. Running exercises: jogging, skipping, running forward, running backward, side step, cross step and cross steps back and forth.

b. Exercises for all parts of the body

Jogging in the same position

Slow tempo to quick. Strong arm swings and raise legs higher. Control rhythm and repetition according to abilities.
(Fig. 21-1)

Jump up

Jump in the same position while relaxing shoulders (16 times)
(Fig. 21-2)

Knee Bending and Extending

With heels on the floor, place hands on knees.
Touch feet and knees with fingers. Bend both knees deeply. Keep heels on the floor (4 times)
(Fig. 21-3)

Swing Arms Up While Bending Legs

Swing arms strongly up and forward, bending both legs deeply (4 times)
(Fig. 21-4)

Arm Swings Back and Forth

Swing arms back and forth without bending elbows. (8 times)
(Fig. 21-5)

Chest Expansions

Swing both arms forward and back keeping arms at shoulder height. (4 times)
(Fig. 21-6)

Back and Forth Body Bends

Stand with feet parallel and bend body back and forth (4 times)
(Fig. 21-7)

Side Body Turns

Place feet wide apart and turn body to the side (4 times)
(Fig. 21-8)

Bending Legs Outward.

Stand with both feet parallel, hands on lower back and bend both legs outward. (8 times)
(Fig. 21-9)

Body Turns

Raise right knee turning it to the left touching left elbow then reverse (4 times)
(Fig. 21-10)

Head Turns

Keep both hands on waist, feet parallel, then turn head left and right. (4 times)
(Fig. 21-11)

Back Bends

Stand with feet apart, then bend backwards and touch both heels with hands (4 times)
(Fig. 21-12)

Inside Knee Bends

Stand with feet apart and hands on both knees, bend knee touching it on the floor (4 times)
(Fig. 21-13)

Stretching Ankles

Keep both hands on waist. Put one foot back with heel on floor (4 times)
(Fig. 21-14)

Stretching Achilles Tendon

Stand with feet one in front of the other. Stretch achilles tendon touching heel of back foot. Then switch feet (10 times x 2 sets)
(Fig. 21-15)

Rotating Ankles and Wrists

Rotate ankle keeping hands on waist. Swing both hands (three times)
(Fig. 21-16)

4. Examples of Stretching Exercises For Volleyball Players

Stretch both legs. Place palm of both hands on the floor.
(Fig. 21-17)

Palms on the floor. Move hips forward.
(Fig. 21-18)

Heel of both hands on the floor.
(Fig. 21-19)

Push elbow back. Change arms.
(Fig. 21-20)

Bend one leg and place on the other. Place finger tips back stretching ankle.
(Fig. 21-21)

Pull a knee to the chest with both hands clasped together.
(Fig. 21-22)

Stretch both legs and grasp toes of feet with both hands. Pull towards body.
(Fig. 21-23)

Bend one leg as illustrated in the diagram. Face side and turn the body backward.
(Fig. 21-24)

Squat. Bend body forward so as to touch fingers on floor with head.
(Fig. 21-25)

Lying on the floor, bend legs together. With one arm on the floor pull knee to the other arm.
(Fig. 21-26)

Sitting with legs apart, touch both elbows to the floor.
(Fig. 21-27)

Place both hands behind head. Bend body sideways touching knee with elbow, then change sides.
(Fig. 21-28)

Bend both legs. Pull both knees to the chest with both arms.
(Fig. 21-29)

Roll backward from supine position, then touch toes to floor.
(Fig. 21-30)

Touch toes above shoulders diagonally.
(Fig. 21-31)

Bend body backward pushing floor with both arms from prone position.
(Fig. 21-32)

From a crouch, touch chest on floor, sliding hands forward.
(Fig. 21-33)

One step forward. Bend body forward and pull leg, with arms touching knee, to chest.
(Fig. 21-34)

Do all stretching exercises for 10 seconds each.

5. Examples of Cooling Down Exercises

a. Relaxation Stretching Exercises

Pair up two players to help each other relax from mental tension in training and games.

One player sits on floor. Pull arms back.
(Fig. 21-35)

Partner pulls arms back and upward.
(Fig. 24-36)

Arms to side and pull back.
(Fig. 21-37)

Swing back one arm. Have partner pull this hand down.
(Fig. 21-38)

Place both hands behind head. Touch elbow and turn body to the side.
(Fig. 21-39)

Bend body forward extending both legs. Partner pushes back.
(Fig. 21-40)

Keep prone position. Partner raises both legs.
(Fig. 21-41)

With partner bending over, lie across partner bending body back.
(Fig. 21-42)

Stand on hands and bend backward with partner helping.
(Fig. 21-43)

Look behind you clasping both hands and pull each other.
(Fig. 21-44)

From prone position, bend knee. Push with both ankles and swing legs.
(Fig. 21-45)

Same as above, but stretch ankles.
(Fig. 21-46)

Swing legs in supine position together.
(Fig. 21-47)

Swing arms in supine position with partner.
(Fig. 21-48)

Sit on the floor bending both legs, touch each heel. Partner pushs both knees to the floor.
(Fig. 21-49)

In all cooling-down stretching, go slowly in relaxed conditions. Stop the limitations of movements before players feel pain. These exercises will promote recovery from fatigue and improve player flexibility.

b. Adjustment of Length of Legs

One player lies on the floor in a natural relaxed posture. Then compare the length of both legs keeping ankles at 90 degrees.
(Fig. 21-50)

If you find a difference in length, it is a body disorder caused by imbalance of waist and backbone.

In this case, we should use the following remedies :

1) Bend short leg, touching knee to body. Then partner stretches and pulls leg upward.
(Fig. 21-51, 21-52)

2) Bend short leg and push knee outward. (5 to 6 times).
(Fig. 21-53)

3) Pull short leg upward keeping in prone position. Do not pull too strongly.
(Fig. 21-54)

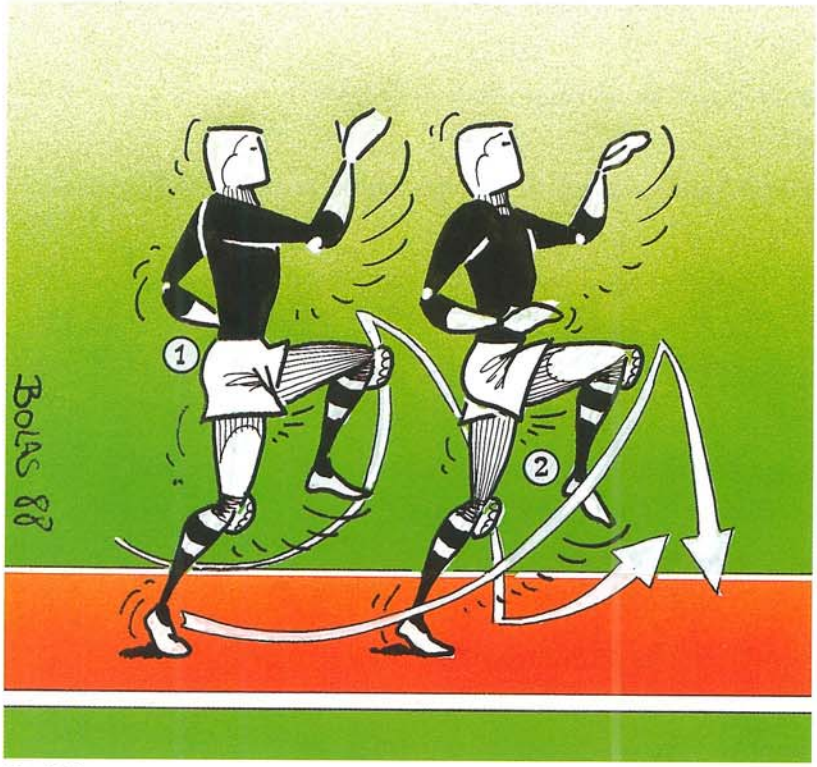
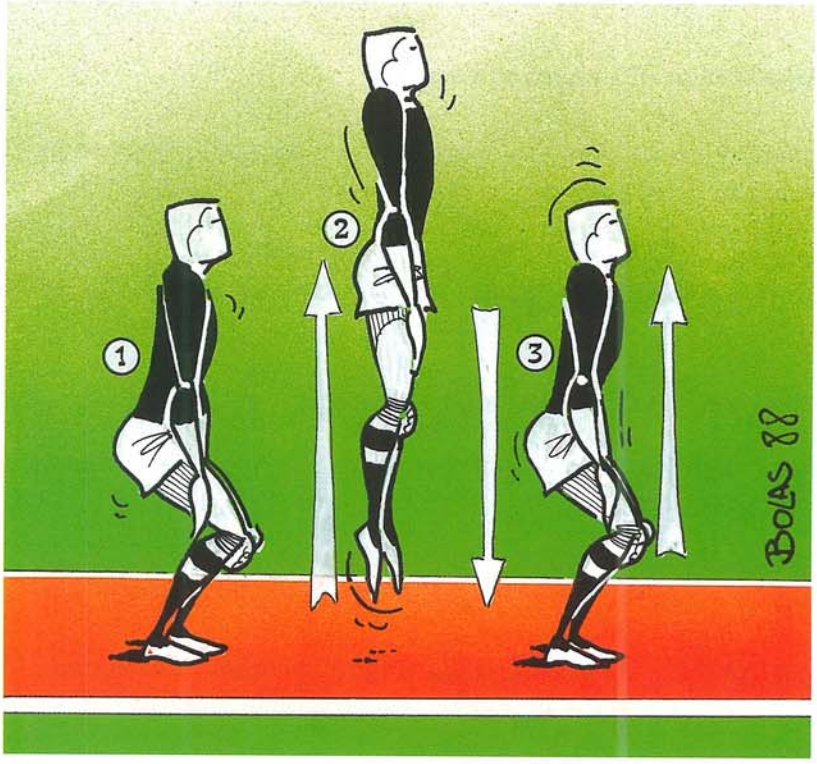


Fig. 21-1



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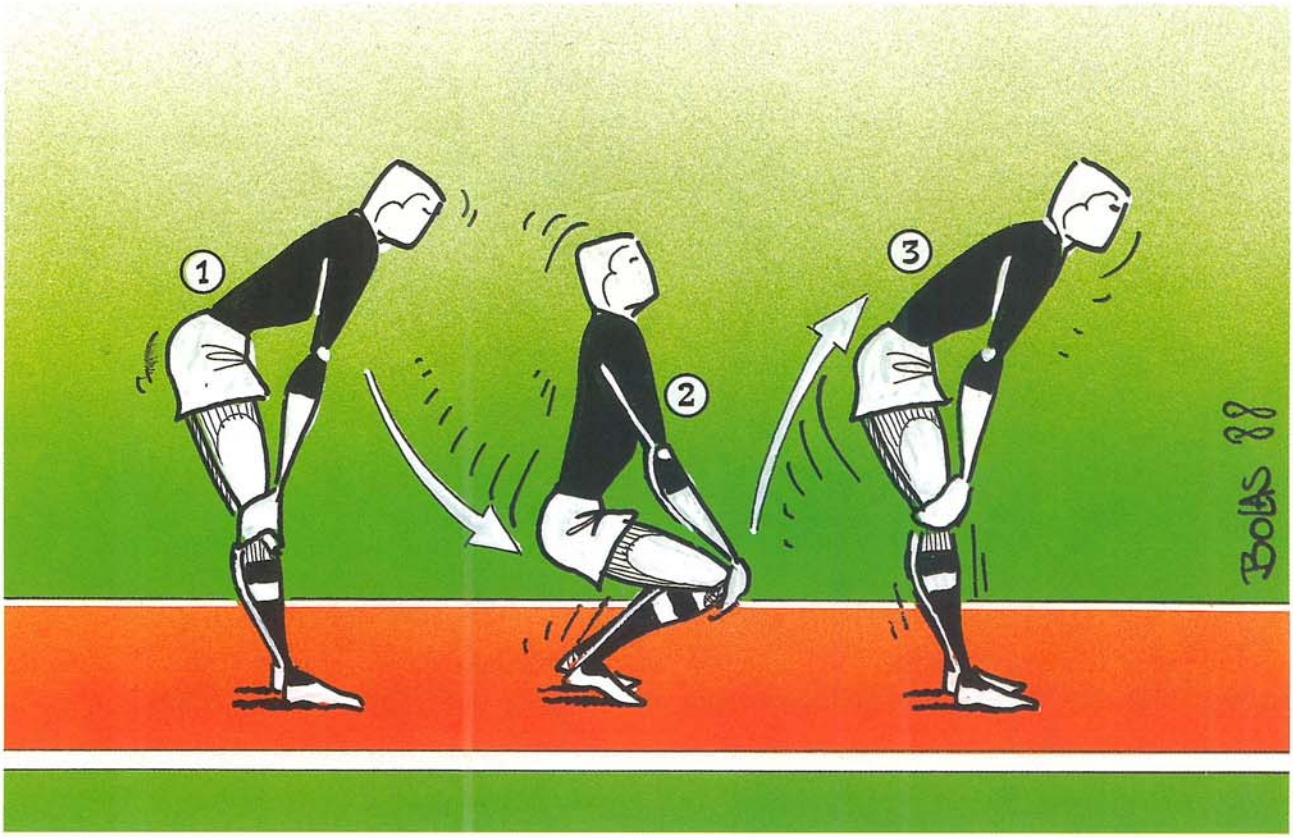

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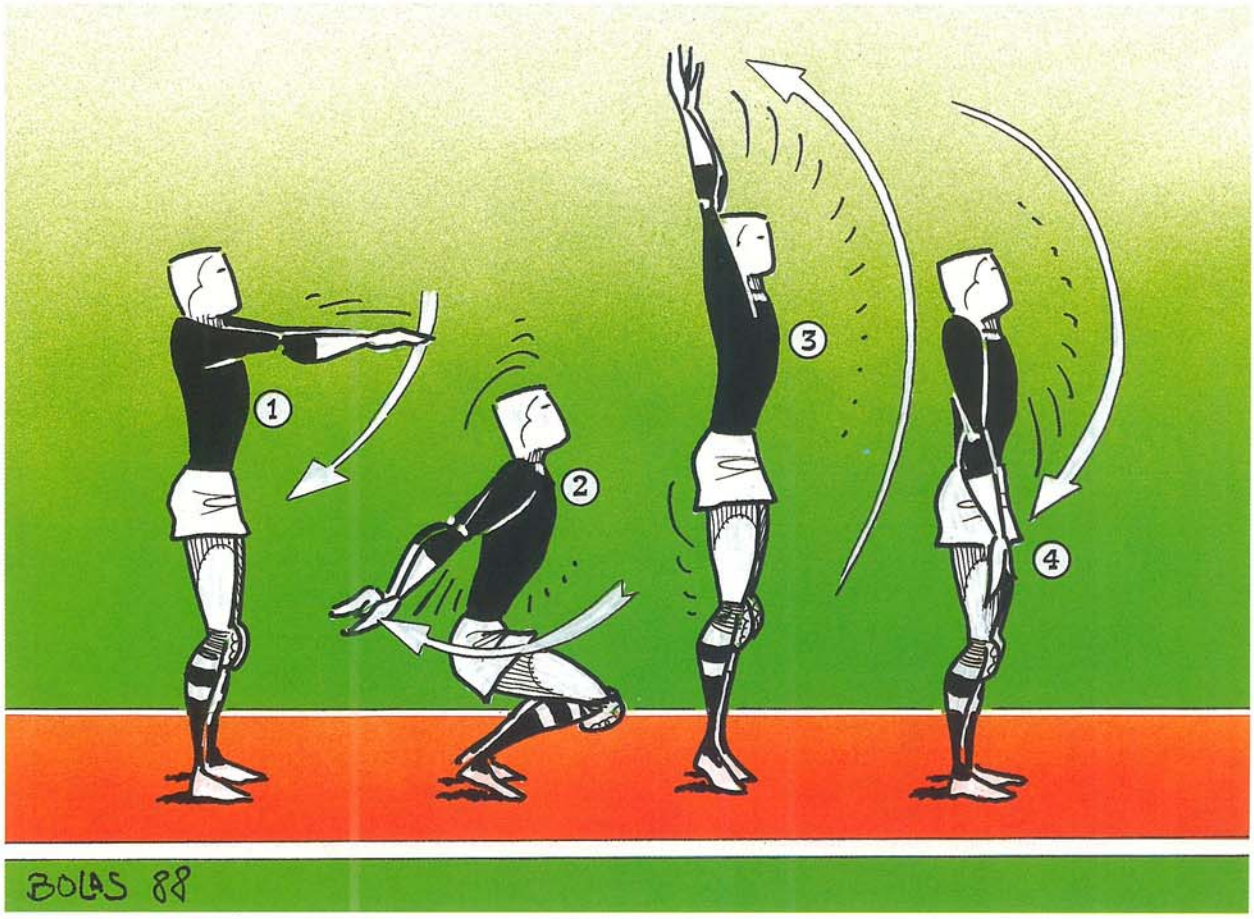

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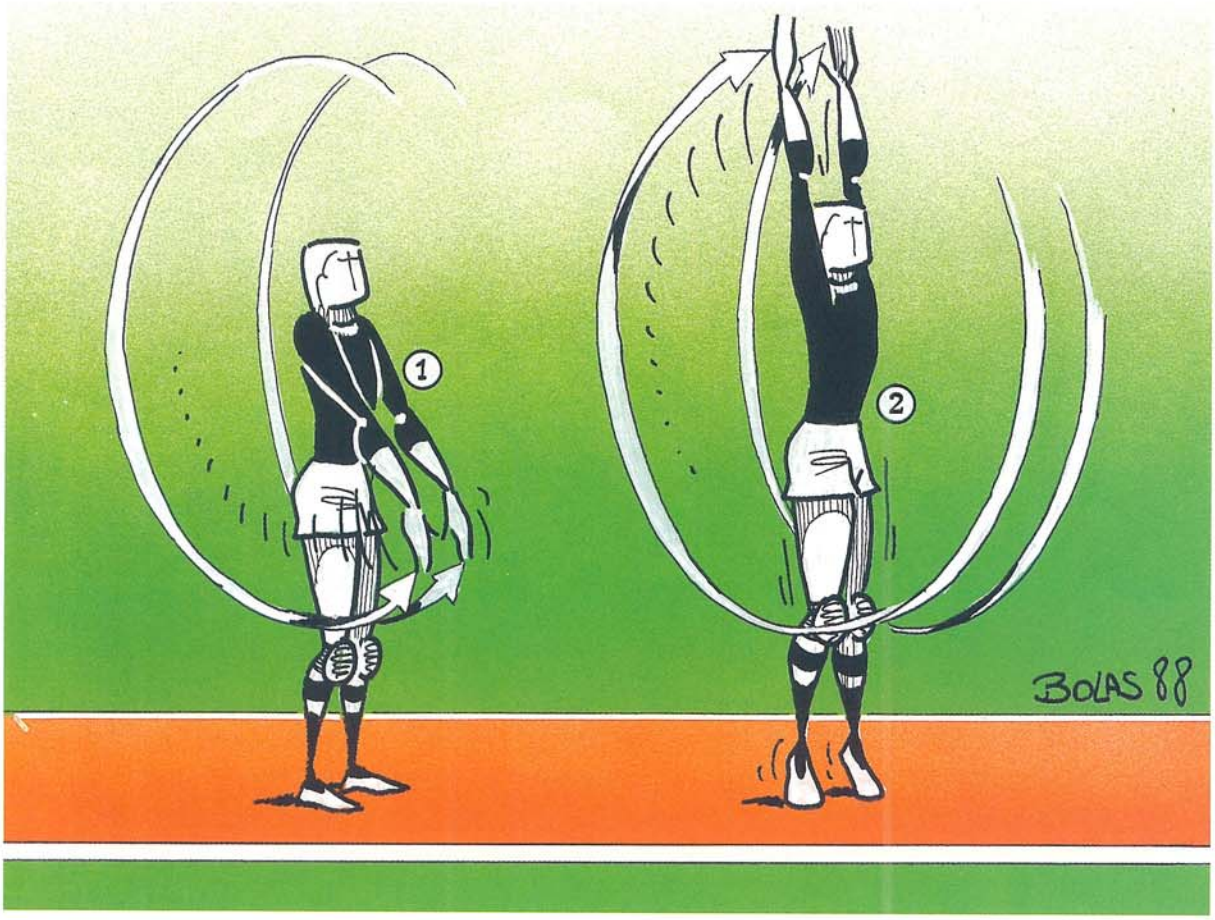

