

MINISTRY OF HEALTH OF UKRAINE

O.O. BOHOMOLETS NATIONAL MEDICAL UNIVERSITY

**PERIARTICULAR DISEASES OF SOFT TISSUES OF THE  
MUSCULOSKELETAL SYSTEM. CLASSIFICATION, CLINICAL  
PICTURE, DIAGNOSTICS, TREATMENT**

**WORK BOOK**

For independent work of students of 5<sup>th</sup> course

Study discipline "Traumatology and Orthopedics"

direction "Medicine"

specialty "Curative care"

Department of Traumatology and Orthopedics

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## Introduction

One of the effective means of organizing an independent work of students on topics of disciplines assigned for independent study is the work of a student with his/her workbook. Work with the workbook should begin with the acquaintance with the key issues on the topic. The next step includes the acquaintance with the list of sources from which the student can find the answers to the posed questions. For more deep study of the problem students can visit professional websites.

Having become acquainted with the theory, the student needs to assess his/her degree of mastering the material. In this regard, he/she resolves the proposed tasks; answers test questions on the topic. Students should pay particular attention in preparing for classes to the required minimum of practical skills to be mastered. In the relevant sections of textbooks, manuals, he must glean the information that he needs for mastering further practical skills.

Arrangement of independent work with the use of workbook is conducted as follows: tutor provides the workbook to a student in digital format (to be downloaded from website of the Department), or in printed version; later the students do the tasks at their extra-curricular time, whereupon the tutor checks and assesses them **at the initial stage of practical classes.**

### *Criteria for assessing the tasks in the workbook*

Each task requires a separate approach when assessing the quality of its implementation under particular criteria. And yet, with a 5-point evaluation ranking for each type of tasks, one should observe the general didactic criteria, namely:

“5” is graded when the student:

1. Executed the work w/o errors and deficiencies.
2. maximum one deficiency.

“4” is graded when the student executed the work in full but made:

1. maximum one gross error and one deficiency.
2. maximum two deficiencies.

“4” is graded when the student executed at least one half of a work correctly or made:

1. maximum two gross errors or one gross and one mild errors and one deficiency.
2. maximum two mild errors or one mild error and three deficiencies.
3. In the lack of errors but when four or five deficiencies are available.

“2” is graded when the student made:

1. number of errors (deficiencies) exceeding the limit when grade “3” could be applied.
2. In case less than half of work is completed.
3. Failed to start the work.

**Topic. " Periarticular diseases of soft tissues of the musculoskeletal system.  
Classification, clinical picture, diagnostics, treatment."**

**Goal (educational goal):**

1. The relevance of the problem of periarticular diseases of soft tissues of the musculoskeletal system in athletes, people of working age in practical outpatient activity of both orthopedists, traumatologists and family medicine doctors, rheumatologists, surgeons, therapists.
2. To establish the factors contributing to the development of periarticular diseases of soft tissue.
3. Analyze clinical, ultrasound, MRI data for patients with soft tissue disorders of the musculoskeletal system.
4. To substantiate the principles of prevention of cumulative development of these occupational diseases.
5. To substantiate the objectives and principles of conservative and operative treatment, depending on the nature of the periarticular diseases of soft tissues.

**The student should know:**

1. Anatomico-physiological features of the periarticular formations of soft tissues (tendons, ligaments, fasciae, aponeuroses, synovial bags).
2. to know what diseases are related to periarticular diseases: periartritis, tendovaginitis, tendonitis, bursitis, ligamentitis, fibrositis.
3. to know the etiopathogenesis of these diseases and their relation with professional activity and sports.
4. to know the clinical signs, main functional diagnostic provocative tests to establish the condition of soft tissues of the joints, basic ultrasound signs of these diseases.
5. to know the indications for conservative and surgical treatment.
6. rules for conducting local blockades, injecting drugs and know the mechanisms of their action, indications and contraindications for use. Alternative therapies

7. Methods of rehabilitation of patients

8. Measures to prevent occupational periarticular diseases of tissues in athletes, people of working age.

**A student must be able to:**

- To conduct an examination of an orthopedic patient
- To analyze a typical clinical picture of functional occupational overloads of soft tissues (tendons, ligaments, fascia, aponeuroses, synovial bags) in a patient.
- Analyze the data of X-ray examination, ultrasound, MRI, electromyography, ENMG of soft tissue of joints.
- To diagnose
- To develop a treatment plan, to predict its timing and results
- Apply bandage, elastic bandage, put a splint, corset to the affected segment.
- To substantiate the choice of the most effective approach of complex conservative treatment (medication, physiotherapy, massage, exercise therapy, manual therapy, post-isometric relaxation, acupuncture, etc.).
- Conducting of periarticular blockades, intra-articular and periarticular injections of drugs.
- Determine the principles of labor rehabilitation of patients.

