



PÉCSI TUDOMÁNYEGYETEM  
ÁLTALÁNOS ORVOSTUDOMÁNYI KAR

# A modern approach to warm up

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13/02/2025 Pécs



# Warming up in general

- To prepare the organs and organ systems for training and competition, so that they can function more efficiently in a more coordinated and higher level.
- The level of presentation of technical and tactical elements is increased.
- The aim of the preparation phase is to improve the actual performance of the competitor according to the needs of the sport.
- It can be general (functional) or specific (sport-specific) both in nature and in purpose.

# The aim of the warm-up is both physiological and psychological:

- increases muscle temperature - results in more efficient enzyme activity in the muscles,
- Increases muscle blood flow - ensures that the necessary nutrients are delivered to the appropriate place,
- stimulates the enzyme activity of various organs (liver, muscle),
- speeds up nervous system function - improved reaction time,
- increases joint range of motion and muscle elasticity,
- improves concentration and quality of movement,
- familiarisation with certain movement patterns and dynamic stereotypes



# What is the problem with bad techniques?

## Traditional technique structure:

- Circulation enhancement (running)
- gymnastic exercises
- static stretching

## Emerging issue:

- It ignores the connective tissue that permeates and surrounds the muscles
- In running, the cold and inelastic muscle bundle cannot follow the work of the muscles
- Static stretching relaxes the muscles, slows down the conduction of the neurons, resulting in a slowdown in muscle function for up to 2 hours, reducing effort by 5–30%, not sport specific
- Time consuming
- Does not consider preventive aspects



# Building a modern warm-up to avoid injuries

- prepare you for training, competition

It should be:

- time-saving,
- preventive,
- sport-specific,
- accessible,
- easy to learn,
- requires few and preferably portable tools



# How do warm up to avoid injuries?

- Muscle knots and fascia treatment
  - Use of SMR or MCT techniques
- Correction exercises (stability, mobility)
  - Addressing individual problems – assume measurements
- Gluteus activation
  - Awakening and activating the gluteus maximus, which is weakened due to postural problems and a sedentary lifestyle
- Dynamic stretching
  - Complex stretching and muscle toning exercises
- Sport specific exercises
  - Running school, dynamic footwork, according to sport-specific objectives



# SMR and MCT technique before warm-up

- MCT – Myofascial Compression Technique
  - self-massage with compression device
- SMR – Self Myofascial Release
  - instrumental self-massage (Foam Rolling)



## Objective:

- to prepare the muscular blood supply for movement
- remove waste products
- injury prevention, performance enhancement
- increase mobility, stability



# Correction exercises (stability, mobility) Addressing individual problems

- Increasing stability/mobility in the joint
- Selection based on test exercises (FMS)
- According to defined objectives
- Strengthening weak areas
- Stretching shortened muscles
- 2-4 exercises





# Stabilising exercises

- Reduce lower back pain
- Increase core stability
- Enable more efficient force transfer to the limbs
- Static support positions should be made dynamic as soon as possible
- Weight training can be built on stable core strength without injury



# Mobilising exercises

- Increasing the narrowed range of movement
- Reduction of posture problems
- Improving sports technique
- Dynamic warm-up
- Avoid static stretching
- Do not overstretch hypermobile joints!
- Stretching types:
  - Static
  - Dynamic
  - Ballistic (injury risk)
  - PNF-stretching
- Anderson method
- Effective protocol for static stretching :  
30 sec, 3 set, (5x/week)  
rest time: 2x longer



# Gluteus activation

- Postural defects and a sedentary lifestyle cause the glutes to be elongated and weak
- Difficult to activate when exerted
- Affects areas above and below the kinetic chain
- Weak gluteus = overstretched knee flexors + change in lumbar spine position (L4 and L5)
- Exercises with rubber bands, unstable equipment



# Dynamic stretching

## Complex stretching and muscle toning exercises

- Increasing muscle temperature
- Increased blood circulation, improved oxygen transport and oxygen uptake
- Increased range of motion, increased stability
- Improves coordination, balance and proprioception
- Works more joints simultaneously according to function
- Exercises in all directions of space, mostly progressive



# Dynamic stretching exercises

- Walking with high knees, heel pull
- Lunge walk with trunk turn, trunk bend backward
- Sumo squat
- Lunge to the side with a step forward, crossing legs
- Walk out into push-up
- Modified balanced stance



# Sport-specific exercises

- Traditional running school exercises (jog, heel lift, knee lift, eagle, side lunge, rhythm knee, canoe)
- Lunges forward, sideways, forward and sideways in pairs and single-legged
- Sport-specific exercises, according to the structure of the sport
- <https://www.youtube.com/shorts/NKhA3fmGTwQ>
- <https://www.youtube.com/shorts/1p9yXAI2T58>



# Functional Movement Screen (2006)



Deep Squat



Hurdle Step



In Line Lunge



Shoulder Mobility



Active Straight Leg Raise



Trunk Stability Push Up



Rotary Stability

Score	Criteria
0	Pain, regardless of performance
1	Unable to perform
2	Performed with compensation
3	Performed as directed

# References

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# Thank you for your attention!

Potecho: PTE432

20/02/2024 Pécs