

# *Úrazová prevencia a preventívne opatrenia vo futbale*

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# **F-MARC** Football Medicine Manual



Svetová zdravotnícka organizácie WHO označuje zdravie ako optimálny stav duševnej, telesnej a sociálnej pohody.

## Koncepcia F-MARC projektu prevencie Football Medicine Manual

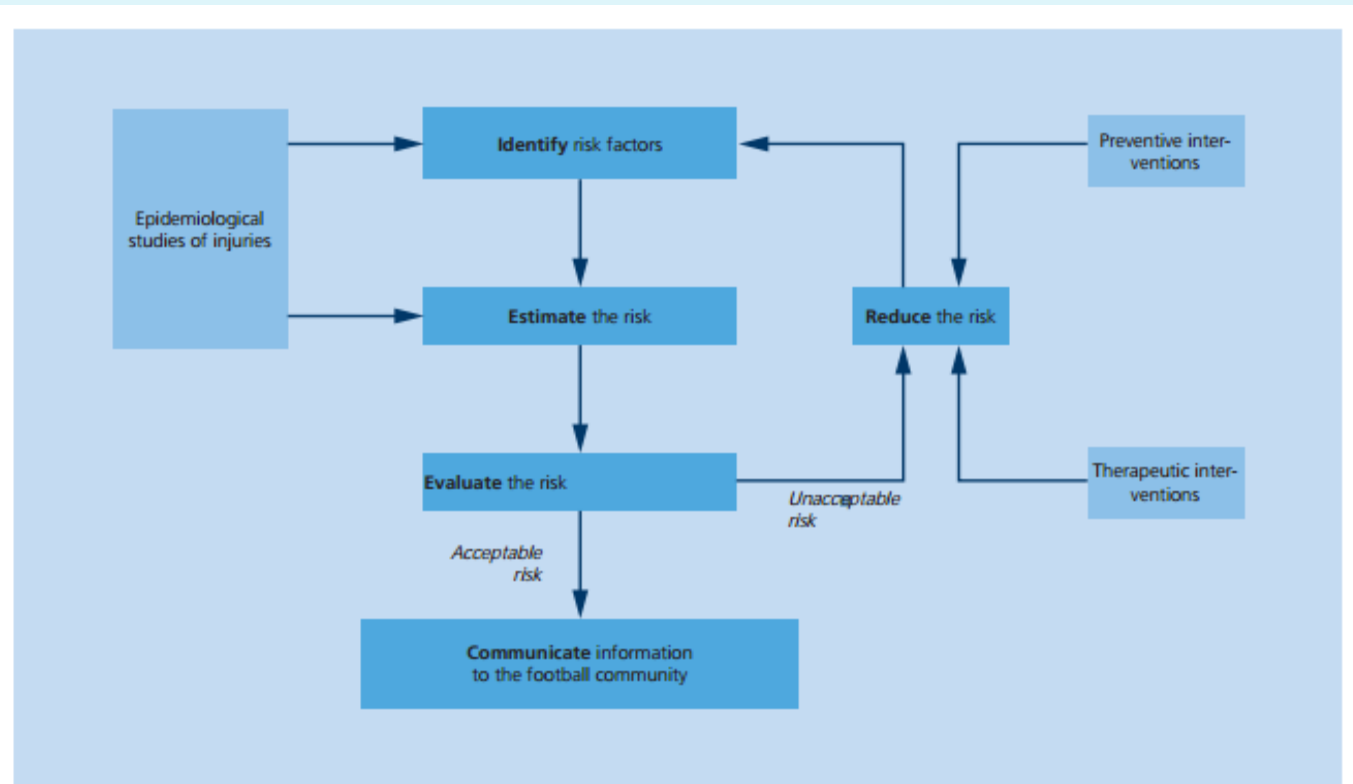


Figure 1.1.1 Framework for managing the risk of injury in football

# Koncepcia rizikového managementu

*Rizikové faktory*

*Odhadnutie rizika*

*Vyhodnotenie rizika*

*Osveta a vzdelávanie o rizikách*

*Znižovanie rizika*

*Komunikácia o rizikách*

# *Úloha futbalového lekára v systéme*

Úrazová diagnostika

Diagnostika choroby

Prevencia úrazov a chorôb

Zaistenie prvej pomoci

Antidopingová kontrola

Aklimatizácia mužstva v cudzom prostredí

Príprava optimálnych podmienok na podanie výkonu  
(strava, hydratácia, sledovať úroveň trénovanosti s ohľadom  
na pretrénovanie)

