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Chase Goals, Not Injuries

How to Stay Injury-Free While Reaching Your Running Potential

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RUNNING INJURIES

- Nearly half of all runners report a running injury annually,
- Injuries are mostly caused by overtraining,
- Any running training should be tailored to the individual and his/her abilities



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- A running training programme should include appropriate preventive measures alongside methods to develop the athlete's abilities
- Running injuries are most likely to occur in:
 - novice runners
 - runners with previous injuries
 - runners who run more than 65 km per week
 - runners who accelerate too fast
 - women with reduced bone density (osteopenia, osteoporosis)



Common Running Injuries

- Runner's Knee, IT Band, Shin Splints
- Stress Fractures
- Achilles Tendinopathy, Plantar Fasciitis



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» FRONT KNEE PAIN«

- Pain near the kneecap, which worsens after prolonged sitting or when walking up or down
- One of the main causes is inappropriate sliding of the kneecap on the articular surface.



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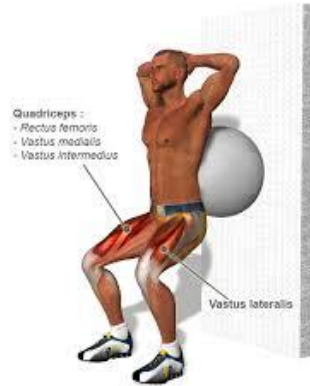


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»FRONT KNEE PAIN«

Preventive measures

- Exercises to strengthen the vastus medialis muscle



- Manual treatment of the muscles affecting the glide of the iliotibial tract



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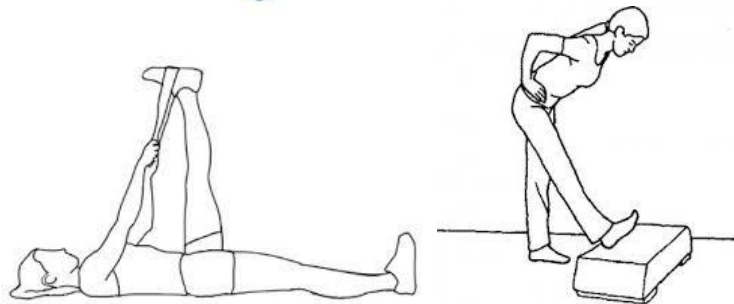


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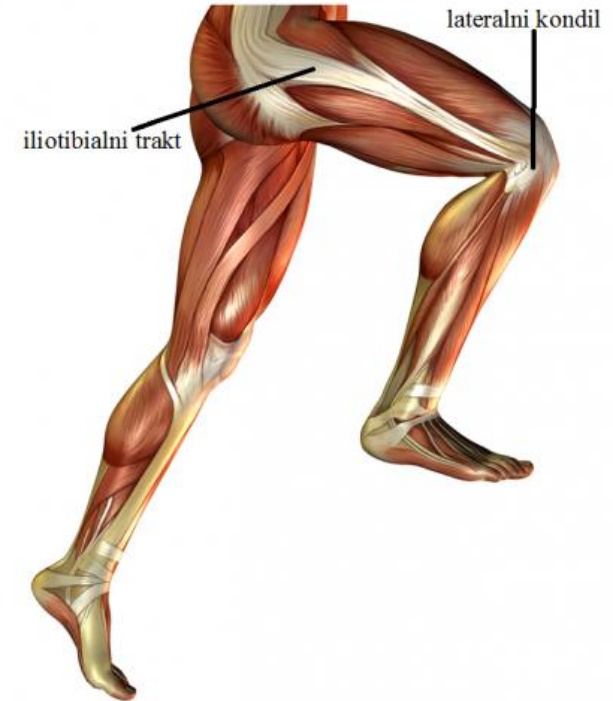
Preventive measures

- Raztezanje mišic zadnje lože stegna
- Stabilizacijske vaje za koleno in gleženj



ILIOTIBIAL BAND SYNDROME

- Pain on the outside of the knee, which may extend to the hip
- Caused by repetitive sliding of the iliotibial band
- Risk factors:
 - insufficient stretching of the iliotibial band
 - excessive pronation of the foot
 - running on a laterally inclined surface



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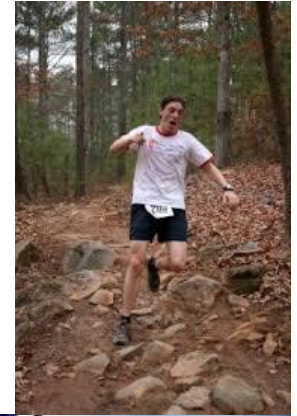