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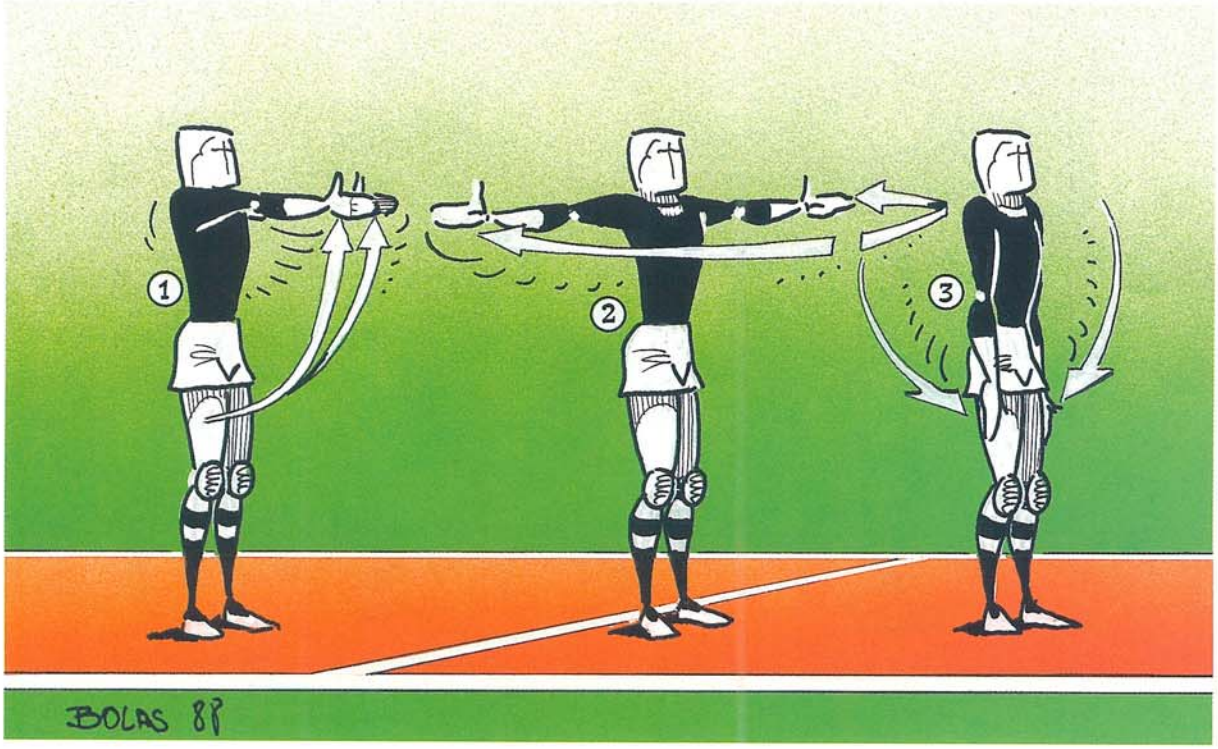

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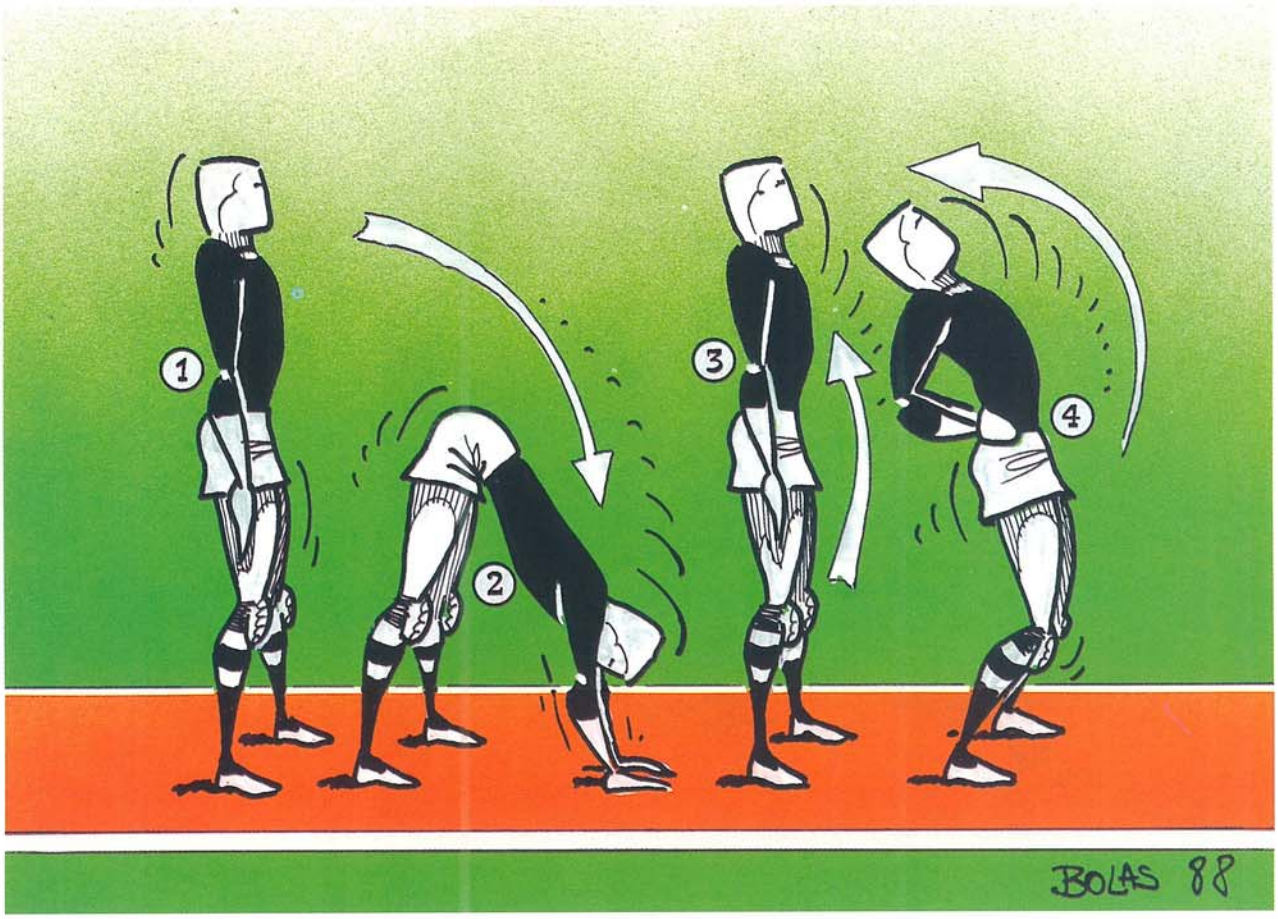

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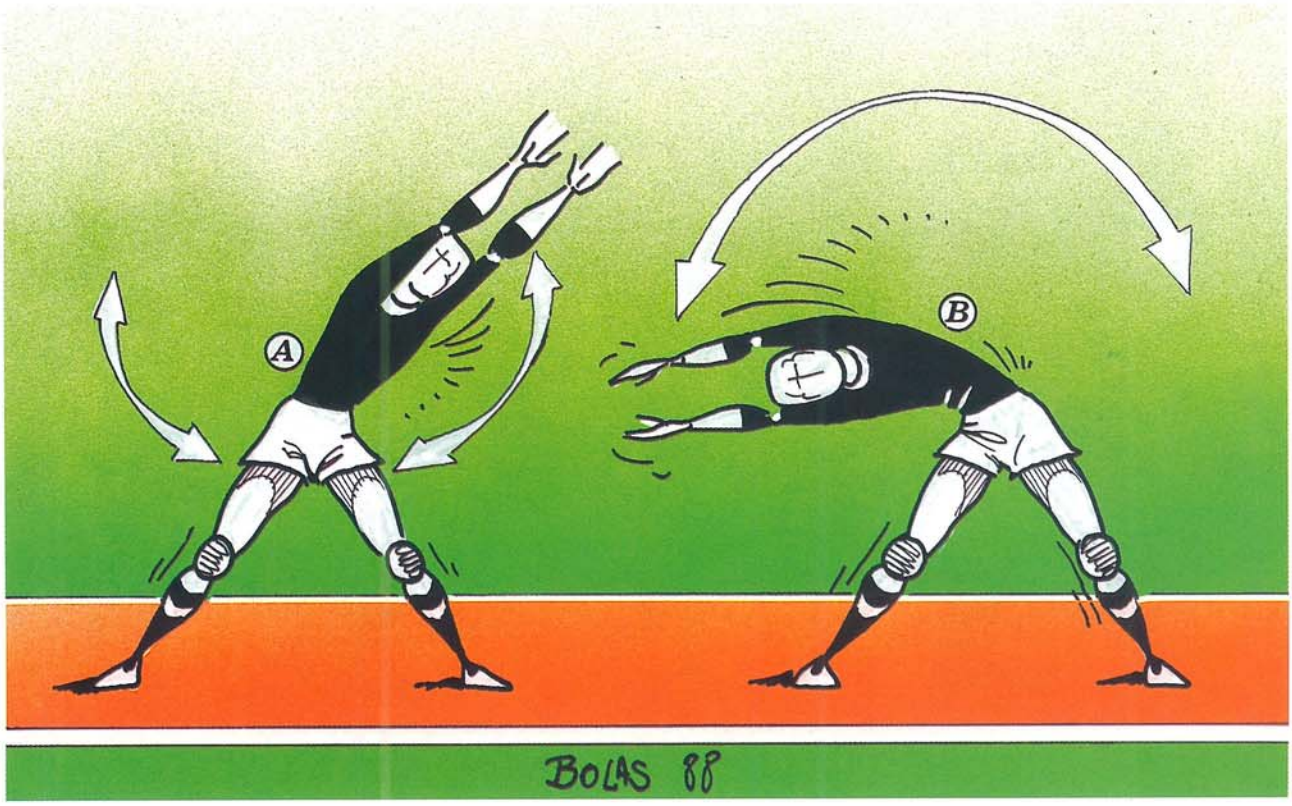

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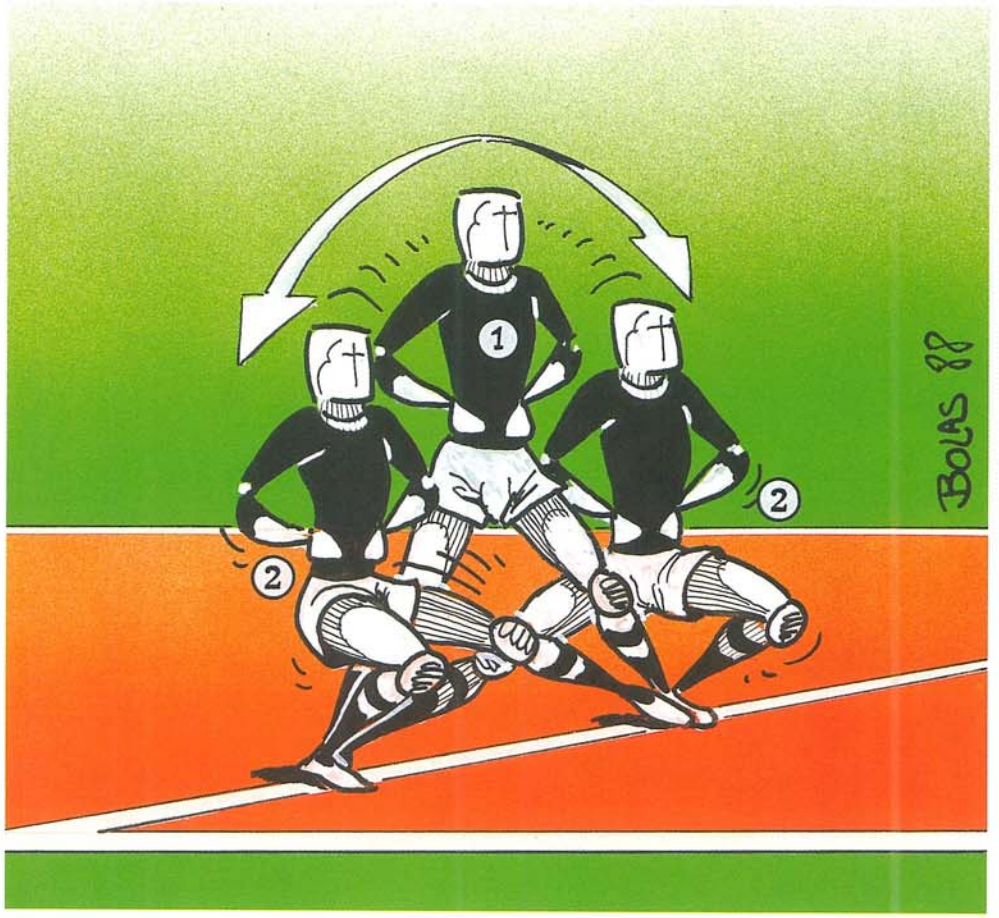

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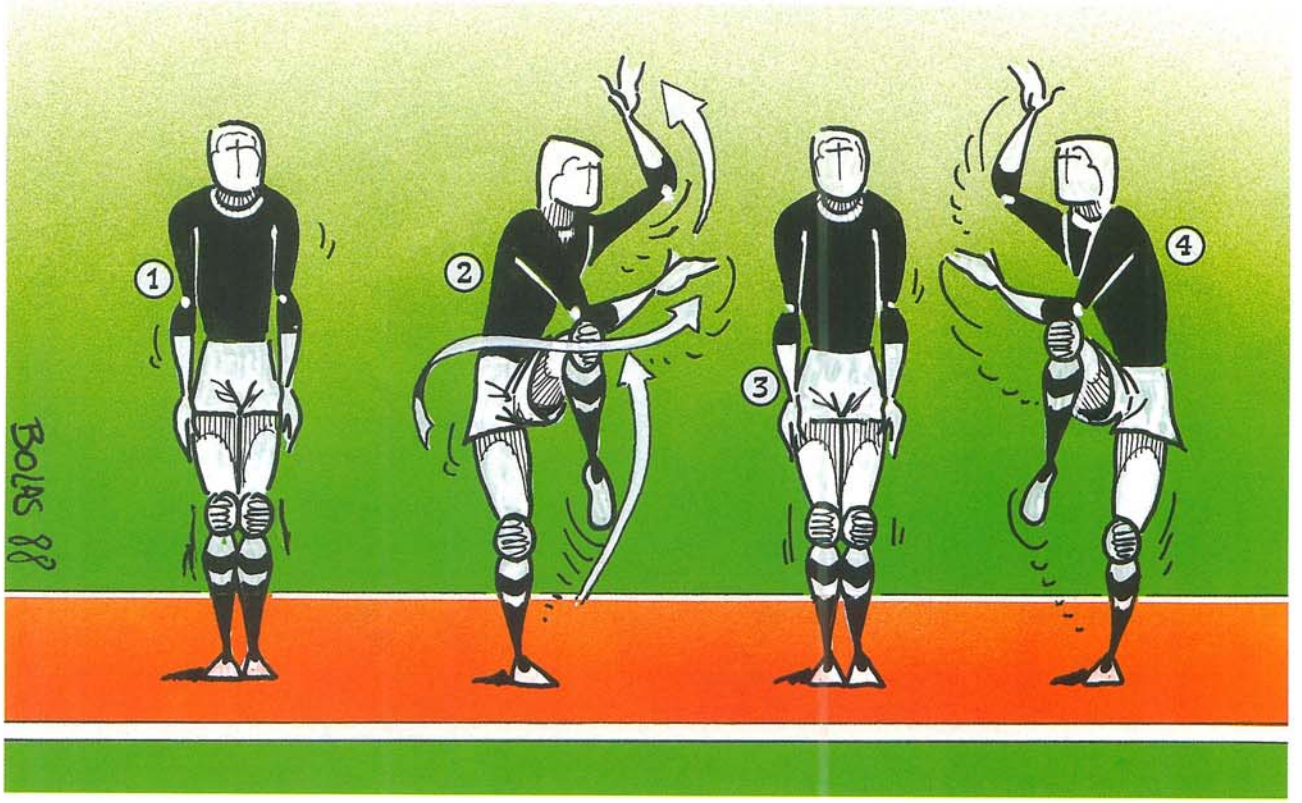

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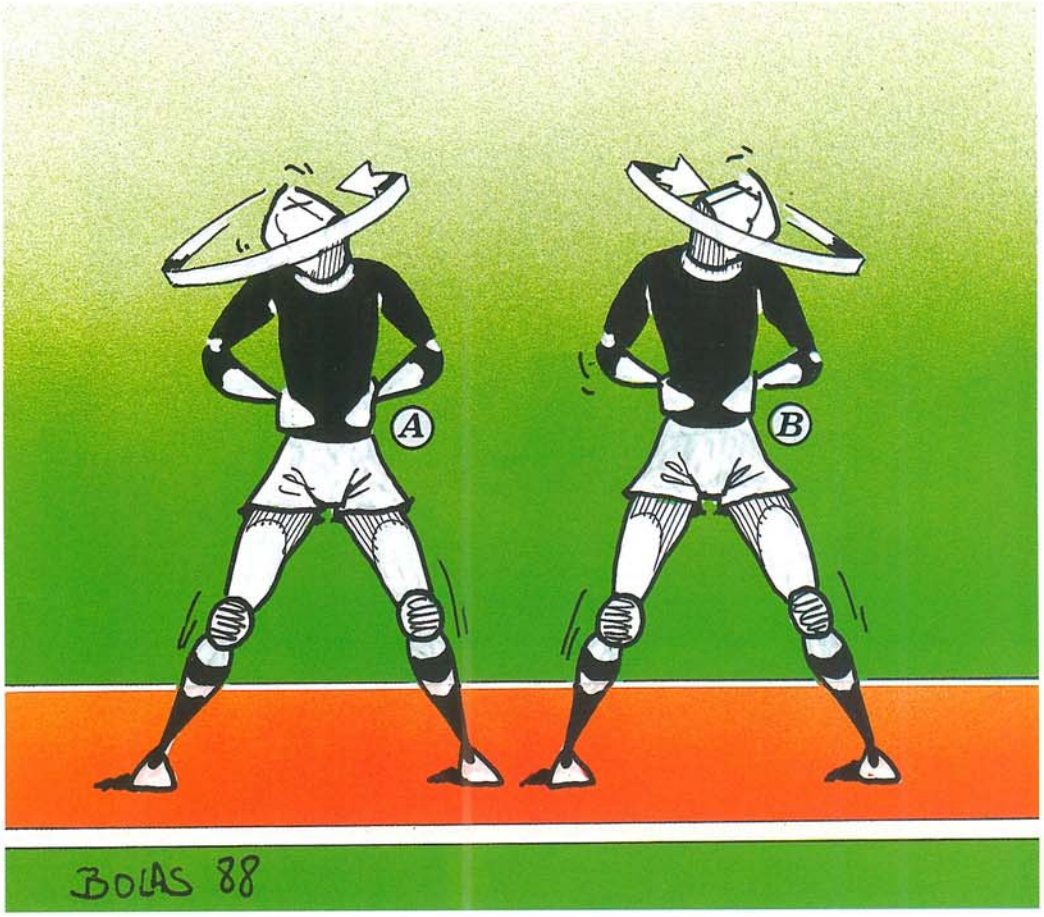