Poradenstvo pre mužstvo a podporný tím

# ***Najdôležitejšia úloha lekára v systéme preventívnej starostlivosti***

## **1. Anamnéza**

Lekár by mal byť informovaný o úrazovej anamnéze za posledné 4 týždne

**Hráčska anamnéza:** brankár ,útočník

Dominantná noha

Počet zápasov za posledný 1 rok

**Lekárska anamnéza**

Reumatické problémy

Alergie

Chrípkové ochorenia

**Lieky za posledných 12 mesiacov**

Analgetiká

Antirheumatiká

Antidiabetiká

# Dotazník reprezentanta

## Športový dotazník reprezentanta

Meno a priezvisko: ..... Dátum  
narodenia:.....  
Bydlisko:..... Športový  
klub.....  
Telefón:.....  
Ošetrojúci lekár v klube .....  
Kontakt na ošetrojúceho lekára .....

Športová anamnéza (koľko rokov profesionálne hráš futbal )  
: ..... rokov

Zaradenie v mužstve (obranca, záložník, útočník, brankár):

Alergia (lieky potraviny peľ alebo prach):

Prekonané ochorenia:(osýpky ,šarlach, reumatická horúčka,  
hnisavá angína, žltáčka, zápal pľúc alebo obličiek a iné):

Antibiotika v poslednom roku? Áno (kedy,  
prečo?).....

Užívam či nie nejaké lieky (na liečbu alergie, depresie, astmy,  
nespavosti, atď).

Športové úrazy (rok) :  
Zlomeniny (dátum):

Operácie( koleno plastika, chrbtica, po zlomenine, slepé črevo):

Potravinové doplnky (multivitamíny, proteíny, kĺbová výživa, iontové nápoje):

Dochádzam pravidelne na rehabilitáciu alebo k fyzioterapeutovi ? (ak áno z akého dôvodu)

Ochorenia pohybového systému : skolióza -- ploché nohy  
– guľatý chrbát – zlé držanie tela,  
iné.....



# Dotazník na zníženie rizika náhlej smrti

/Dotazník podľa Lausannského odporúčenia pre športovca/

Odpovedajte prosím ANO/NE

A/N

- Skolaboval ste niekedy behom cvičenia?
- Mal ste niekedy pocit zvierania na hrudi behom cvičenia
- Vyvolal Vám niekedy beh zvieranie na hrudi?
- Mal ste niekedy pocit zvierania na hrudi, pískanie alebo kašeľ, ktorý by zhoršoval Váš výkon?
- Liečil ste sa niekedy na astmu?
- Mal ste niekedy kŕče?
- Bolo Vám niekedy povedané že máte epilepsiu?
- Doporučil Vám niekedy niekto ,aby ste zo zdravotných dôvodov zanechal šport?
- Bolo Vám niekedy niekým povedané že máte vysoký krvný tlak?
- Bolo Vám niekedy niekým povedané že máte že máte vysoký obsah cholesterolu v krvi?
- Máte obtiaže s dýchaním alebo záchvaty kašľa počas alebo po športovej činnosti?
- Mal ste niekedy dýchavičnosť počas alebo po športe.

# Ortopedické vyšetrenia

## Examination of the spine

### Spinal form

The player stands with the back towards the physician. The physician identifies the spinal process of the seventh cervical vertebra and palpates the spinal process of the thoracic and lumbar spine with the index finger. Visual and palpated deviations from normal are identified as related to the curvature of the spine (thoracic kyphosis, lumbar hyperlordosis, flat back in the region of thoracic and/or lumbar spine scoliosis).



CT palpation



Thoracic palpation



Examination of pelvic level



Example of leg length difference



Lumbar palpation



Example of flat thoracolumbar spine



### Pelvic level

The player stands in an upright position with his feet parallel and as close together as possible. From behind, the physician places both hands on the pelvic crest. If there is any difference between the levels of the two sides of the pelvic crest, boards are placed under one foot so that the levels are equalised and the difference can be determined.