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ILIOTIBIAL BAND SYNDROME

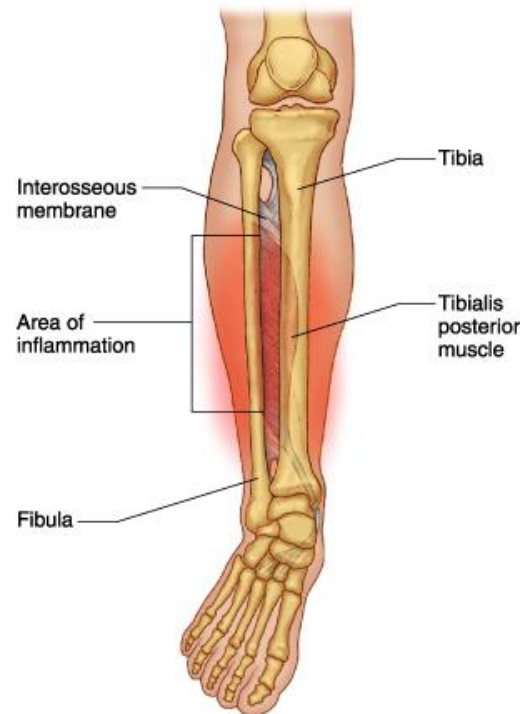
Preventive measures

- Stretching exercises
- Avoiding running on a sideways inclined surface



SHIN SPLINTS

- Pain occurs in the lower half of the shin and is usually most pronounced at the start of running
- The affected part is painful to touch
- The cause is most often inflammation of the attachment of the shin muscles to the interosseous membrane



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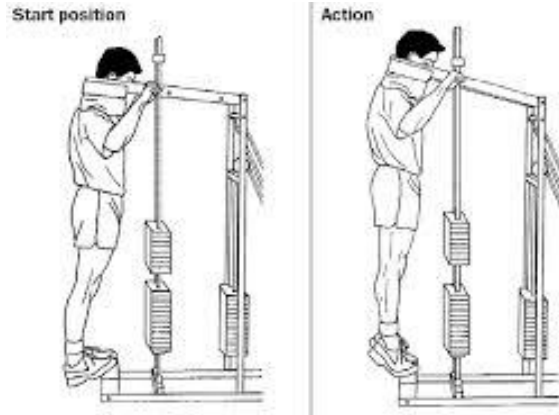
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SHIN SPLINTS

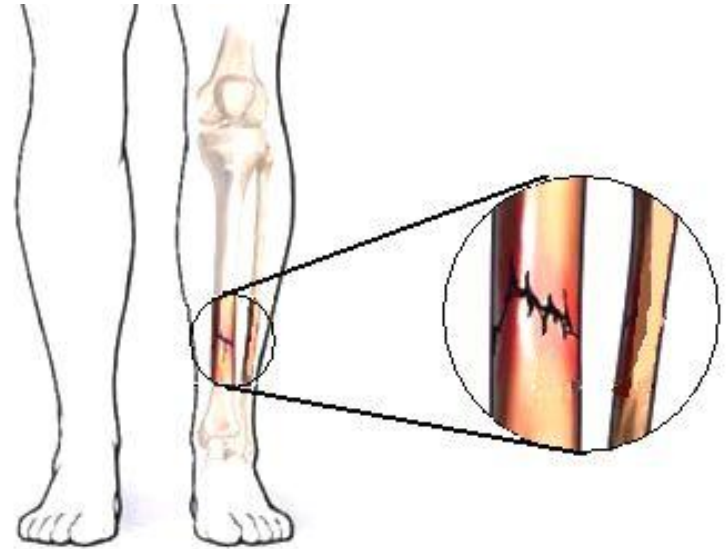
Preventive measures



- Consultation on the correct biomechanics of running
- Eccentric and strengthening exercises for the antagonistic muscles

STRESS FRACTURES

- A tiny crack in the bone, further stresses can lead to a complete fracture of the bone
- The result of an interrupted process of bone homeostasis and repair (remodelling)



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STRESS FRACTURES

Preventive measures

- Consultation on the correct biomechanics of running and choosing the right running shoes
- Stretching exercises and exercises to strengthen the muscles of the lower limbs