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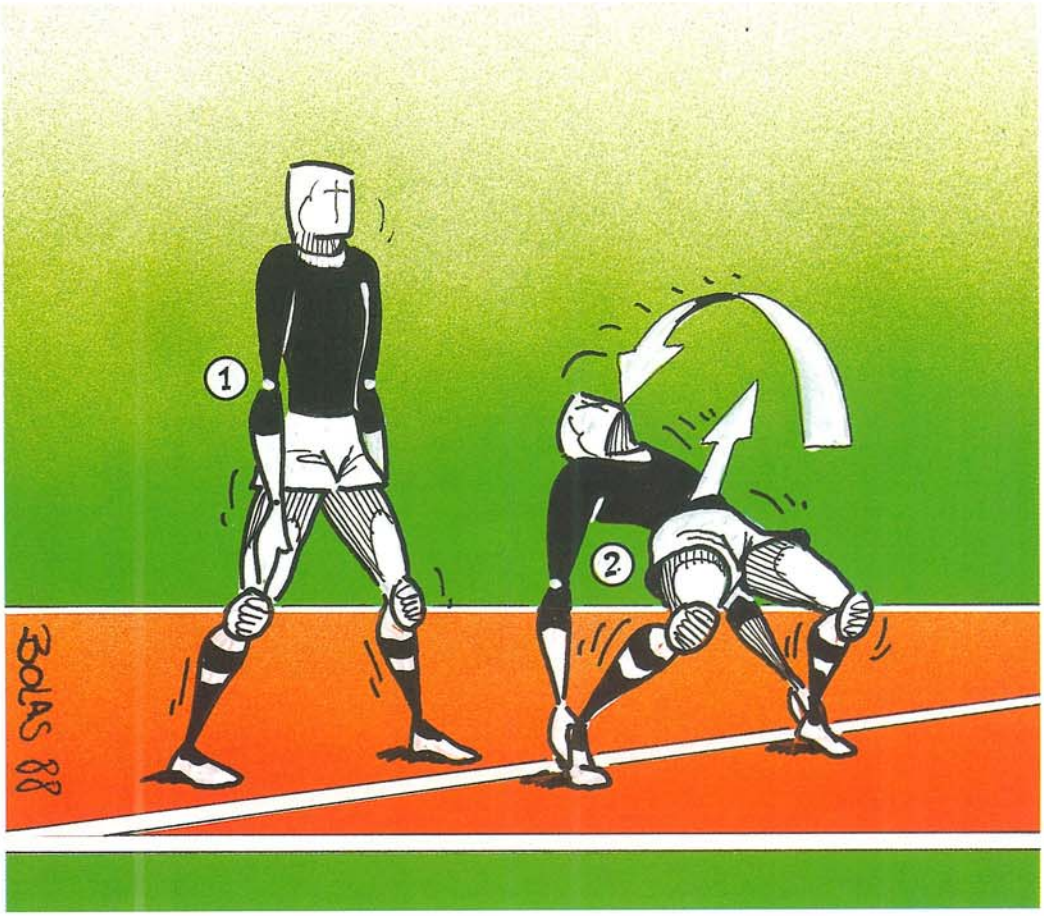

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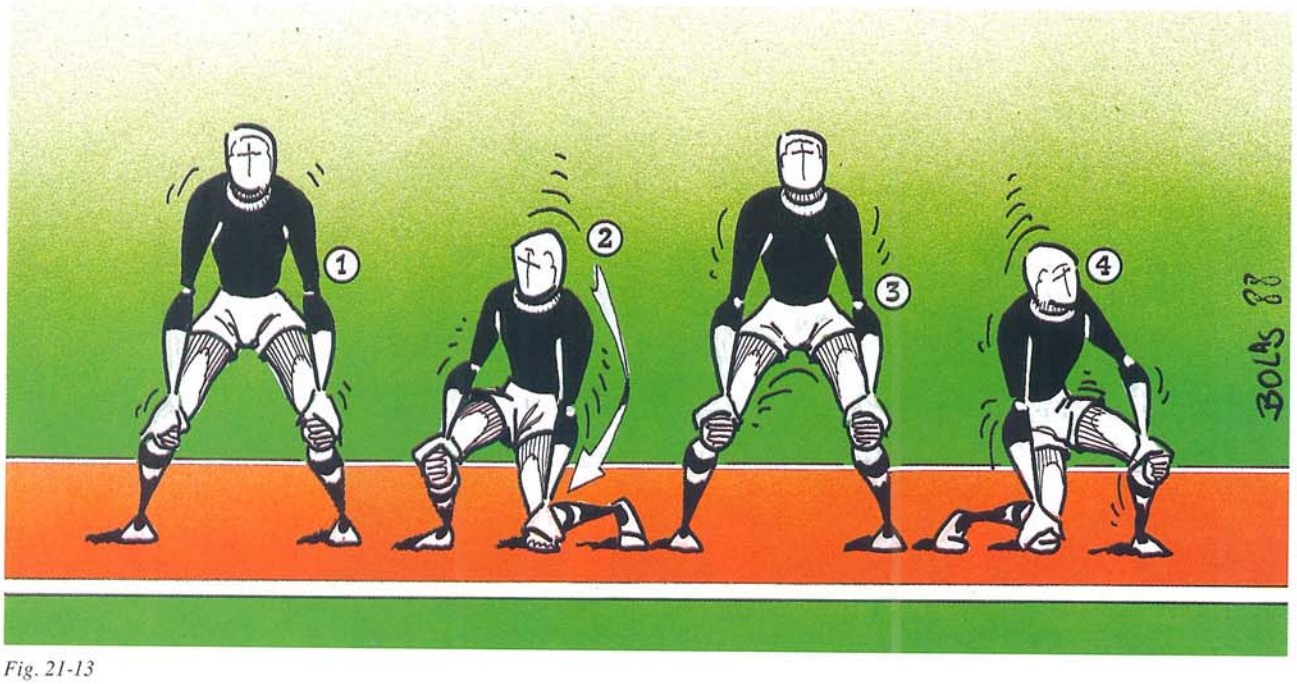

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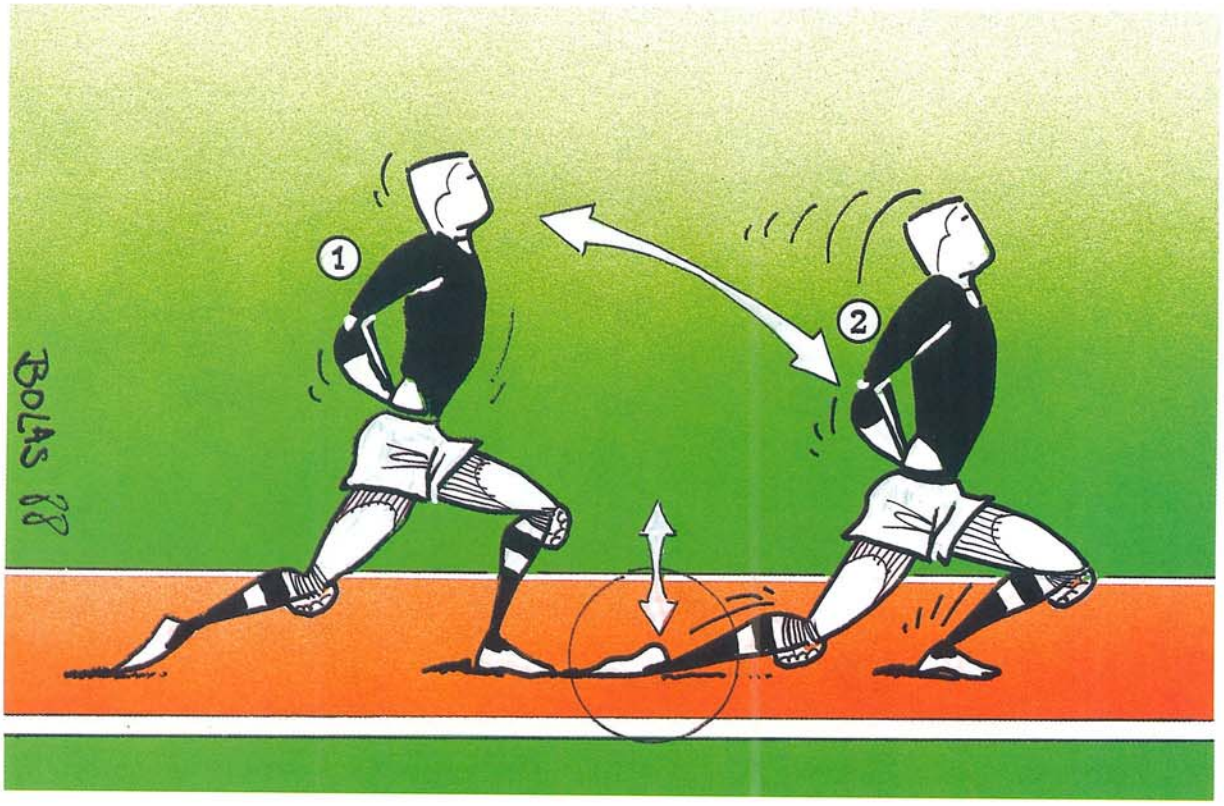

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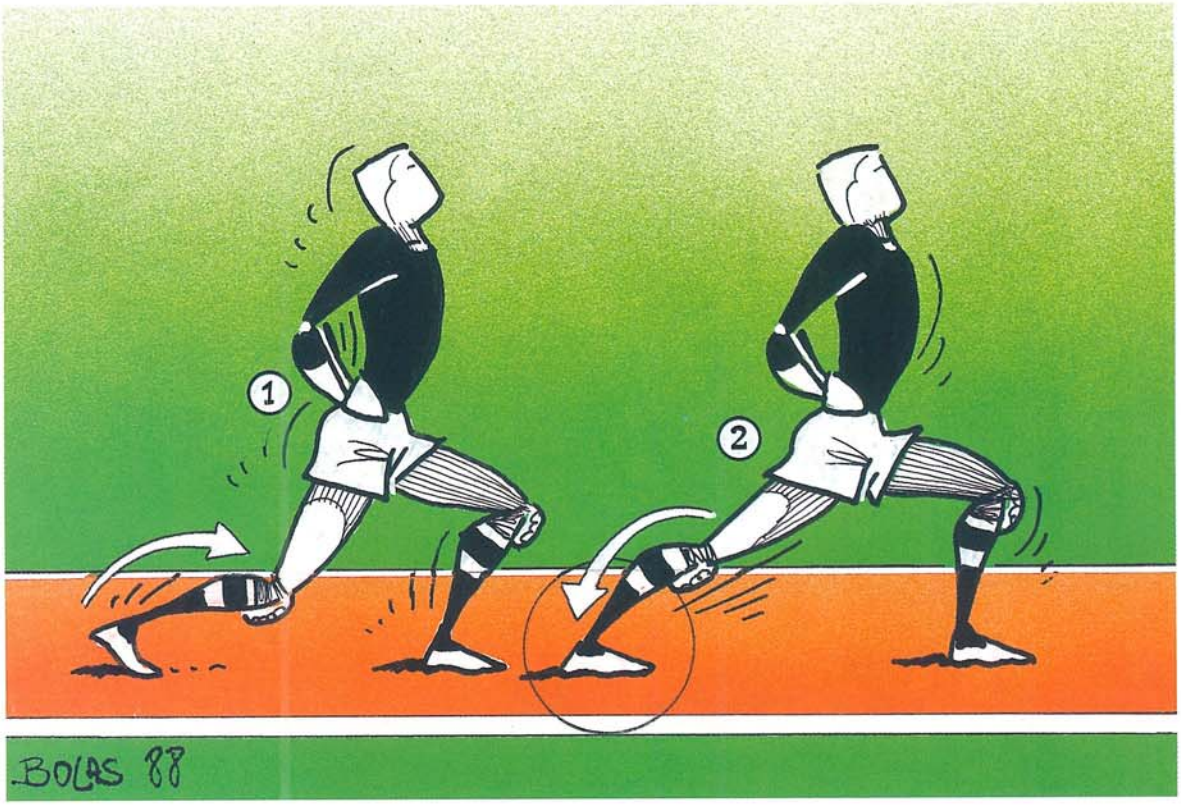

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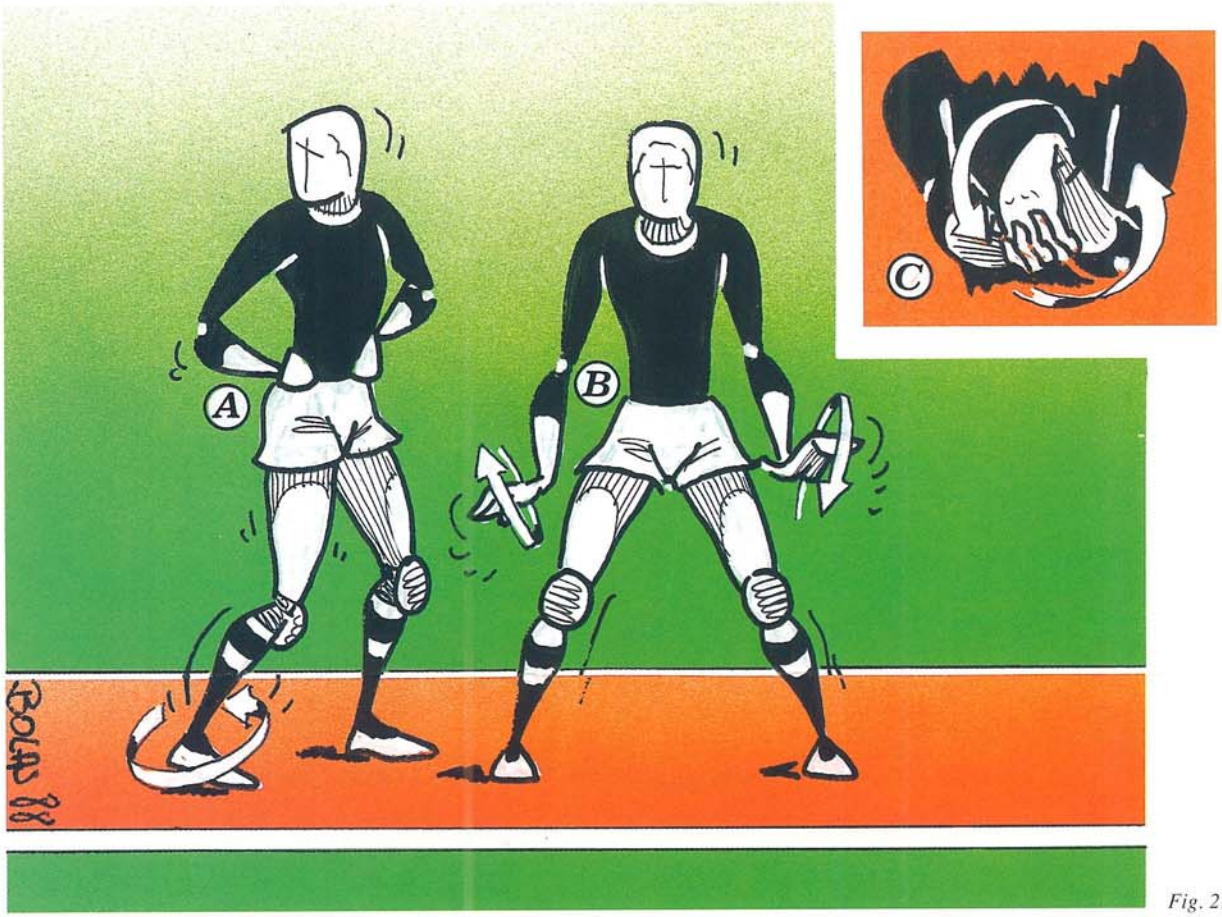

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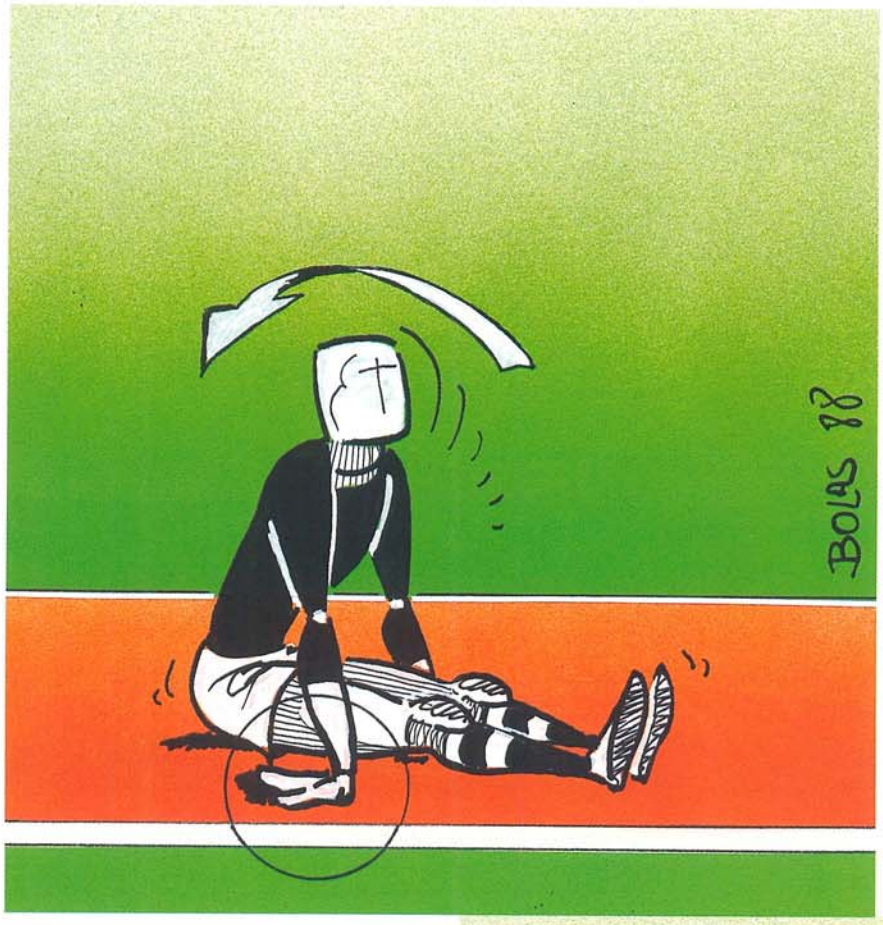