### Sacroiliac joint

The player lies in a supine position on an examination table with both legs extended. The physician palpates the inferior borders of both medial malleoli, and assesses the symmetry of their position. The player is then asked to sit up, keeping his legs extended on an examination table. During the movement, the physician keeps his thumbs on the bony landmarks and assesses again the symmetry of the malleoli. A change in the position of the malleoli towards each other (from supine to long sit) is an indication of a sacroiliac joint dysfunction (hypo-mobility or blockage).



Sacroiliac joint flexion

### Cervical spine range of motion

The player sits in an upright position. The physician stands behind the player. The physician fixes the left shoulder with one hand and with the other hand he rotates the cervical spine to the right, exploring the full range of motion. The range of motion is normal when 90° is measured. If rotation is below 90° then rotation out of flexion is to be performed or further assessment of the cervical spine is needed. The examination is repeated for the left side accordingly.



Cervical spine range of motion



Cervical spine range of motion



#### Spinal flexion (stand and reach test)

The player stands with his feet as close together as possible and his knees extended. He bends forward as far as possible, keeping his legs straight. He has to remain in this bent position for approximately five seconds, before the physician measures the distance between fingertip and floor in centimetres.



Good flexibility of lumbar spine and hip muscles



Hypomobility (normally 0-10 cm distance)

#### Examination of the upper extremity

The following four global active tests represent a quick functional screening to detect potential asymmetries and limitations in the movements of the upper extremity, and to note any symptoms which may require further investigations.

##### Active elevation

The player sits in an upright position on the edge of the examination table. He is asked to fully elevate both arms above his head with extended elbows and the hands in a thumbs-up position to the maximum position. A normal range of motion is about 180°.



Active elevation of the shoulders and arms

##### Active external rotation

The player sits in an upright position on the edge of the examination table. He is asked to flex his elbows and to grasp both hands behind his neck. He should then move back both elbows ("opening position") as far as he can, followed by the opposite movement ("closing movement").



##### Active internal rotation

The player sits in an upright position on the edge of the examination table and is asked to flex his elbows and to bring both hands behind his body. The back of the hands should point to the spine, and the player should attempt to position both thumbs as high as he can.



Active internal rotation

##### Active "compression"

The player sits in an upright position on the edge of the examination table and is asked to flex his right elbow and to bring his right hand to his left shoulder. He should then repeat the movement with his left arm. In this position, the shoulder joint and its capsular structures are compressed and stressed.



Active compression

## Spine

Spine form	<input type="checkbox"/> normal	<input type="checkbox"/> flat	
		<input type="checkbox"/> hyperkyphosis	
		<input type="checkbox"/> hyperlordosis	
		<input type="checkbox"/> scoliosis	
Pelvis level	<input type="checkbox"/> even	_____ cm lower	<input type="checkbox"/> right <input type="checkbox"/> left
Spinal flexion			
Distance fingertips to floor		_____ cm	
Sacroiliac joint	<input type="checkbox"/> normal	<input type="checkbox"/> abnormal	
Cervical rotation			
right	<input type="checkbox"/> normal	<input type="checkbox"/> 80° - 60°	<input type="checkbox"/> < 60°
		<input type="checkbox"/> painful	<input type="checkbox"/> no <input type="checkbox"/> yes
left	<input type="checkbox"/> normal	<input type="checkbox"/> 80° - 60°	<input type="checkbox"/> < 60°
		<input type="checkbox"/> painful	<input type="checkbox"/> no <input type="checkbox"/> yes

## Upper extremity

Active elevation		
right	<input type="checkbox"/> normal	<input type="checkbox"/> abnormal, please specify: _____
left	<input type="checkbox"/> normal	<input type="checkbox"/> abnormal, please specify: _____
Active external rotation		
right	<input type="checkbox"/> normal	<input type="checkbox"/> abnormal, please specify: _____
left	<input type="checkbox"/> normal	<input type="checkbox"/> abnormal, please specify: _____
Active internal rotation		
right	<input type="checkbox"/> normal	<input type="checkbox"/> abnormal, please specify: _____
left	<input type="checkbox"/> normal	<input type="checkbox"/> abnormal, please specify: _____
Active "compression"		
right	<input type="checkbox"/> normal	<input type="checkbox"/> abnormal, please specify: _____
left	<input type="checkbox"/> normal	<input type="checkbox"/> abnormal, please specify: _____

