

Lecture 6.

Theme (Тема): Flexibility and Stretching (Гибкость и растяжка)

Teaching Methods (Методы обучения):

Interactive lecture, guided stretching practice, demonstration of techniques, group analysis, and self-assessment activities. (Интерактивная лекция, практическое выполнение упражнений на растяжку, демонстрация техник, групповая работа и самооценка.)

Technical Teaching Tools (Технические средства обучения):

Multimedia presentations, instructional videos, yoga mats, elastic bands, stability balls, and interactive visual aids. (Мультимедийные презентации, обучающие видео, коврики для йоги, эспандеры, гимнастические мячи и интерактивные материалы.)

Learning Outcomes (Результаты обучения лекции):

After completing this lecture, students will be able to:

Define flexibility and explain its physiological and biomechanical basis.

Identify different types of flexibility and stretching techniques.

Understand the importance of flexibility in fitness and injury prevention.

Apply safe and effective stretching exercises for various muscle groups.

Design individualized flexibility training programs for different sports or physical activities.

Lecture Plan (План лекции):

- Definition and importance of flexibility.
- Physiological and biomechanical aspects of stretching.
- Types of flexibility: static, dynamic, active, and passive.
- Stretching methods: static, ballistic, dynamic, and PNF.
- Guidelines for safe and effective stretching.
- Flexibility assessment and program design.
- Summary and discussion.

1. Definition and Importance of Flexibility

Flexibility refers to the ability of a joint or series of joints to move through an unrestricted and pain-free range of motion. It is influenced by factors such as joint structure, muscle elasticity, tendon stiffness, and neural control. Flexibility plays a vital role in maintaining efficient movement patterns, improving posture, and reducing the risk of musculoskeletal injuries.

In physical fitness, flexibility complements strength and endurance by enabling greater efficiency and coordination of motion. For athletes, optimal flexibility contributes to improved performance, technique precision, and reduced likelihood

of strains or sprains. For non-athletes, flexibility supports everyday mobility and functional independence, especially in aging populations.

2. Physiological and Biomechanical Aspects

Stretching exercises enhance the extensibility of muscles, tendons, and ligaments. When a muscle is stretched, sensory receptors (muscle spindles and Golgi tendon organs) regulate tension and prevent overstretching. Proper stretching improves circulation, promotes nutrient exchange in tissues, and facilitates recovery after intense exercise.

Biomechanically, flexibility depends on joint type—ball-and-socket joints (like the hip and shoulder) allow wide motion, whereas hinge joints (like the elbow and knee) are more limited. Training flexibility helps maintain or restore the full range of motion and joint health.

3. Types of Flexibility

Flexibility can be classified into several categories:

Static Flexibility – The range of motion achieved without movement, such as bending forward to touch the toes and holding the position.

Dynamic Flexibility – The ability to perform controlled movements through the full range of motion, such as leg or arm swings.

Active Flexibility – Involves using one's own muscle strength to hold a stretch (e.g., lifting a leg and holding it in position).

Passive Flexibility – Achieved with external assistance, such as a partner or gravity, to deepen the stretch.

Balanced development of all types ensures both mobility and joint stability.

4. Stretching Techniques

Stretching techniques differ in purpose, execution, and physiological effects:

Static Stretching: Involves holding a position for 10–30 seconds to elongate muscles and improve overall flexibility. It is safe and recommended for cool-down sessions.

Dynamic Stretching: Uses smooth, controlled movements to increase range of motion and prepare muscles for activity. Suitable for warm-up before sports.

Ballistic Stretching: Employs bouncing or jerking movements to push beyond the normal range of motion. It is generally discouraged due to higher injury risk.

PNF (Proprioceptive Neuromuscular Facilitation): Combines contraction and relaxation of muscles to increase flexibility. Typically performed with a partner, PNF is effective for advanced flexibility enhancement.

5. Guidelines for Safe Stretching

To gain maximum benefit and avoid injury, stretching must follow basic safety principles:

Always perform stretching after a light warm-up to increase muscle temperature.

Stretch slowly; avoid bouncing or forcing movements.
 Maintain steady breathing and focus on relaxation.
 Target all major muscle groups, especially those used in training.
 Hold each stretch for 15–30 seconds and repeat 2–4 times.
 Incorporate flexibility training 2–3 times per week for lasting improvement.
 Consistency and proper technique are key to maintaining long-term flexibility gains.

6. Assessment and Program Design

Flexibility can be assessed using tests such as the sit-and-reach test for hamstrings and lower back mobility, or goniometry for measuring joint angles. A balanced flexibility program should include all major joints and alternate between static and dynamic methods. Programs can be adapted for rehabilitation, athletic performance, or general wellness.

7. Conclusion

Flexibility and stretching form the foundation for efficient movement, physical comfort, and injury prevention. A regular stretching routine enhances posture, reduces muscle tension, and promotes recovery after training. Integrating flexibility into every fitness plan ensures functional mobility and long-term musculoskeletal health.

Key Vocabulary & Expressions

Term	Translation	Definition
Flexibility	Гибкость	The ability of a joint to move through a full range of motion
Static stretching	Статическая растяжка	Holding a stretch position without movement
Dynamic stretching	Динамическая растяжка	Controlled, smooth movements through full range of motion
PNF stretching	ПНФ-растяжка	A stretching method combining contraction and relaxation
Elasticity	Эластичность	The ability of muscles or tendons to return to their normal length
Range of motion	Амплитуда движений	The extent of movement possible in a joint
Tendons	Сухожилия	Connective tissues attaching muscles to bones
Ligaments	Связки	Fibrous tissues connecting bones at joints
Warm-up	Разминка	Preparatory activity before stretching or

Term	Translation	Definition
		exercise
Mobility	Подвижность	The ability to move freely and efficiently

Discussion Questions

What are the main physiological benefits of flexibility training?

How does stretching reduce the risk of injury?

What are the differences between static, dynamic, and PNF stretching?

How should flexibility exercises be integrated into a weekly training plan?

Why is warming up essential before performing flexibility training?

References

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