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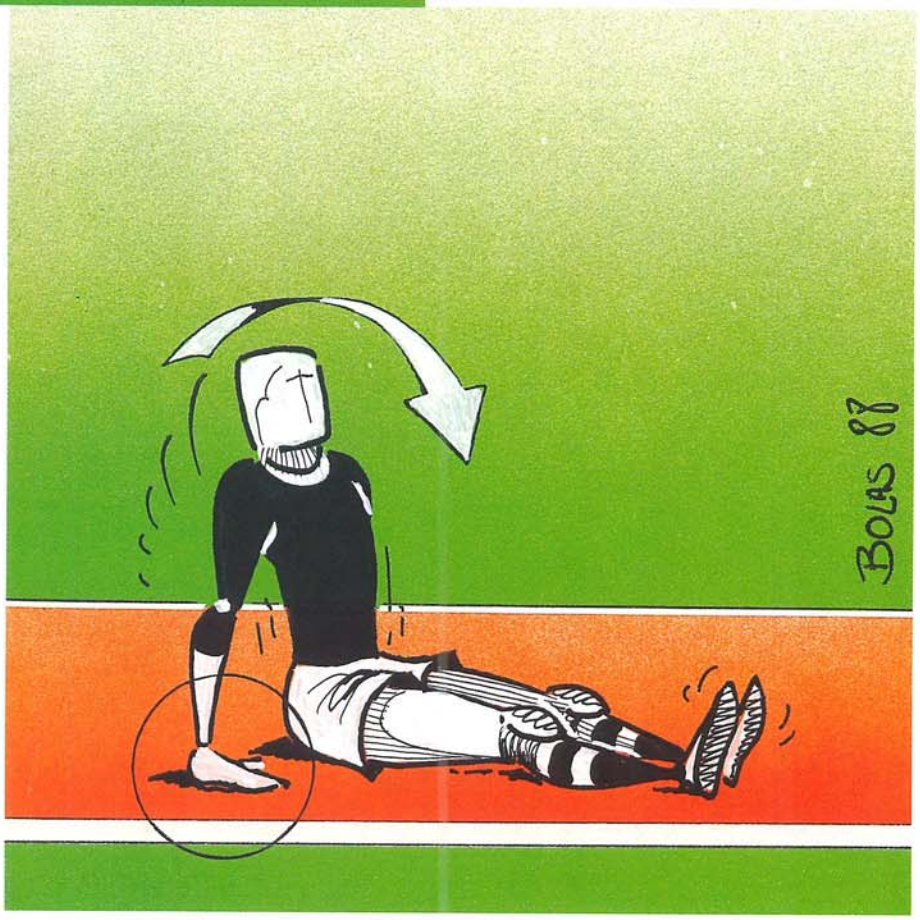

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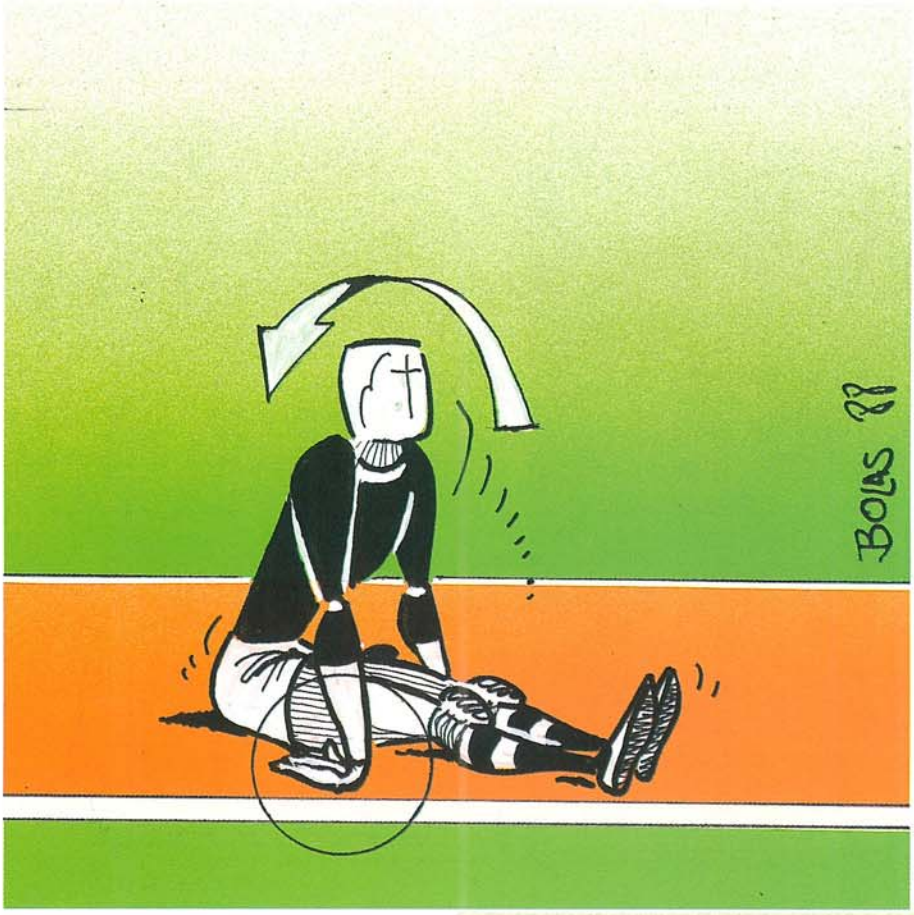

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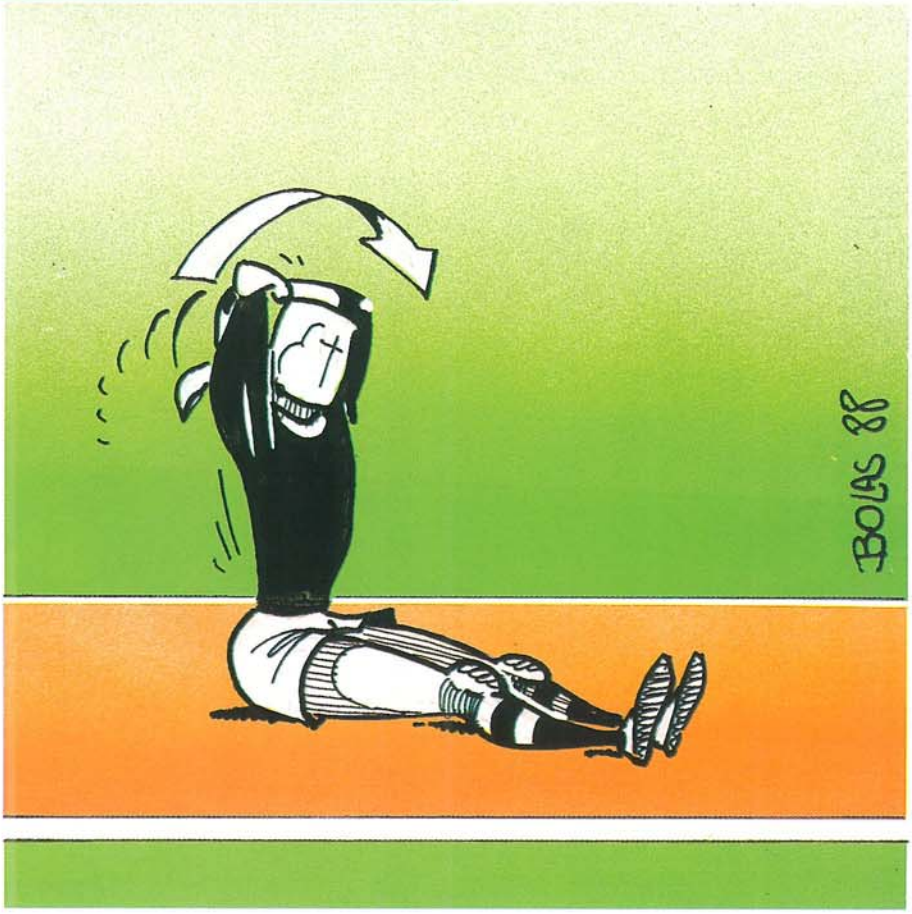

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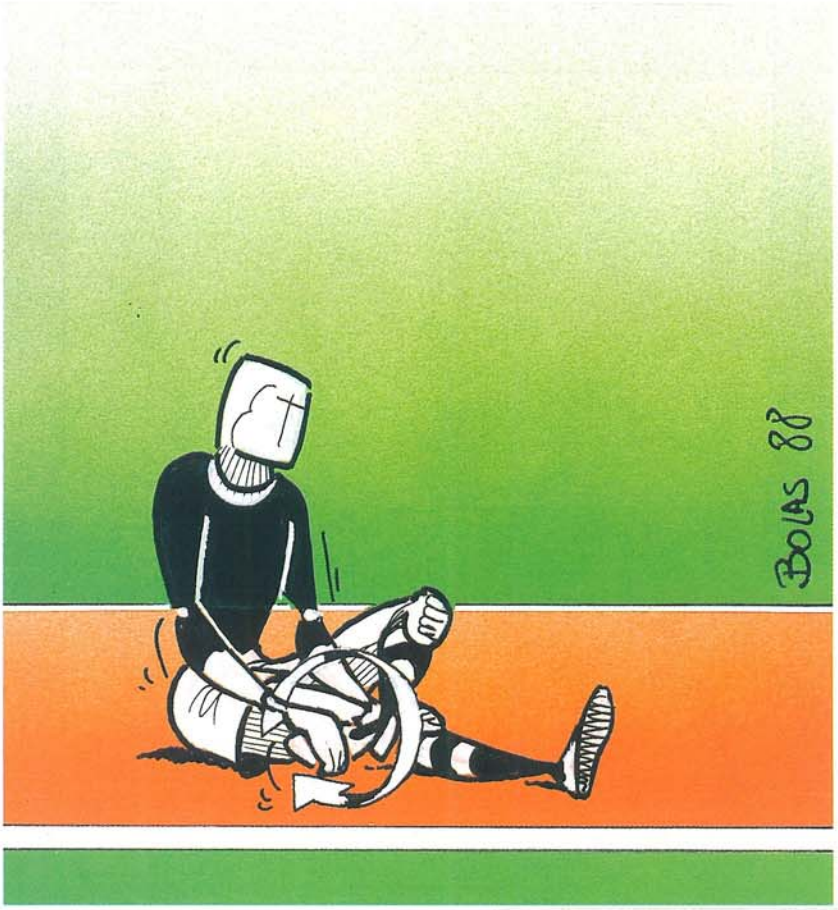

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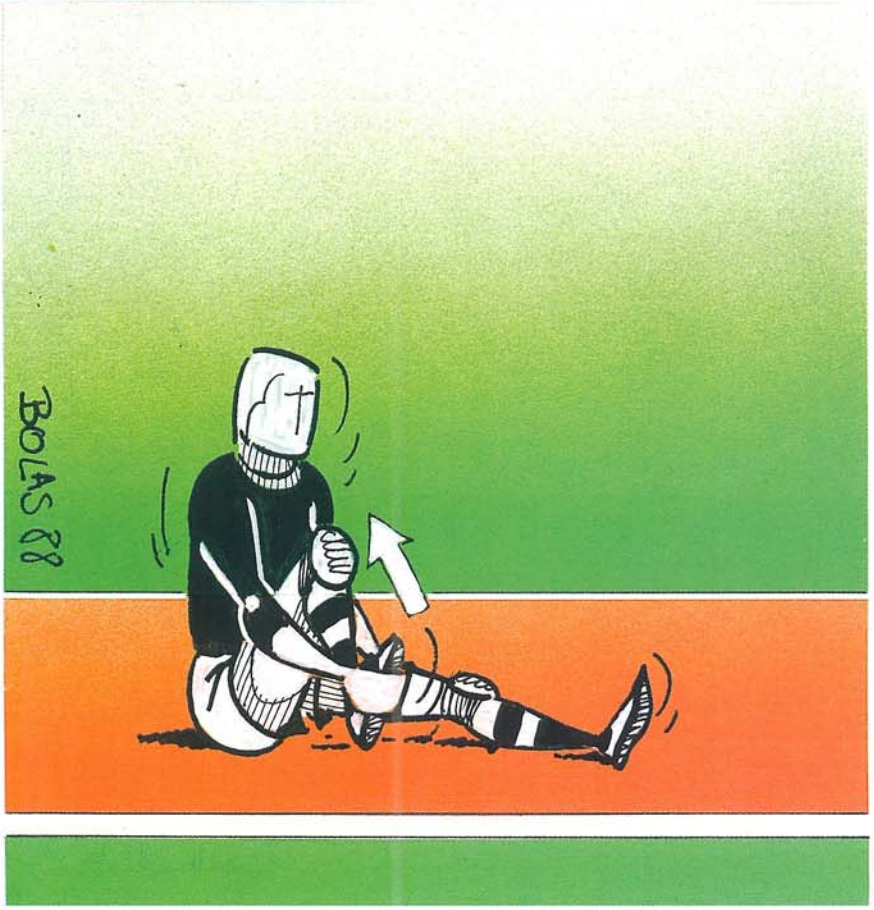

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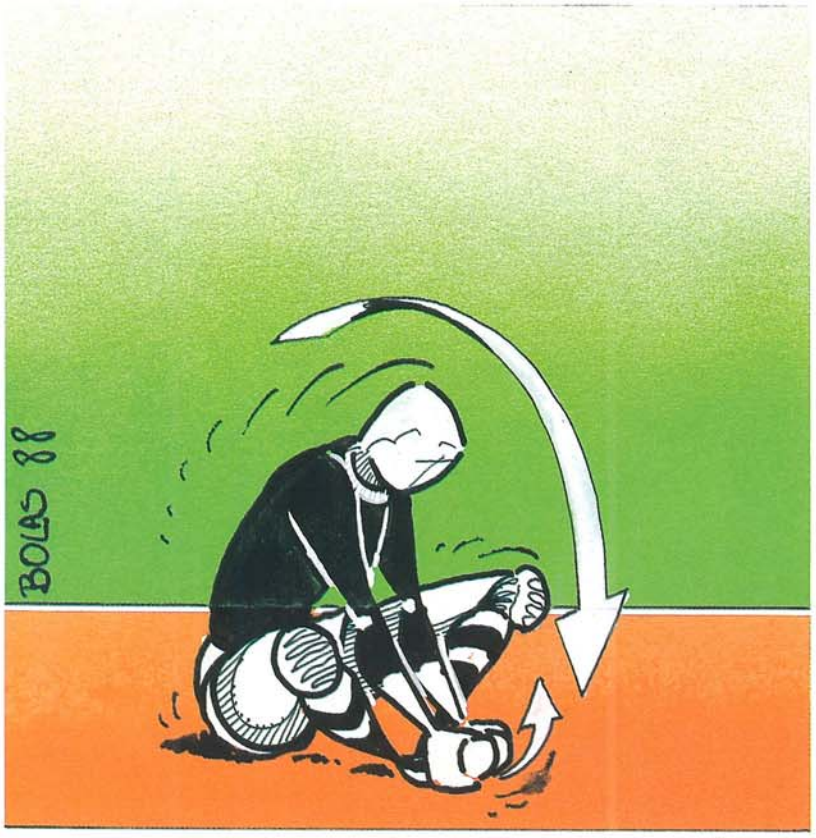
Fig. 21-24



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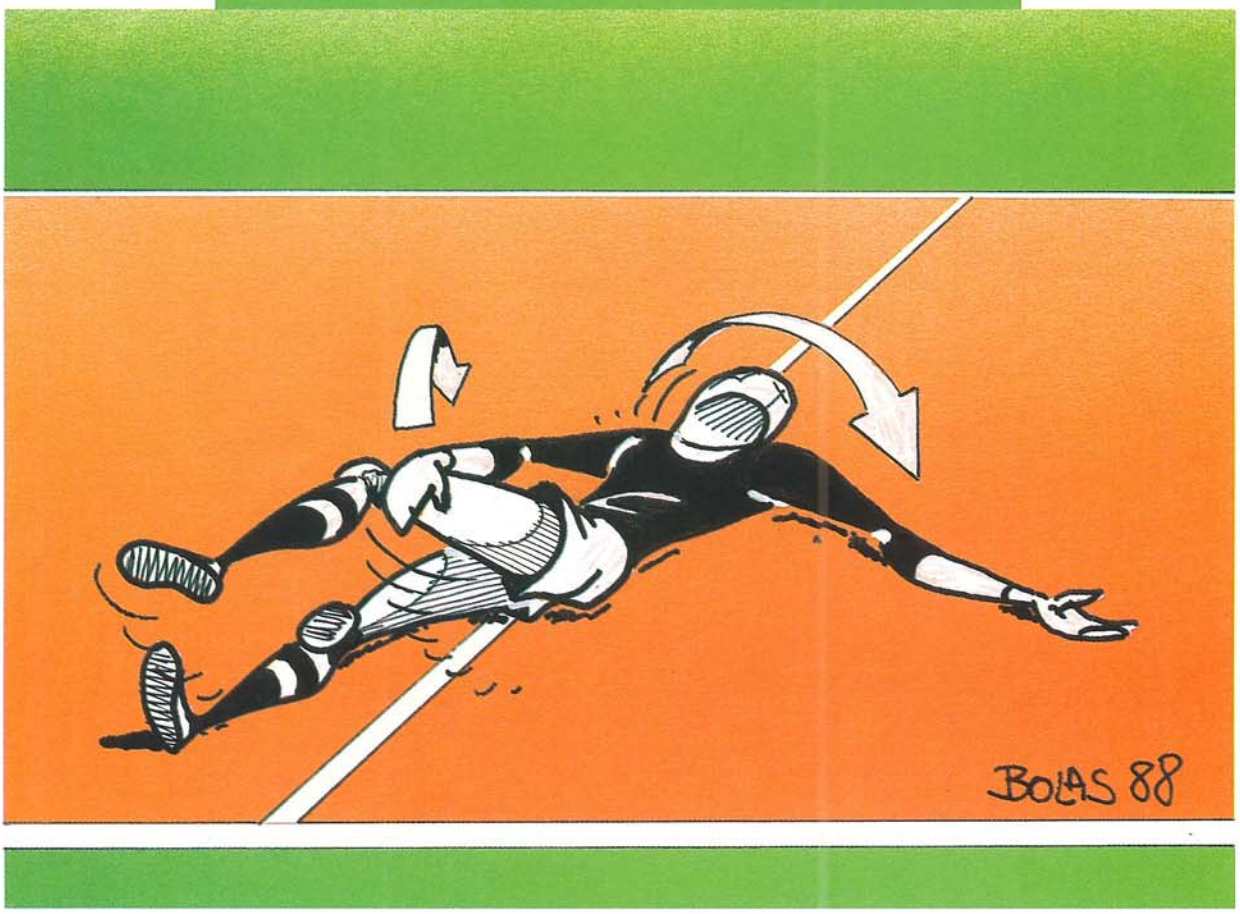