## Examination of the hip, groin and thigh

### Hip flexion

The player lies in a supine position on the examination table. The player is then asked to flex and elevate his left knee towards his chin. First the active flexion and then the passive flexion are measured. Hip flexion measurements usually range between 90° (active) and 130-140° (passive). The examination is then repeated for the right leg.



Active hip flexion



Passive hip flexion

### Hip extension

The player lies in a prone position on the examination table. He is then asked to elevate his right leg with a straight knee. The range of motion of the hip extension is recorded. The active range should be between 10 and 40°; passive motion should add approximately 10°. The examination is then repeated for the left leg.



Active hip extension



Passive hip extension



## 2, Kardiologické vyšetrenia



# Prevenca úrazov

## 1.Registrácia úrazov



### Injury report form

(Team) Player-ID:

Date:

#### 1. Injured body part

- ☐ head / face
- ☐ neck / cervical spine
- ☐ thoracic spine
- ☐ lumbar spine
- ☐ sternum / ribs
- ☐ abdomen
- ☐ pelvis / sacrum

- ☐ shoulder
- ☐ upper arm
- ☐ elbow
- ☐ lower arm
- ☐ wrist
- ☐ hand
- ☐ finger / thumb

*right*

- ☐
- ☐
- ☐
- ☐
- ☐
- ☐
- ☐
- ☐
- ☐
- ☐
- ☐
- ☐
- ☐

*left*

- ☐ hip
- ☐ groin
- ☐ m. adductor
- ☐ hamstrings
- ☐ m. quadriceps
- ☐ m. abductor
- ☐ thigh
- ☐ knee
- ☐ lower leg
- ☐ achilles tendon
- ☐ ankle
- ☐ foot
- ☐ toe

#### 2. Type of injury

- ☐ concussion with loss of consciousness
- ☐ concussion without loss of consciousness
- ☐ fracture
- ☐ dislocation
- ☐ rupture of muscle

- ☐ rupture of tendon
- ☐ ligamentous rupture with instability
- ☐ ligamentous rupture without instability
- ☐ lesion of meniscus
- ☐ sprain

- ☐ strain
- ☐ contusion
- ☐ tendonitis / bursitis
- ☐ dental injury
- ☐ deep wound
- ☐ laceration / abrasion
- ☐ others

3. Diagnosis: \_\_\_\_\_

4. Has the player had a **previous injury** of the same location and type?

- ☐ no
- ☐ yes, \_\_\_\_\_ months ago

5. Was the injury caused by **overuse** or **trauma**?

- ☐ overuse
- ☐ trauma

6. **When** did the injury occur?

- ☐ training
- ☐ match

Date \_\_\_\_\_

7. Was the injury caused by **contact with another player**?

- ☐ no
- ☐ yes

8. Approximately **how long** will the player not be able to participate as usual in the training sessions or matches?

Approx. \_\_\_\_\_ days

## 2, Frekvencia a charakteristika úrazov



### Injury report form for matches

Team \_\_\_\_\_ Match \_\_\_\_\_ / \_\_\_\_\_ Date \_\_\_\_/\_\_\_\_/\_\_\_\_

Team physician \_\_\_\_\_ Tel/Fax \_\_\_\_\_ e-mail \_\_\_\_\_

Please report: **All injuries** (traumatic and overuse) caused by football **regardless** of the consequences with respect to participation during training or match.  
The information provided is for medical and research purposes and will be treated confidentially.