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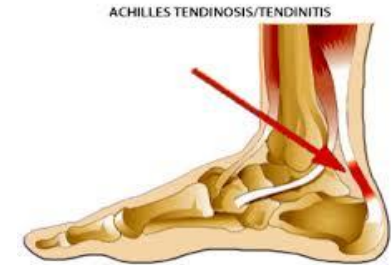
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ACHILLES TENDONITIS AND TENDINOPATHY

- Common injuries in jumping, landing and sprinting
- Tendinitis = acute inflammation of the Achilles tendon; tendinosis = chronic degenerative change of the Achilles tendon
- Pain about 2 cm above the insertion of the Achilles tendon on the calcaneus (can be along the entire tendon) when flexing the foot
- The tendon is sensitive to touch and may be thickened, nodular



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ACHILLES TENDONITIS AND TENDINOPATHY

Preventive measures

- Eccentric Achilles tendon exercises



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PLANTAR FASCIITIS

- Inflammation of the plantar fascia due to micro-ruptures
- Stinging pain on the inside of the heel, which may spread along the arch of the foot towards the toes
- The first steps in the morning are particularly painful, and the pain worsens during the day
- May lead to inflammation of the adjacent tissues (formation of a heel spur, calcination of the calcaneus)



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PLANTAR FASCIITIS

Preventive measures

- Running shoes with sufficient heel cushioning or point relief with hole insoles,
- Stretching exercises for the feet and the posterior tibial and thigh muscles,
- Strengthening exercises for the muscles of the foot,
- Check the shape of the arches of the feet and adjust footwear if necessary.



Plantar Fascia Stretch

Standing with ball of foot on stair, reach for bottom step with the heel until a stretch is felt along arch of foot.



RISK FACTORS FOR RUNNING INJURIES

INTERNAL

- Anatomy
- Gender
- BMI

EXTERNAL

- **Changes in training load**
- Equipment
- Nutrition
- Psychological factors



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CHANGES IN TRAINING LOAD

- The following are associated with a higher risk of injury:
 - running distance - 65 km/week or more
 - sudden change in running intensity (speed, difficulty of terrain)
 - irregular interval running
 - Stretching exercises do not have a significant impact on injury prevention, but they have a beneficial effect on reducing soft tissue pain and healing injuries



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CHANGES IN TRAINING LOAD

A warm-up consisting of dynamic running exercises has a largely positive effect on athletic performance



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RECOMMENDATIONS FOR PREVENTING RUNNING INJURIES

- Gradual start of running and in combination with walking (as the running progresses, the walking time should decrease and the running time should increase)
- The first running experience should last no longer than 20 minutes per day and the total daily running time should not increase by more than five minutes for the first fortnight
- It is recommended that beginners run every other day
- Limit the distance covered to 65 km per week
- Distances greater than 20 km should be run once a fortnight



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RECOMMENDATIONS FOR PREVENTING RUNNING INJURIES

- It is recommended to run 4 to 5 times a week with one rest day and one day dedicated to other sporting activities
- Marathon participation should be limited to 2 to 3 times a year
- Training should be preceded by dynamic isotonic exercise or light jogging
- Stretching should be done after the running workout
- Runners should build strength and flexibility through other techniques/activities, such as yoga and pilates.



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RECOMMENDATIONS FOR PREVENTING RUNNING INJURIES

- Good aerobic fitness before stepping up the pace
- Stepping up the pace is less risky if runners start with a "Fartlek" approach of 20 to 30 per cent of their normal running time for at least a month before progressing to interval training
- Avoiding fast downhill runs is advisable
- Most runners should limit the total distance of interval or repetitive speed training to 5 km or less



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RECOMMENDATIONS FOR PREVENTING RUNNING INJURIES

- Choice of running shoes should be based on comfort and appropriate foot shape
- **Barefoot running or running with minimalist footwear** should only be performed on soft surfaces (increased number of metatarsal fractures!)
- Additional strengthening exercises for the anterior thigh muscles, hip flexors and abductors and calf muscles are recommended.



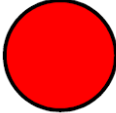
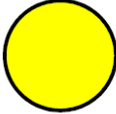
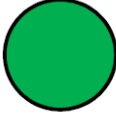
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LAST – BUT NOT LEAST: WHEN TO STOP RUNNING?

	Full loading not possible, limping Swelling Limited mobility Reduced power VAS > 3-4
	Full loading possible, limping present Mild swelling Mobility limited in extremities Decreased power VAS < 3-4
	Full loading without limping Full mobility No swelling VAS < 1-2 Power > 80% healthy legs



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THANK YOU FOR YOUR ATTENTION!



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