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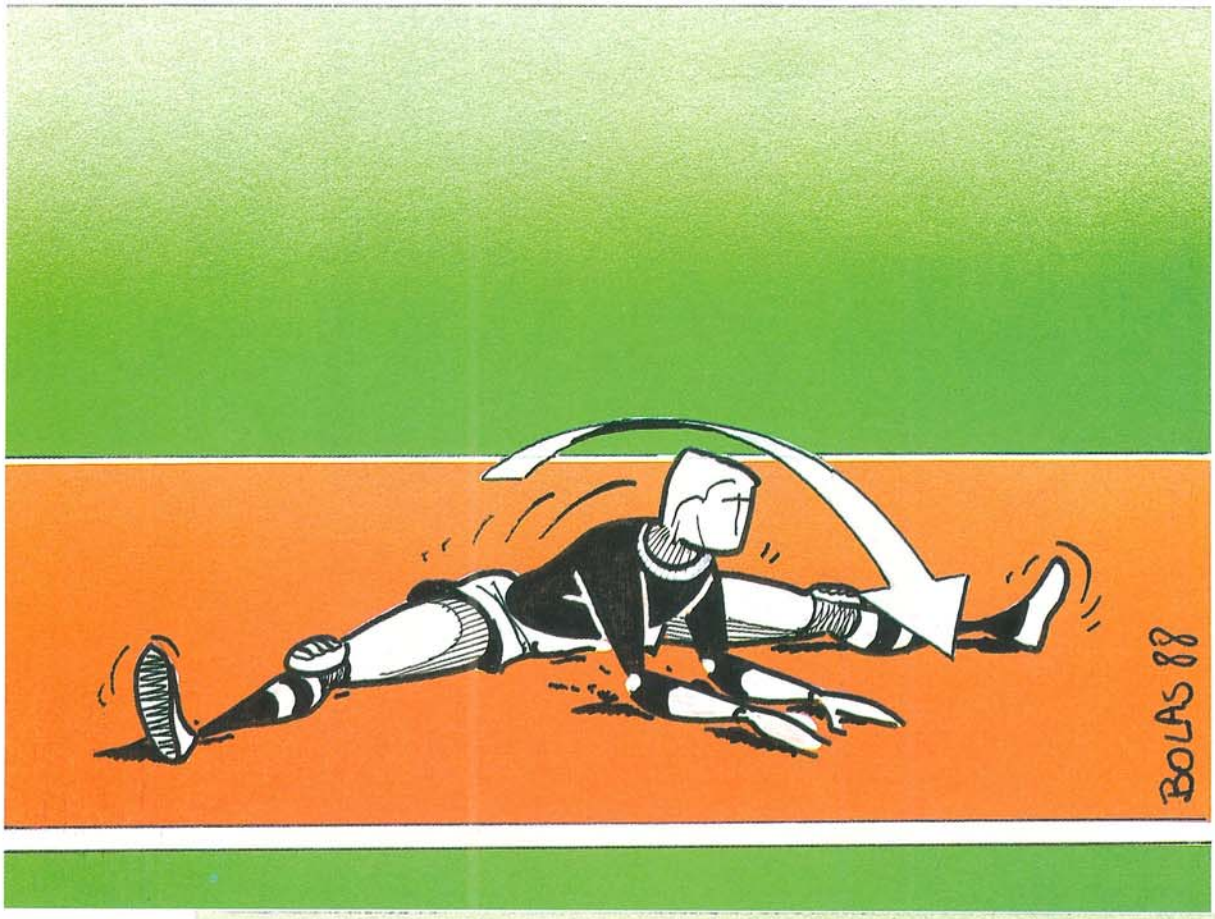

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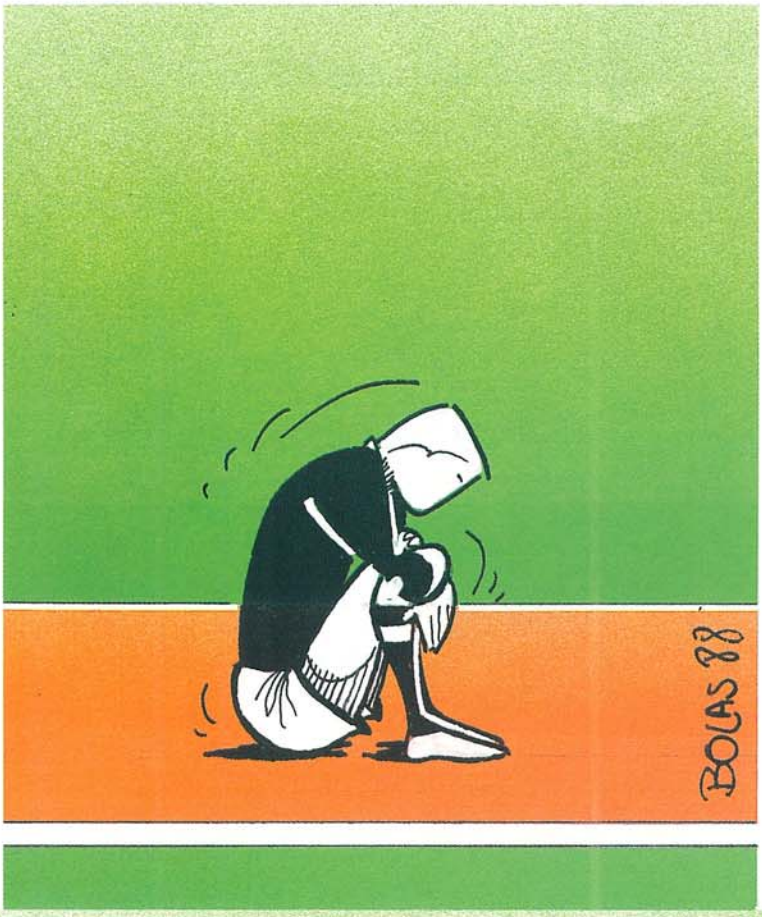

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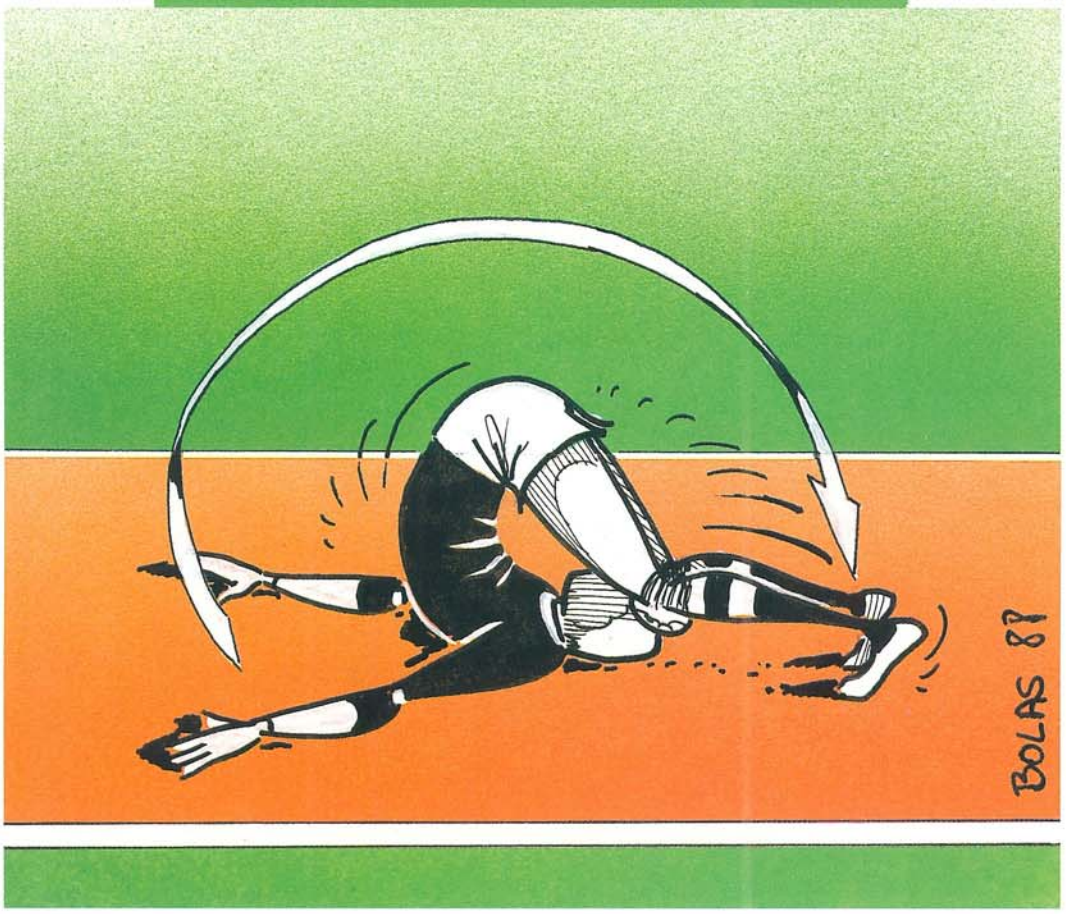

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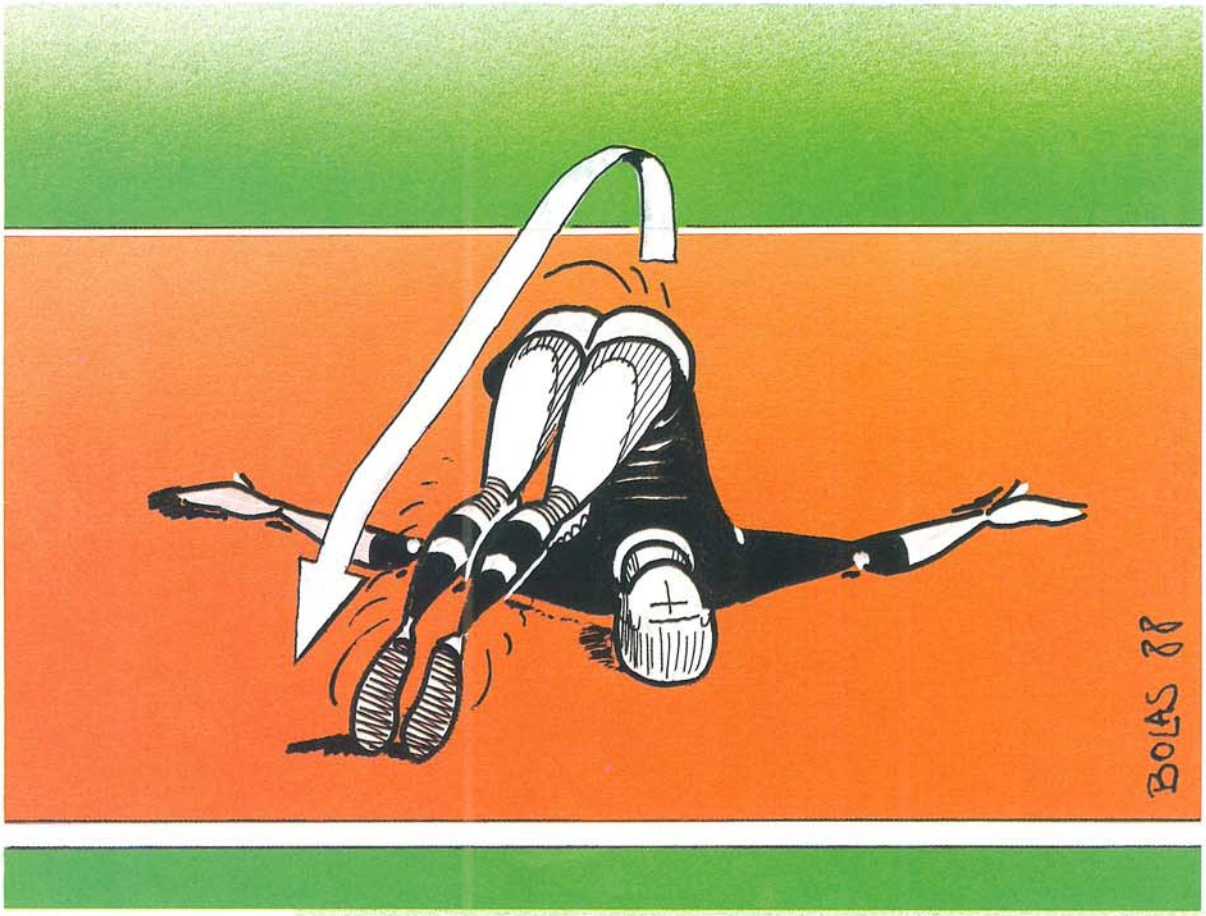

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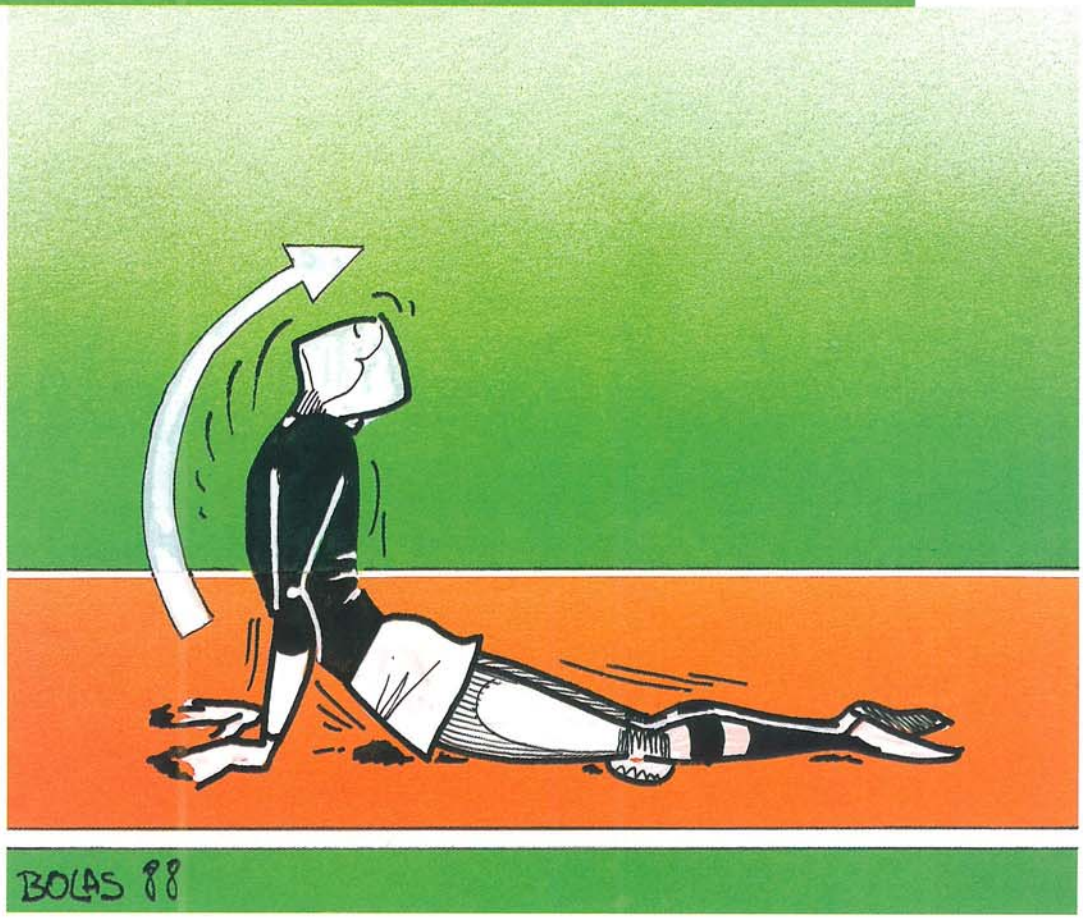

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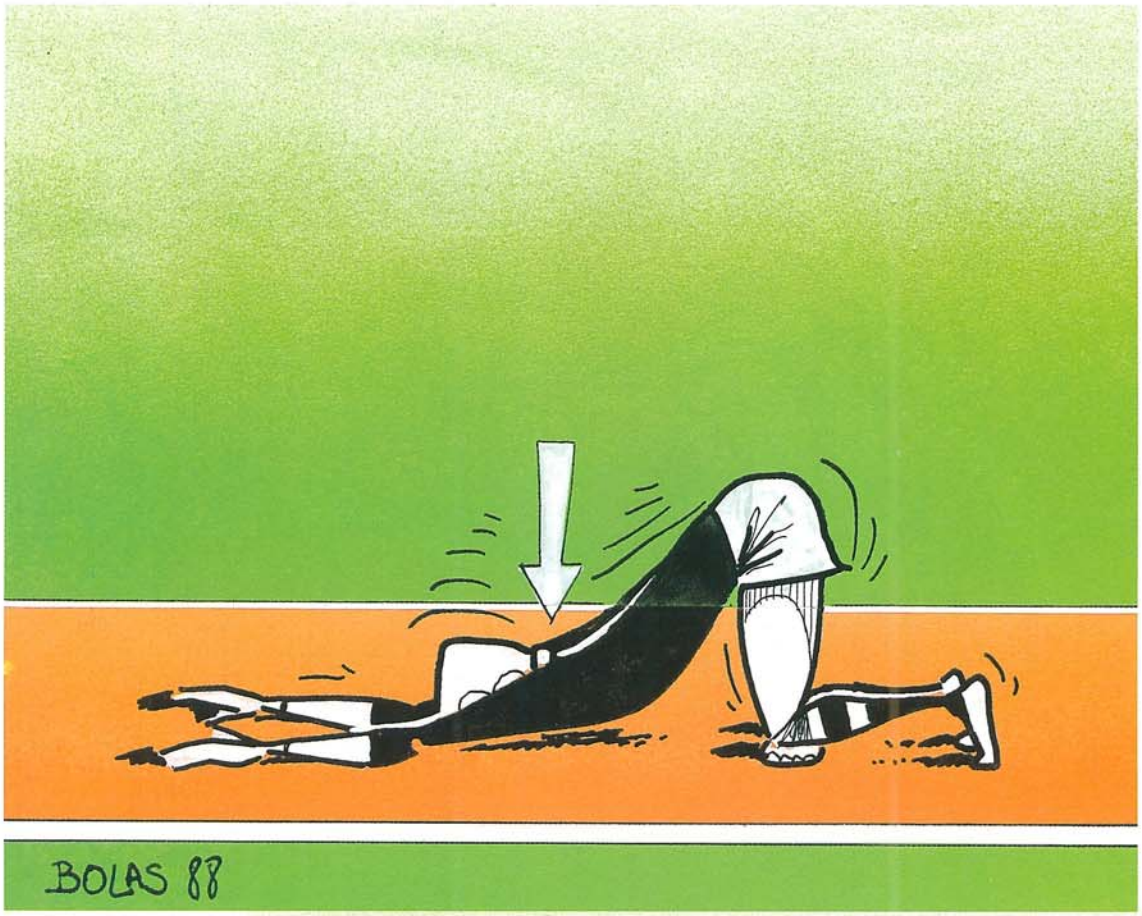