Player No.	Time minute of match	Location		Diagnosis		Severity absence in days	Circumstances		Consequences	
		injured body part	code	type of injury	code		contact	foul	referee's sanction	treatment
							yes <input type="checkbox"/> no <input type="checkbox"/>	yes <input type="checkbox"/> no <input type="checkbox"/>	yes <input type="checkbox"/> no <input type="checkbox"/>	yes <input type="checkbox"/> no <input type="checkbox"/>
							yes <input type="checkbox"/> no <input type="checkbox"/>	yes <input type="checkbox"/> no <input type="checkbox"/>	yes <input type="checkbox"/> no <input type="checkbox"/>	yes <input type="checkbox"/> no <input type="checkbox"/>
							yes <input type="checkbox"/> no <input type="checkbox"/>	yes <input type="checkbox"/> no <input type="checkbox"/>	yes <input type="checkbox"/> no <input type="checkbox"/>	yes <input type="checkbox"/> no <input type="checkbox"/>
							yes <input type="checkbox"/> no <input type="checkbox"/>	yes <input type="checkbox"/> no <input type="checkbox"/>	yes <input type="checkbox"/> no <input type="checkbox"/>	yes <input type="checkbox"/> no <input type="checkbox"/>
							yes <input type="checkbox"/> no <input type="checkbox"/>	yes <input type="checkbox"/> no <input type="checkbox"/>	yes <input type="checkbox"/> no <input type="checkbox"/>	yes <input type="checkbox"/> no <input type="checkbox"/>
							yes <input type="checkbox"/> no <input type="checkbox"/>	yes <input type="checkbox"/> no <input type="checkbox"/>	yes <input type="checkbox"/> no <input type="checkbox"/>	yes <input type="checkbox"/> no <input type="checkbox"/>
							yes <input type="checkbox"/> no <input type="checkbox"/>	yes <input type="checkbox"/> no <input type="checkbox"/>	yes <input type="checkbox"/> no <input type="checkbox"/>	yes <input type="checkbox"/> no <input type="checkbox"/>
							yes <input type="checkbox"/> no <input type="checkbox"/>	yes <input type="checkbox"/> no <input type="checkbox"/>	yes <input type="checkbox"/> no <input type="checkbox"/>	yes <input type="checkbox"/> no <input type="checkbox"/>
							yes <input type="checkbox"/> no <input type="checkbox"/>	yes <input type="checkbox"/> no <input type="checkbox"/>	yes <input type="checkbox"/> no <input type="checkbox"/>	yes <input type="checkbox"/> no <input type="checkbox"/>

☐ no injuries in this team

## Definitions and codes

Location of injury					
	TRUNK		UPPER EXTREMITY		LOWER EXTREMITY
1	Head / Face	11	Shoulder	21	Hip
2	Neck / Cervical spine	12	Upper Arm	22	Groin
3	Thoracic spine	13	Elbow	23	Thigh
4	Lumbar spine	14	Forearm	24	Knee
5	Sternum / Ribs	15	Wrist	25	Lower leg
6	Abdominal	16	Hand	26	Achilles tendon
7	Pelvis / Sacrum	17	Finger	27	Ankle
		18	Thumb	28	Foot
				29	Toe

Diagnosis					
1	Concussion with loss of consciousness	7	Ligamentous rupture with instability	13	Bursitis
2	Concussion without loss of consciousness	8	Ligamentous rupture without instability	14	Tendinitis
3	Fracture	9	Lesion of meniscus	15	Laceration / Abrasion
4	Dislocation	10	Sprain	15	Others
5	Muscle fibre rupture	11	Strain		
6	Tendon rupture	12	Contusion		

Severity of injury in days				Circumstances and consequences	
Estimated duration of absence from training or play for example:				Contact	with another player or an object (except ground)
0	= 0 days	7	= 1 week	Foul	judgement of the player, overt and hidden fouls
1	= 1 day	14	= 2 weeks	Referee's sanction	of the foul that caused the injury
2	= 2 days	> 30	= more than 4 weeks	Treatment	by a physician, physiotherapist or dentist (immediately or later)



### 3, Preventívny program

- A, core trening
- B, neuromuskulárny tréning
- C, plyometric a agility tréning
- D, F-Marc 11
- E, The 11 + (part I,II,III)
- F, prevencia poškodenia predného skríženého väzu
- G, prevencia členka
- H, prevencia hamstringov
- J, podporné prostriedky



## Core tréning

Cieľom je stabilizácia segmentov, ktoré sú zodpovedné za posilnenie stredu tela. Úprava hlbokého stabilizačného systému. Dôraz sa kladie na úpravu správneho držania tela a odstránenie dysbalancie .