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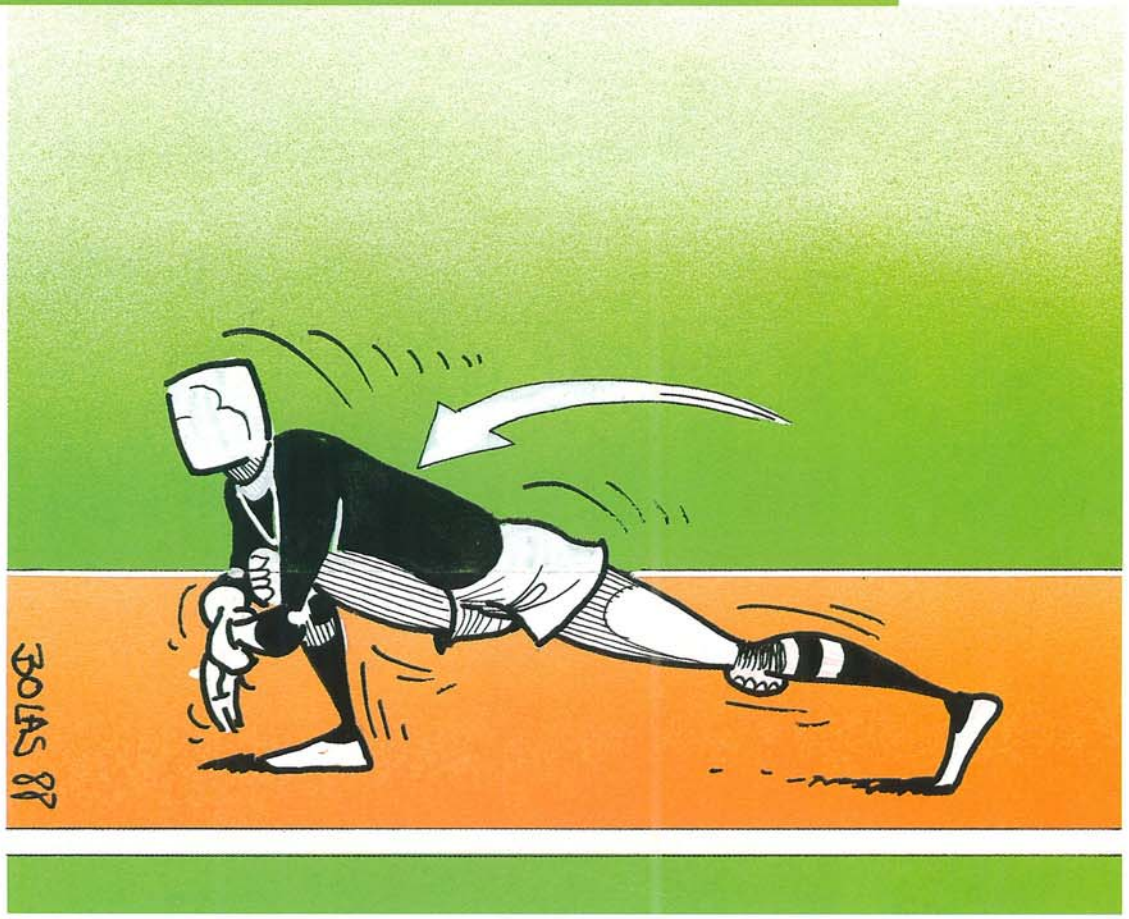

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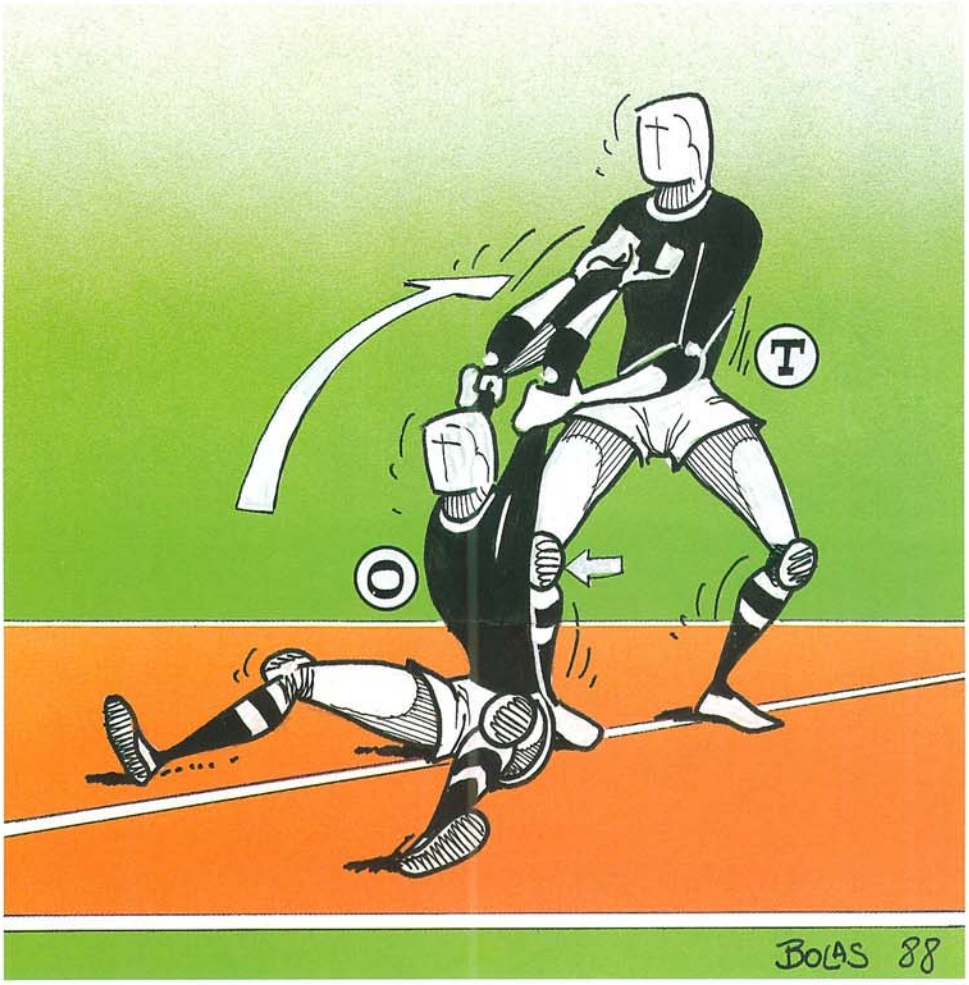

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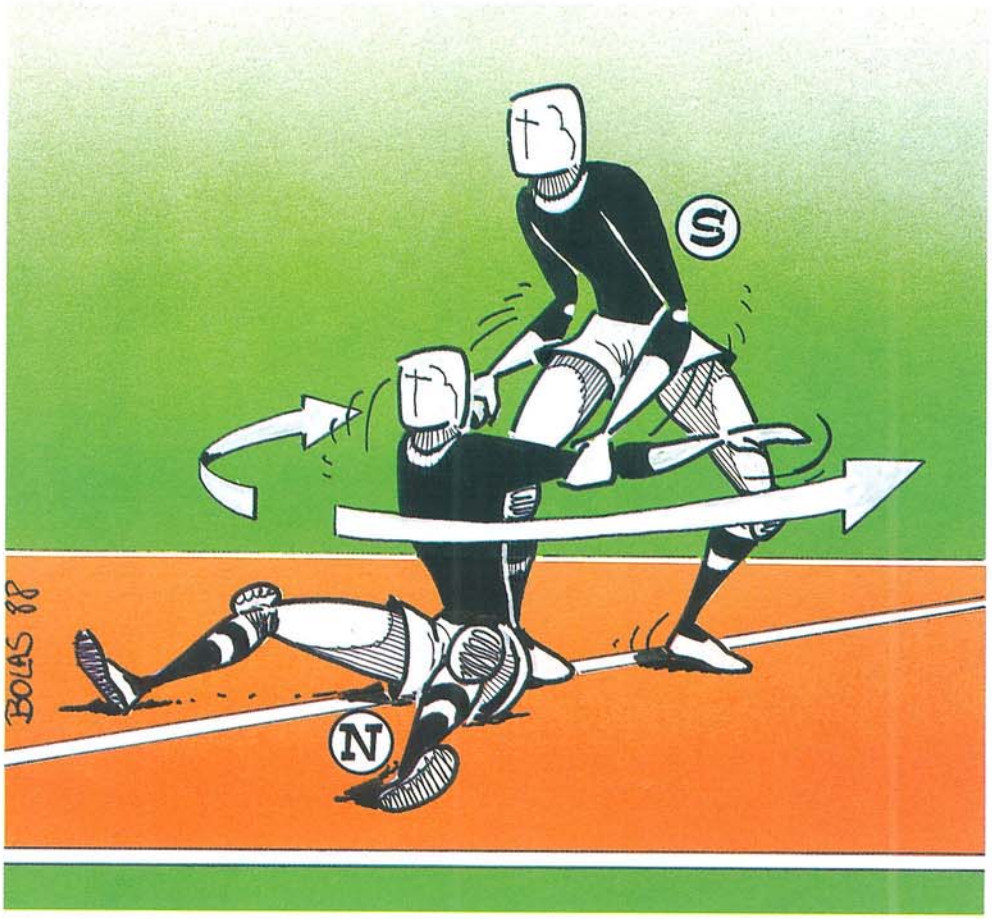

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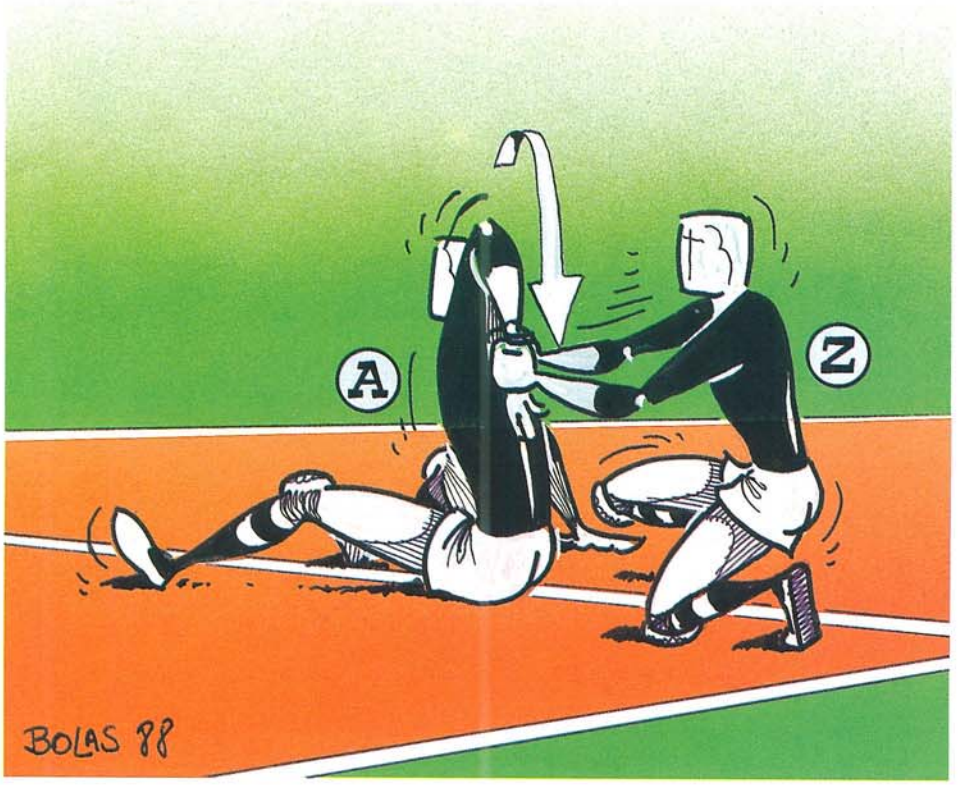

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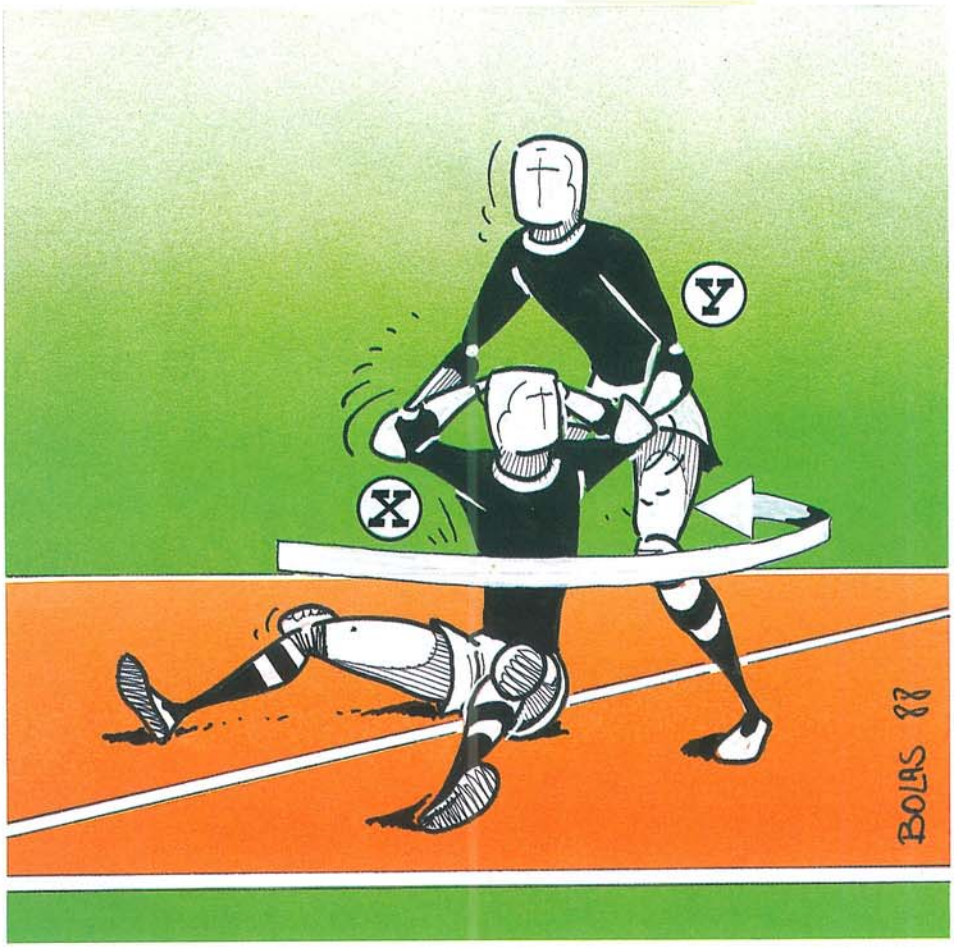

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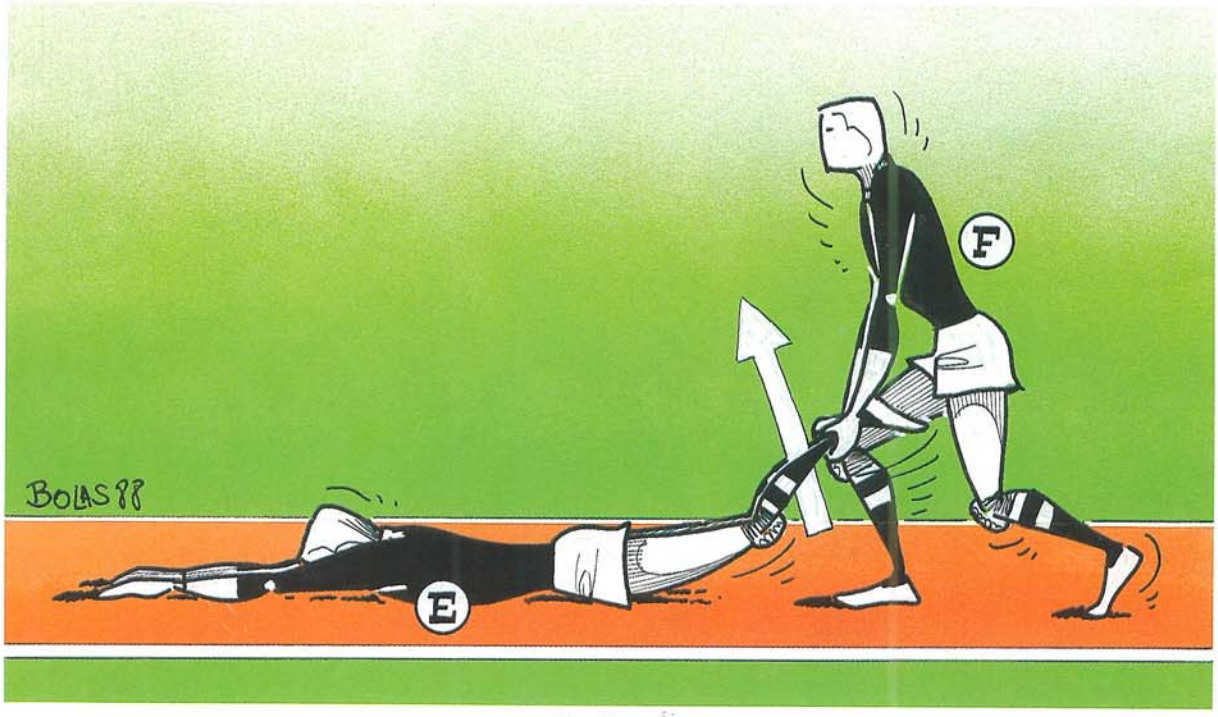

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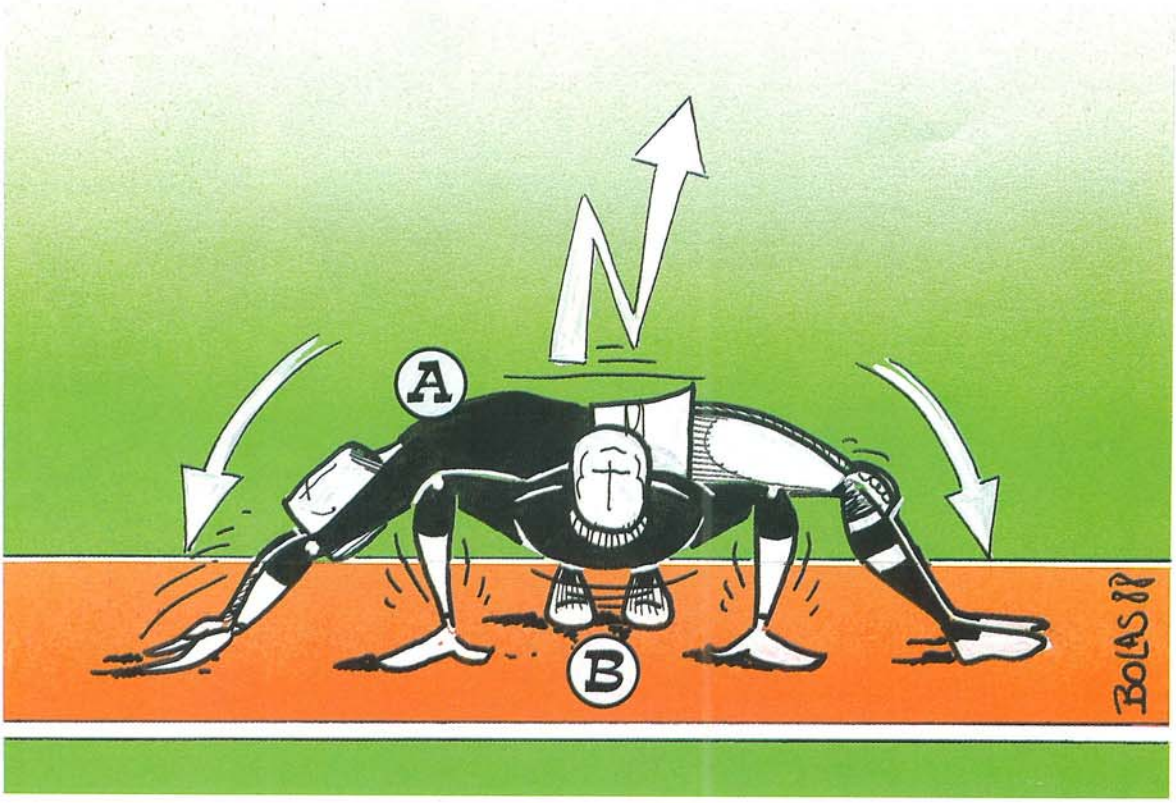