Úlohou je stabilizácia spevnenie ťažiska tela v oblasti driekovej chrbtice

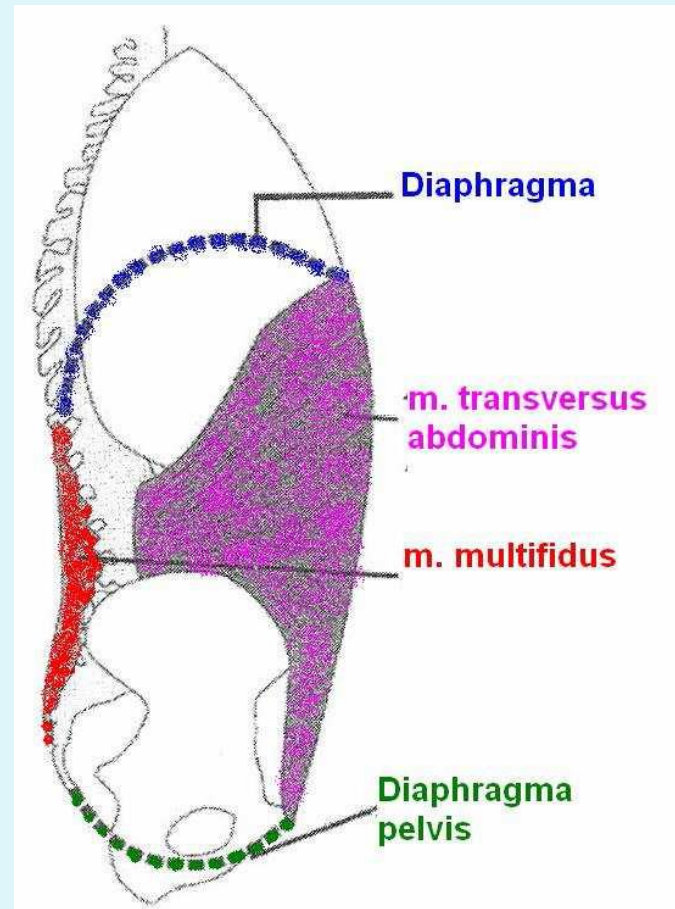


V driekovej oblasti má rozhodujúci význam súhra medzi:

1. extenzormi dolnej Th – L chrbtice, z ktorých podstatný význam majú

**mm. multifidi** (ich oslabenie vedie k recidivujúcej bolesti v L–S oblasti)

2. a flexormi, ktoré sú tvorené funkčnou súhrou – synergiou  
bránice,  
brušných svalov  
a svalov panvového dna.



Kineziologický vzor posturálnej stabilizácie chrbtice je integrovaný do všetkých našich pohybov. Najčastejším problémom je insuficiencia prednej stabilizácie chrbtice a naopak prevaha extenčnej aktivity povrchových svalov chrbtice.



## Plyometria

Povedzme si viac o plyometrii. *Je to tréningová metóda, ktorá sa používa spolu s ďalšími metódami rozvoja sily v kompletnom tréningovom programe, ktorého cieľom je zlepšiť vzťah medzi maximálnou a výbušnou silou. Úlohou plyometrie je zlepšenie nervovo-svalovej aktivity a rozvoj rýchlych svalových vlákien.*

Pre pochopenie plyometrického cvičenia si musíme povedať, aké druhy svalových pohybov existujú.

Rozlišujeme 3 základné typy napínania a sťahovania svalov:  
**Concentric** (koncentrický) – svaly sa skracujú, napr. zdvíhanie váhy  
**Isometric** (izometrickej) – svaly sú napnuté, ale nepohybujú sa, napríklad pri držaní jednej pozície  
**Eccentric** (excentrický) – svaly sa naťahujú, napríklad pri drepe