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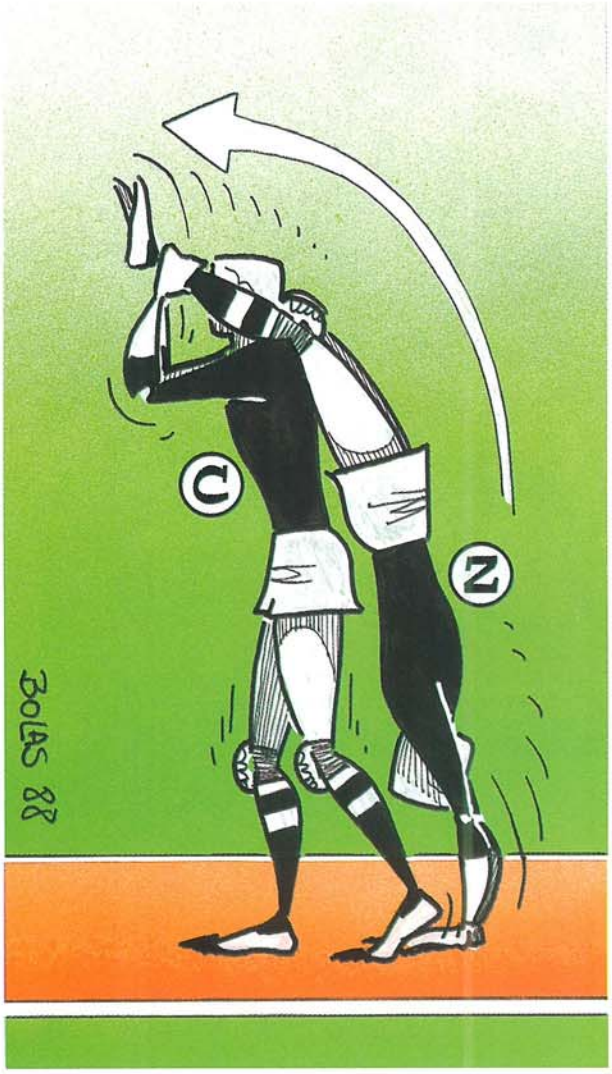

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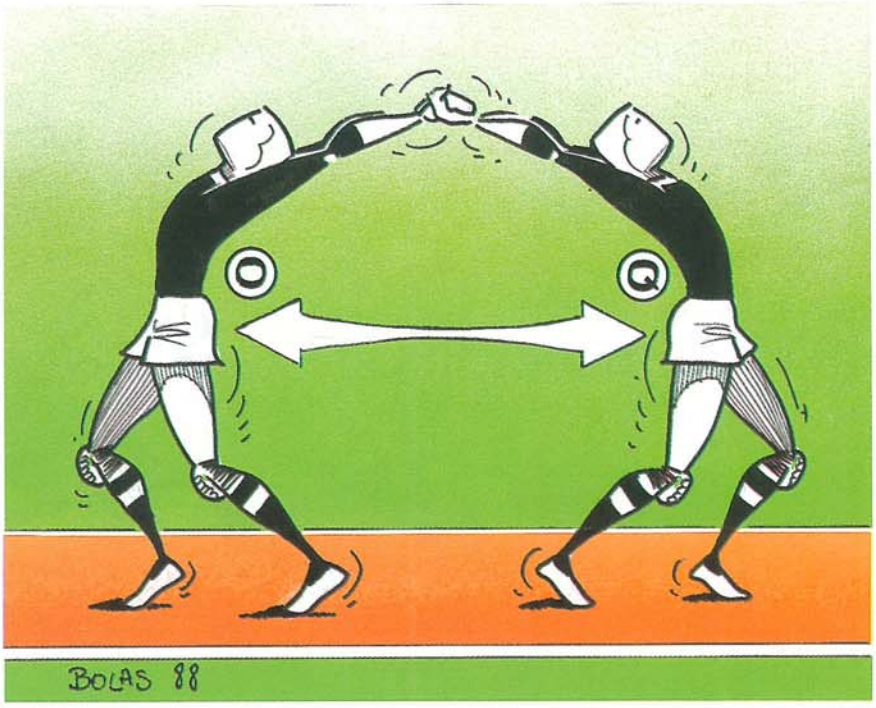

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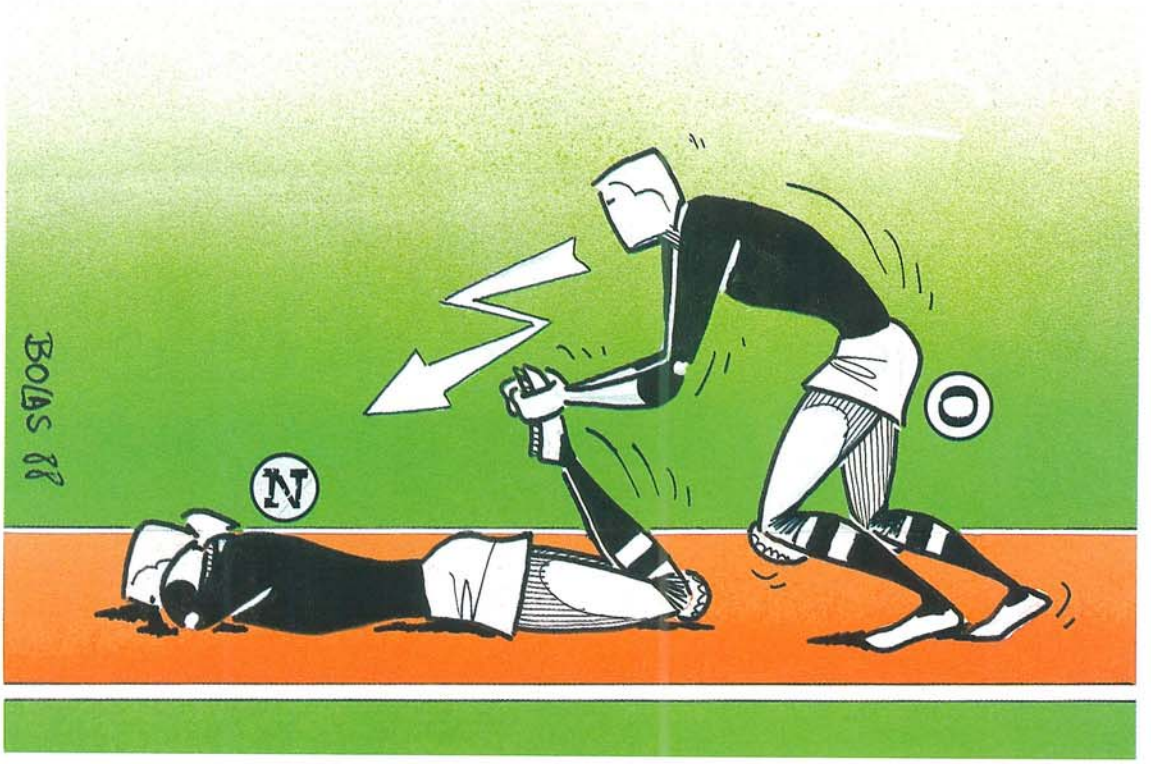

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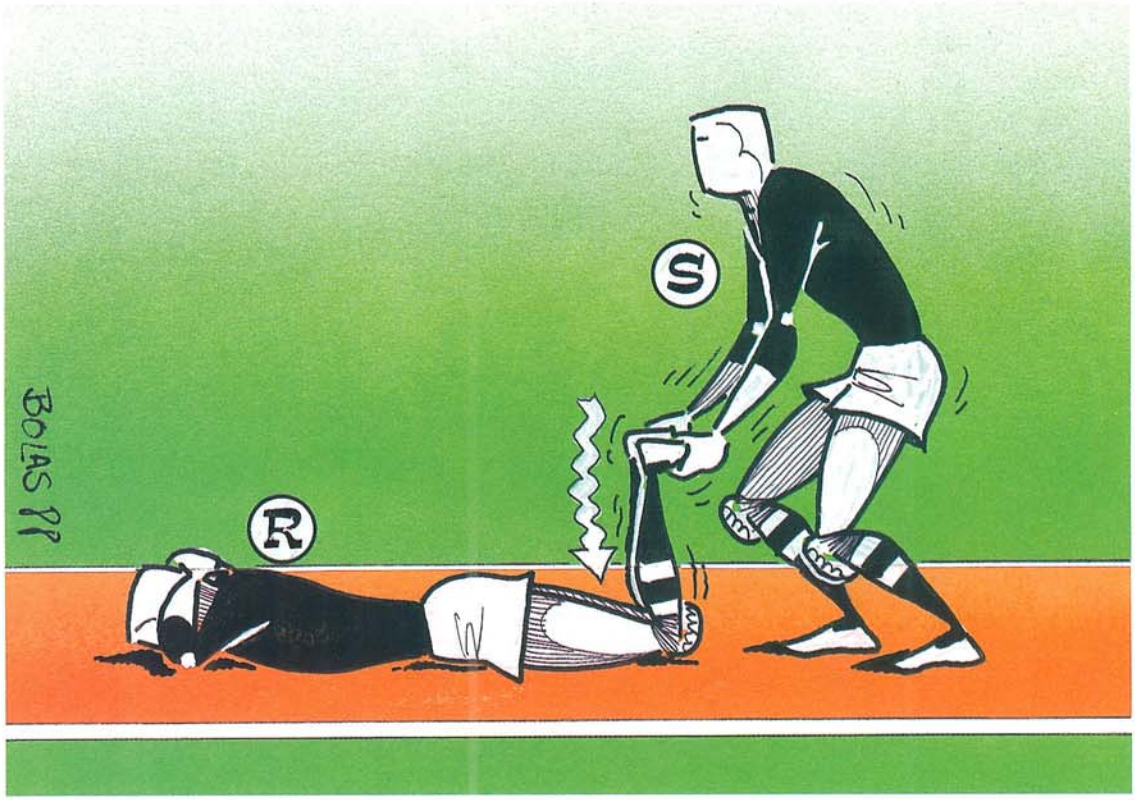