# Agility obratnost' – video

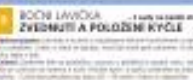


## F- Marc 11- the basic program





**ČAST 2**   **SILA**   **MRŠTNOST**   **ROVNOVAHA**   **10 MINUT**



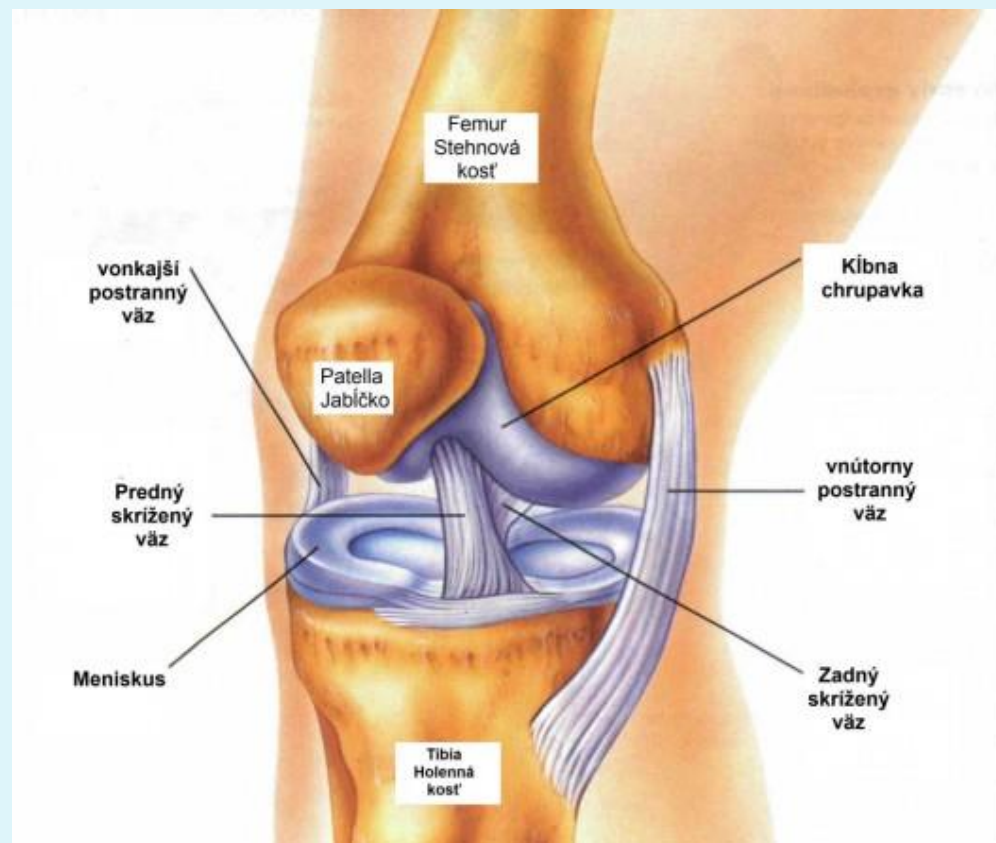
**ČASŤ 3 CVIČENÍ V BĚHU - 2 MINUTY**



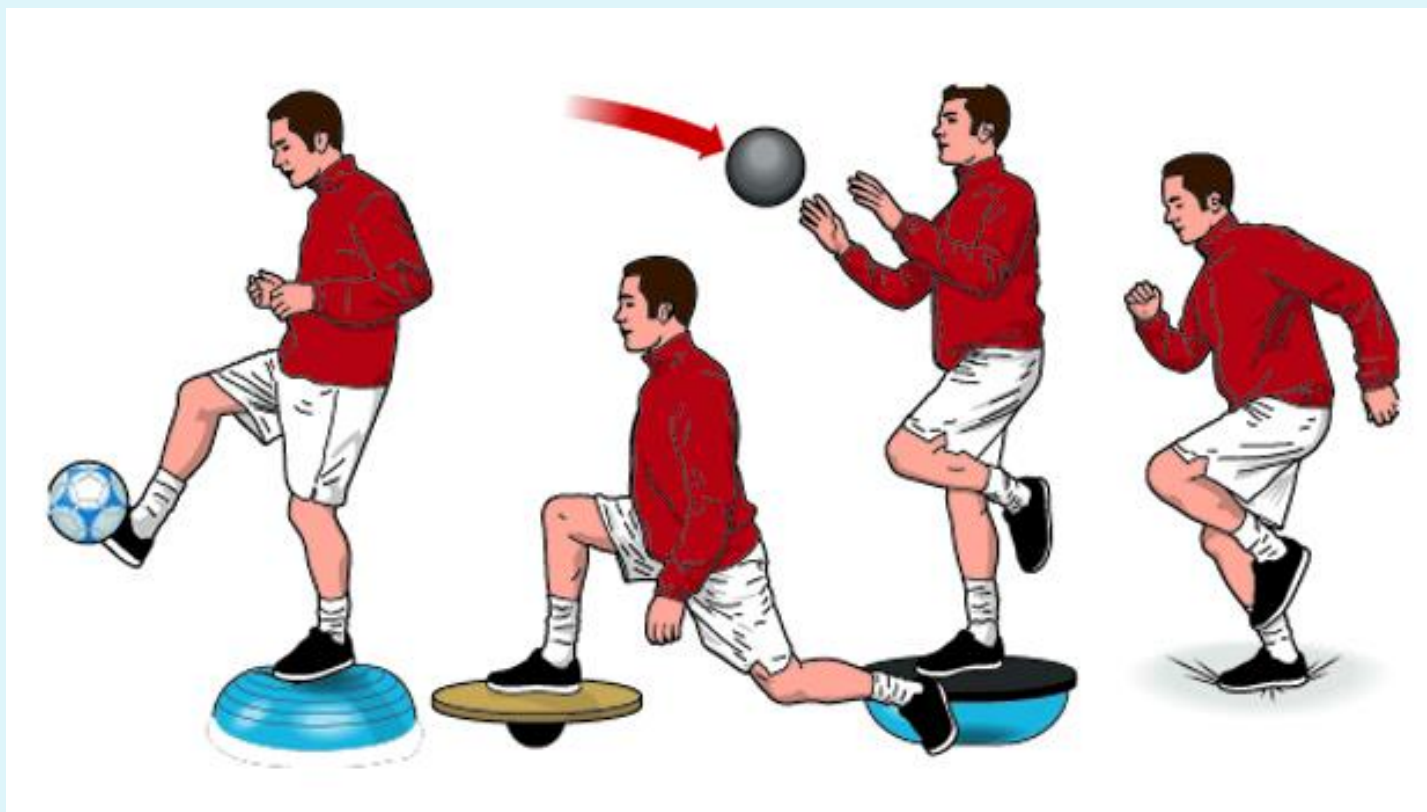


# Predný skrížený väz

- 1.zahriatie
- 2.posilovacie cvičenia
- 3.plyometria
- 4.agility
- 5.strečing
- 6.alternatívne cvičenia



## Prevencia členka – balančné cvičenia



# Prevenca hamstringov

- zahriatie
- pružnosť ohybnosť
- silový tréning



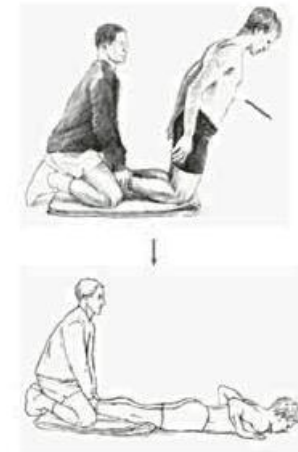
From Clinical Guide to Sports Injuries by Roald Bahr and Sverre Mørholm (Eds.), 2003, Champaign, IL: Human Kinetics. ©Lil-Ann Prois/Gazette bok/NIMF 2002; web: sportsinjuries.gazette.no

1) Warm-up



From Clinical Guide to Sports Injuries by Roald Bahr and Sverre Mørholm (Eds.), 2003, Champaign, IL: Human Kinetics. ©Lil-Ann Prois/Gazette bok/NIMF 2002; web: sportsinjuries.gazette.no

2) Flexibility



From Clinical Guide to Sports Injuries by Roald Bahr and Sverre Mørholm (Eds.), 2003, Champaign, IL: Human Kinetics. ©Lil-Ann Prois/Gazette bok/NIMF 2002; web: sportsinjuries.gazette.no

3) Strength

# Podporné prostriedky

Tape

Ortézy

Chrániče píšťaly

Chránič tváre

Vypchávky

Výbava brankára