Fig. 21-47

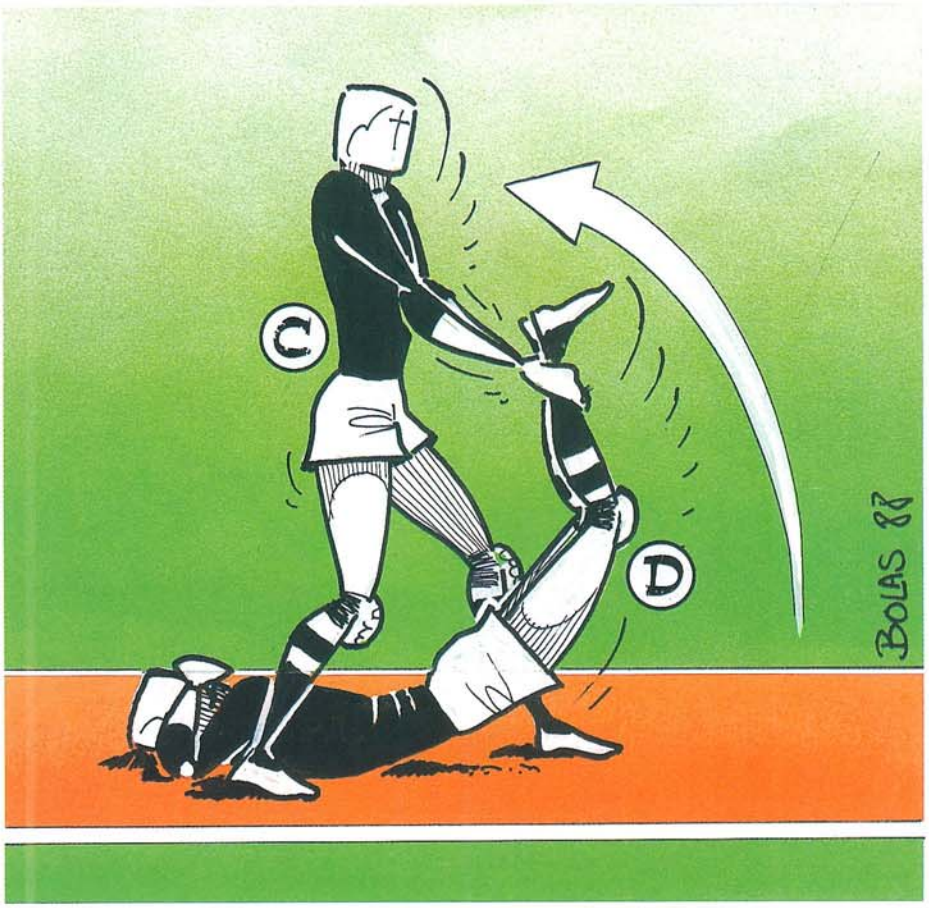


Fig. 21-48

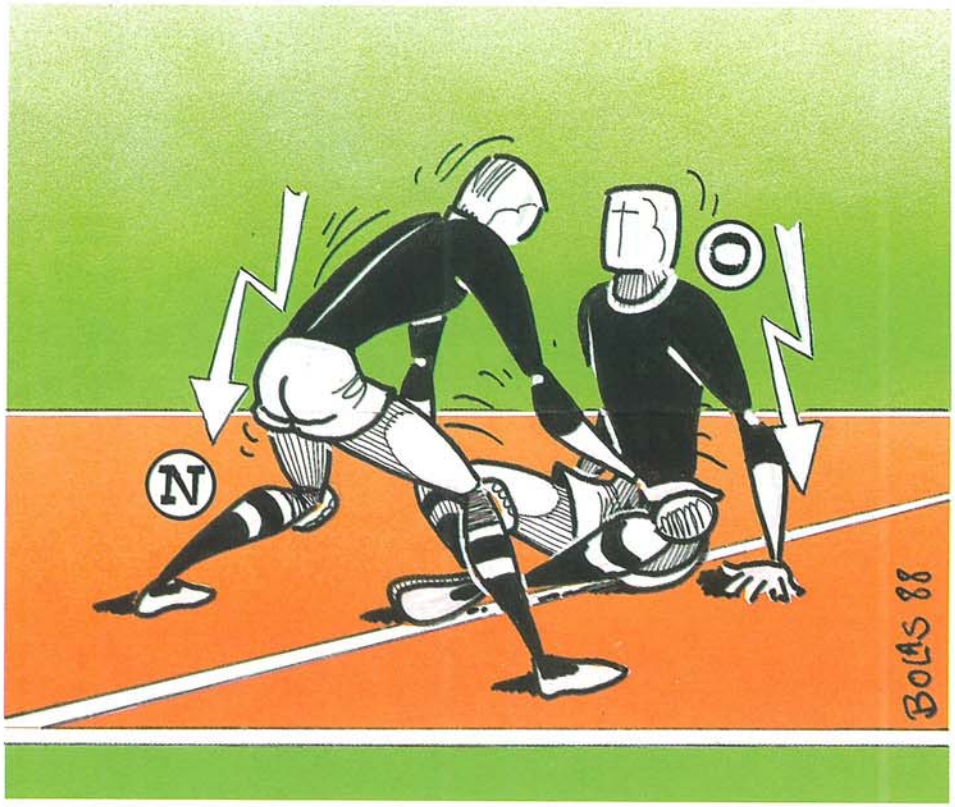


Fig. 21-49

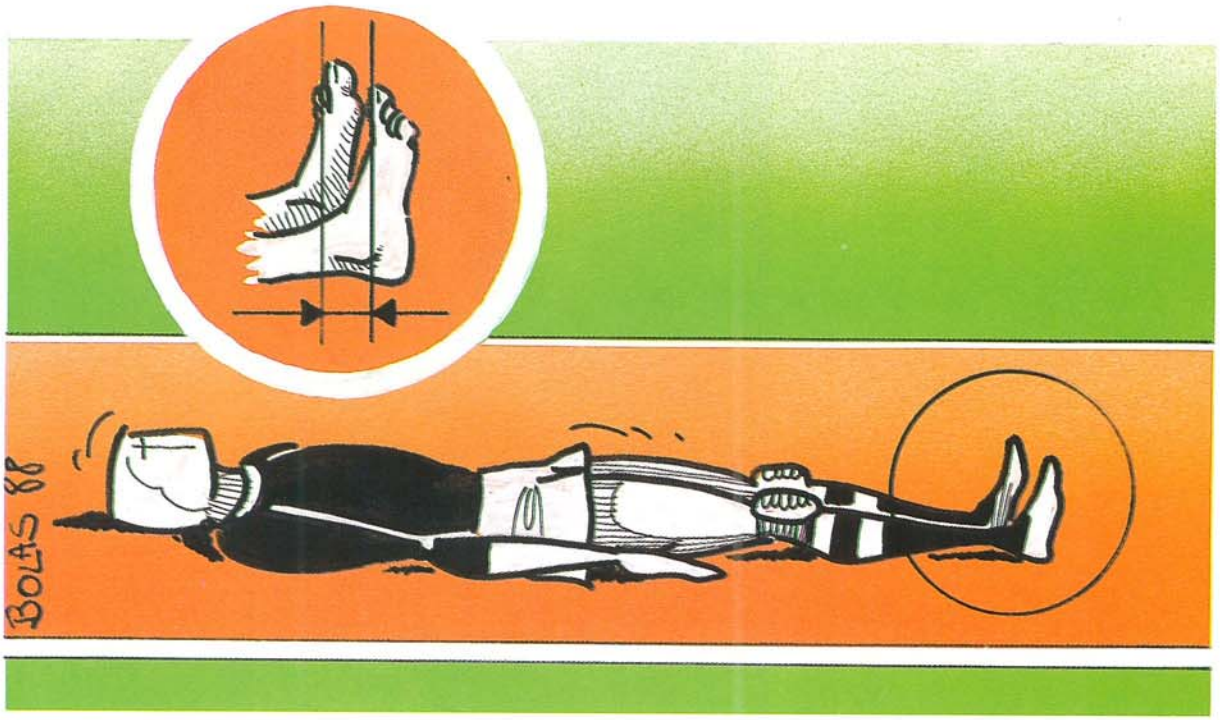


Fig. 21-50

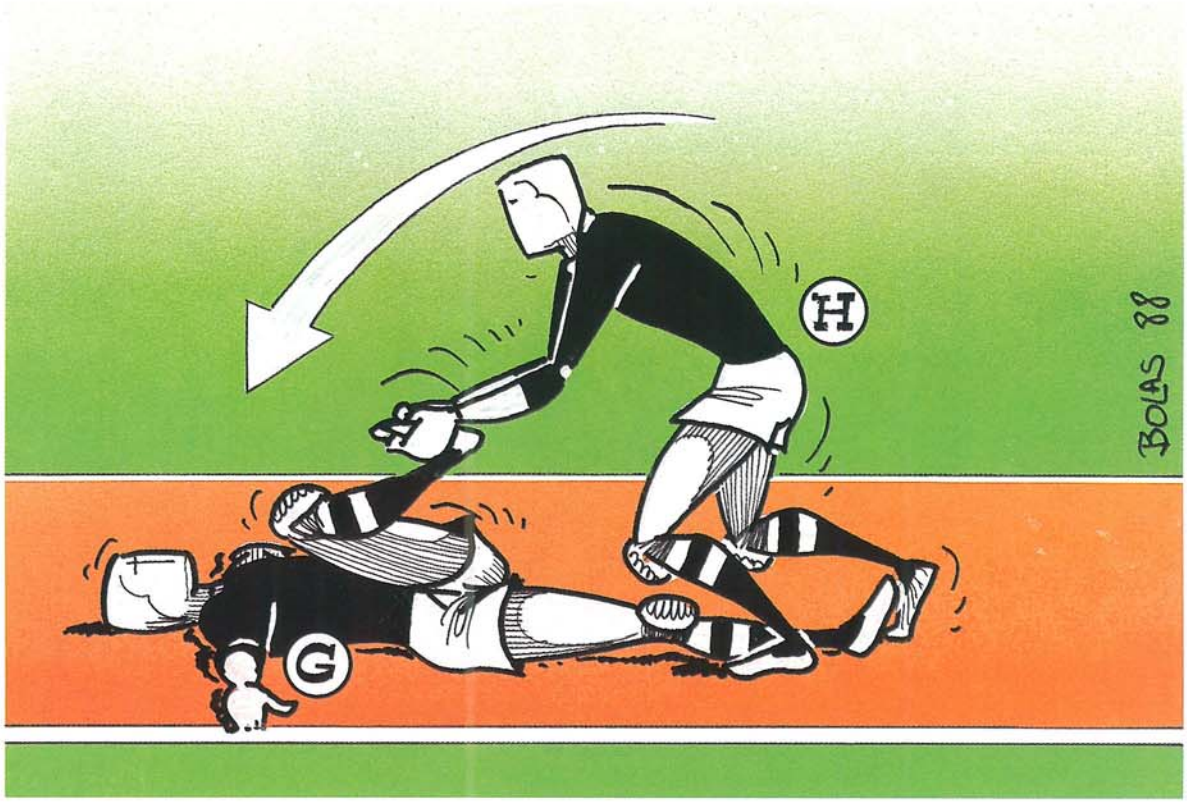


Fig. 21-51

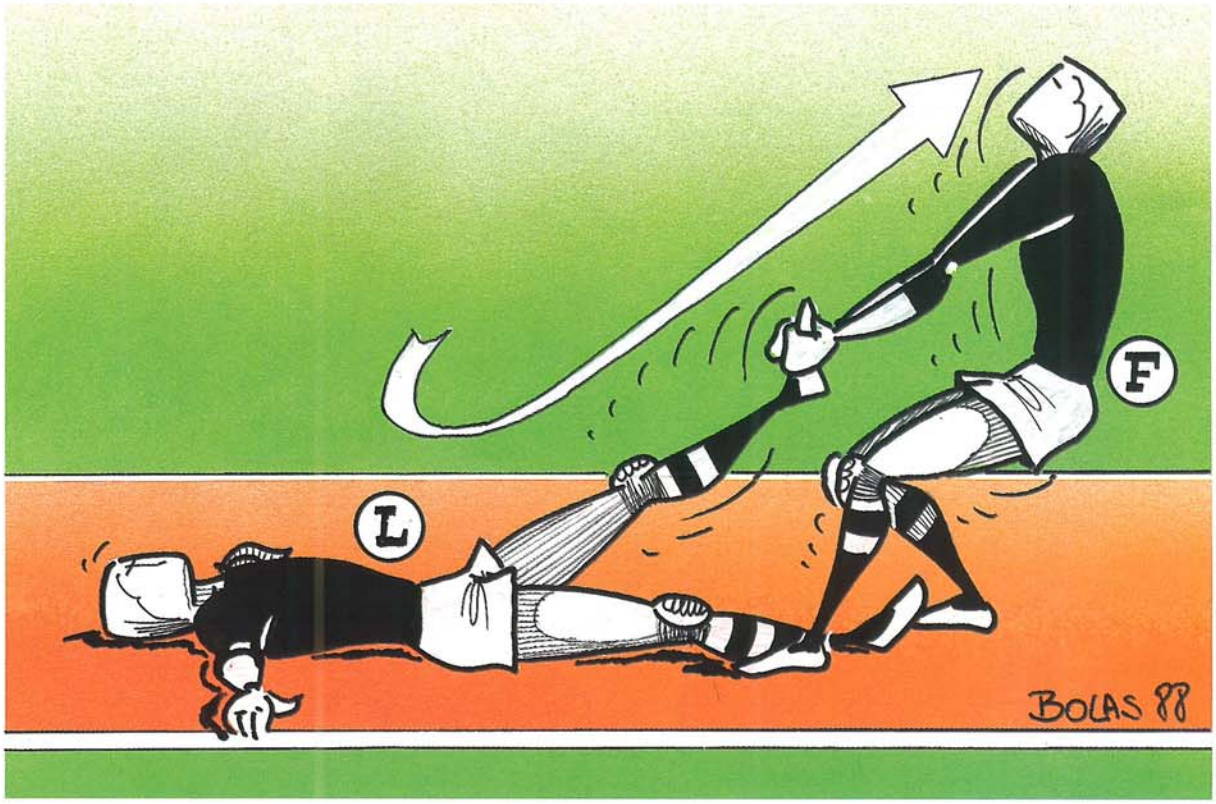


Fig. 21-52

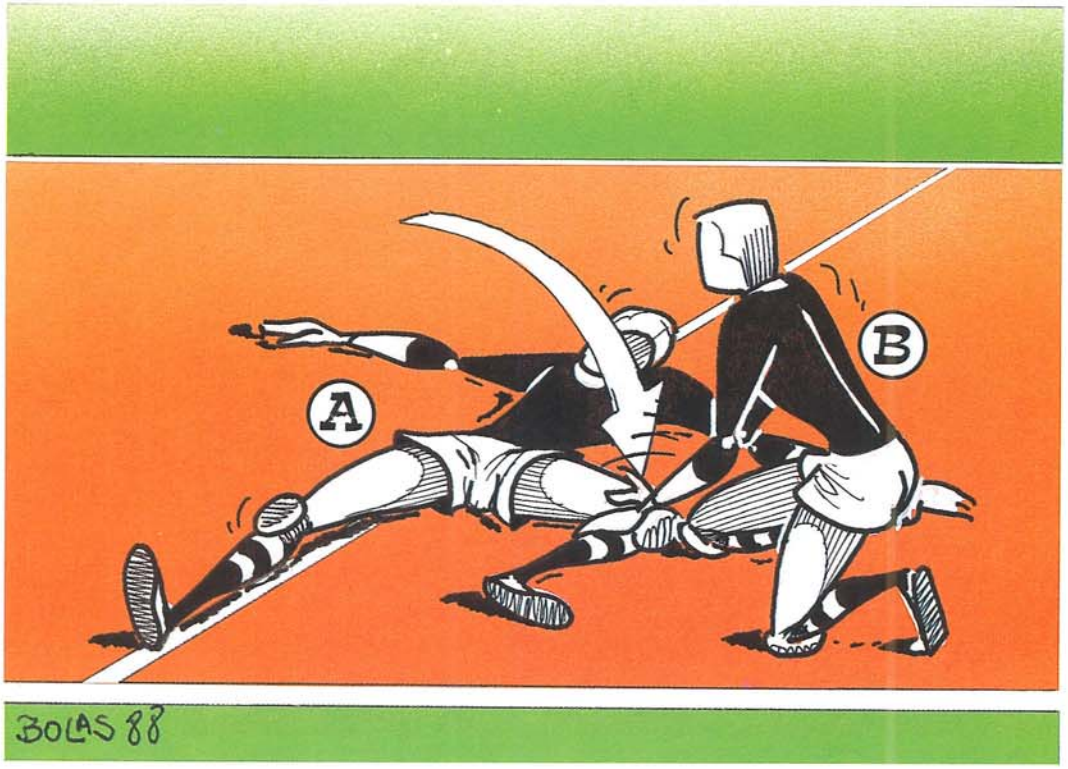


Fig. 21-53

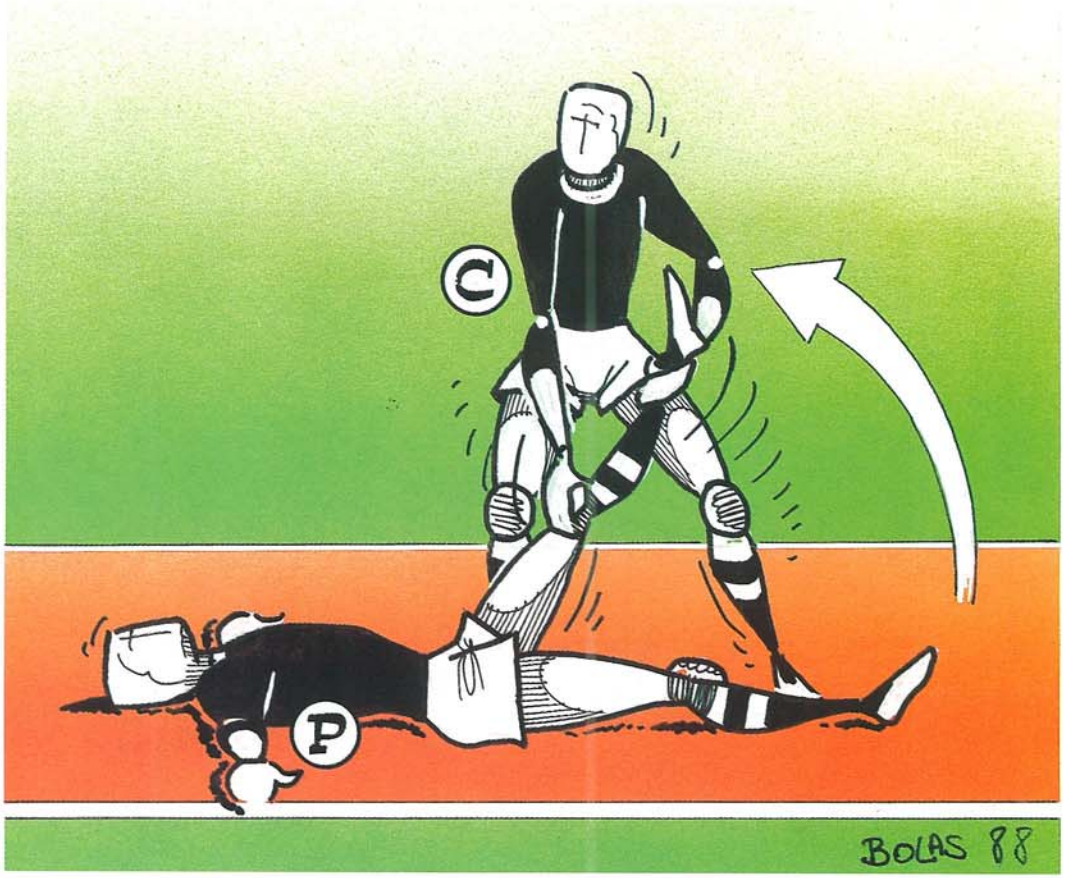


Fig. 21-54

c. Sports Massages for Volleyball Players

Order of Sports Massages

Soft Stroke Methods
Hard Stroke Methods
Pushing Methods by Palm or Finger
Rubbing Methods or Swing Methods
Soft Hitting Methods or Compressing Methods

Back Muscles

Open hand. Stroke lightly from waist to back.
(Fig. 21-55)

Fig. 21-55

Back of Thigh

Stroke lightly from back of knee
to hip with light stroke method.
(Fig. 21-56)

Fig. 21-56

Inside and Front of Thigh

Open thumb and second finger.
Stroke from knee upward
(Fig. 21-57)

Fig. 21-57

Lower Legs (forward)

Open thumb and second finger.
Rub upward in circular motion.
(Fig. 21-58)

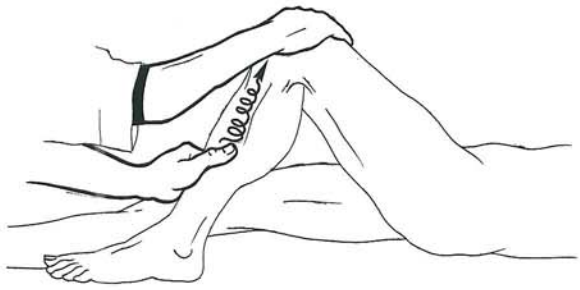


Fig. 21-58

Lower Legs (backwards)

Push and rub from achilles tendon
to back of knee
(Fig. 21-59)

Fig. 21-59

Hip

Open hand and swing hip left and right.
(Fig. 21-60)

Fig. 21-60

Neck and Shoulder

Push sides of neck with both thumbs.
Then push and rub the neck using thumb
and second finger. Then move to shoulders.
Some times light tapping will be effective
on this part.
(Fig. 21-61)

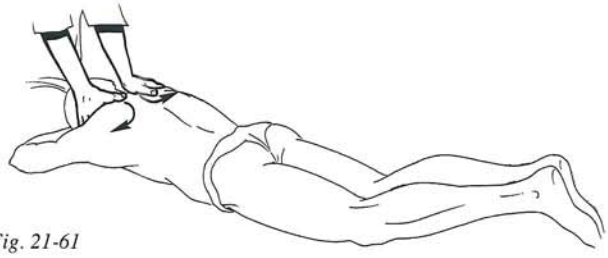


Fig. 21-61

Achilles Tendon

Firmly stroke achilles tendon from heel upwards with both thumbs.
(Fig. 21-62)

Fig. 21-62

Upper Arms

Lightly stroke from elbow to shoulder, then try rubbing.
(Fig. 21-63)

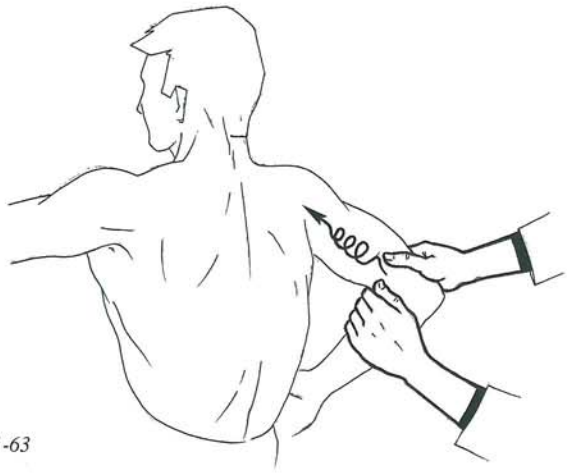


Fig. 21-63

d. Vital Points for Massages

We should know the special vital areas of massage when we discover fatigue or symptoms shown in the table.

Effective Vital areas according to symptoms.

Total Body Fatigue
1, 7, 15, 16, 17, 19, 20, 22, 23, 26, 27, 31, 33, 34, 38, 39, 40, 42, 43, 45, 46, 47, 55, 65, 67, 70, 71.

Head Ache
1, 2, 3, 4, 7, 8, 43, 48, 55, 65, 71.

Neck, Shoulder and Arm Fatigue
5, 7, 8, 10, 11, 12, 13, 22, 23, 27, 33, 35, 38, 39, 40, 42, 44, 49, 51, 55, 70, 72.

Waist Fatigue or Ache in Waist
7, 20, 21, 22, 23, 24, 25, 34, 35, 63, 71.

Insomnia (Sleepless Symptom)
1, 5, 7, 8, 17, 23, 30, 35, 36, 43, 48, 55, 64, 65, 71, 72.

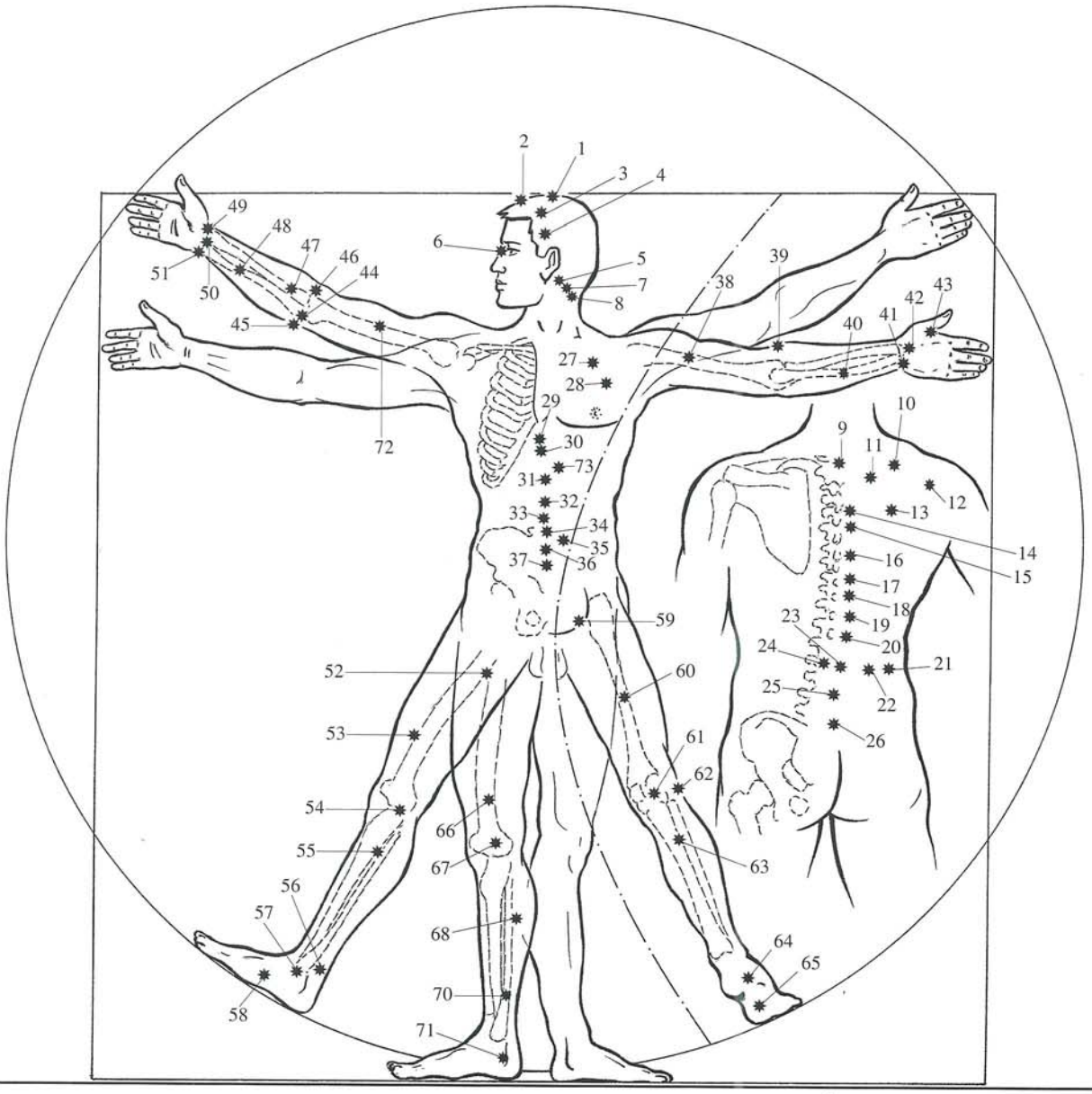
Fatigue and Ache of Each Joint
7, 15, 19, 22, 23, 25, 30, 31, 34, 35, 36, 37, 53, 55, 70, 72.

Stomach Ache
7, 17, 19, 22, 23, 25, 30, 31, 34, 35, 36, 37, 53, 55, 70, 72.

Stomach Problems
7, 13, 16, 18, 23, 29, 30, 31, 32, 34, 53, 55, 70, 72.

Fatigue in Eyes and Head
1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 23, 43, 65.

Anemia
7, 16, 17, 23, 24, 31, 34, 37, 55, 65, 70, 73.



References

1. Toyoda, H., Saito, M., "Physical Training for Volleyball" (English), pp. 6.1-6.5, FIVB Coaches' Manual, Canadian Volleyball Association, 1974.

2. Toyoda, H., Saito, M., Volleyball Physical Training, (Japanese), pp 25-56, Taishukan Book Co., 1972.

3. Saito, M., Power up Training, (Japanese), pp. 10-14, 102-110, Nihon Bunka Publishing Co., 1983.

4. Toyoda, H., Modern Volleyball Physical Training, (Japanese), pp. 397-512, Taishukan Book Co., 1968

5. Shimazu, D., Warming up and Physical Training for Volleyball Players, (Japanese), pp. 344-380, Taishukan Book Co., 1977.