**Main terms of the topic.**


**Literature.**

**General:**

1. Burianov A.A., Sklyarenko Y.T., Voloshin V.P., Zadnichenko M.A., Kvasha V.P., Grek V.P., Samusenko I.V., Omelchenko T.N., Sobolevsky Y.L

Methodical materials for self-training of students on the topic "Periarticular diseases of soft tissues of the musculoskeletal system". // Chronicle of Orthopedics and Traumatology 2011 – No.1-2.- p.256-263 or <http://www.kaftravm.com.ua/> 5

2. Diseases of the periarticular soft tissues: clinical picture, features of local therapy with corticosteroids <http://rheumatology.org.ua/blog/articles/612/?print=1>

3. Zborovsky A.B., Babayeva A.R. New approaches to the treatment of diseases of periarticular soft tissues.//Therapist archive. – 1997. – No.5. – p.82-84

**Auxiliary:**

1. Buryanov A.A., Omelchenko T.N., Sobolevsky Y.L. Intraarticular injection of osteoarthritis .// Practical recommendations. p.18.

2. Astapenko M.G., Erialis P.S. Non-articular diseases of soft tissues of the musculoskeletal system M.: Medicine, 1975. — 151 page.

3. Yu.F., V.V. Kamenev. Periarticular pains: arthritis of muscles and tendons

**Tasks for independent work.**

To be answered in written.

**Variant 1**

**Task 1.**

What are the periarticular deceases of soft tissues

- Periarthritis
- Tendinites
- Tendovaginitis
- ligaments
- bursitis

**Task 2.**

Fill in the table of variants of localization of degenerative-dystrophic biliary articular diseases of soft tissues of the shoulder, elbow joints, wrists and palm:

Shoulder joint	Subdetail bursitis, calcifying tendonitis of the rotator cuff of the shoulder. Tendinitis of the submandibular muscles, tendonitis of the long head of the biceps muscle of the shoulder. Syndrome of subacromial conflict, Impingement Syndrome, Degenerative Damage to the Rotator
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	Shoulder Cuff
Elbow joint	Lateral epicondylitis ("tennis player's elbow"). Medial epicondylitis (elbow of a golfer) elbow bursitis. Cubital tunnel syndrome
Wrist and Hand	De Carven's disease (stenosing tenosynovitis of the tendon of the short abductor of the thumb and long abductor of the thumb) flick of the finger (stenosing tenosynovitis of fingers). Carpal tunnel syndrome. Radial styloid

### Task 3.

List the main causes of diseases of soft periarticular tissues

- microtrauma
- excessive overload
- chronic overloads
- neuroreflexive and neurotrophic impact (periarthritits of the shoulder in cervical spondylosis)
- metabolic and endocrine disorders

### Task 4.

The disorders of the tendon of the supraspinum muscle of the shoulder joint can proceed in the form:

- tendonitis
- calcifying tendonitis
- rupture (partial rupture) of tendon.

### Task 5

Clinical symptoms of carpal tunnel syndrome:

- feeling of numbness of fingers of the hand, in the morning, and then at night.
- pain in the fingers (where the fingers hurt along the entire length), eventually spreads to the entire hand and can even reach the elbow.
- Pain and numbness often accompany unpleasant tingling and burning.
- over time, fingers lose sensitivity, patients are difficult to keep small objects, hands become "clumsy".

### Task 6

At the early stage of tenosynovitis to remove the inflammatory process prescription of a complex conservative treatment is required in the form of:

- rest (orthosis, gypsum longuette)
- cold application
- ultrasound, laser, magnetotherapy, diadynamic therapy
- pain-relief drugs, NSAIDs, preparations of systemic enzyme therapy
- administration of injections of antihomotoxic drugs (traumel C) locally and intramuscularly.

### **Task 7**

Instructions for the injection of corticosteroids (diprospan, flosteron, depo-medrol) around the tendon (for example, with a lateral epicondylitis) or near -, or intraarticularly:

- apply with caution in patients with hypertension, severe diabetes mellitus, nephritis, glaucoma, peptic ulcer and duodenal ulcer, functional liver dysfunction, cholelithiasis
- is applied to remove the non-infectious inflammatory process in the course of around and intra-articular diseases, in an acute period
- no more than 2-3 local injections with an interval of at least 2 weeks between injections
- It is necessary to avoid injecting the drug directly into the tendon.

### **Test questions.**

1. Tennis player's elbow is clinically manifests itself by:

- A. Pain in the place where the muscles attach to the outer shoulder epicondyle
- B. Pain in the place where the triceps brachium muscle is attached to the apex of the ulnar process of the ulna.
- C. Pain in the place where the muscles attach to the inner shoulder epicondyle
- D. Pain in the place where the biceps arm muscle is attached to the radius

2. De Quervain's disease is:

- A. Tendovaginitis of the muscles of the long distracting and short extensor of the thumb
- B. Tedovaginitis of the second back channel - tenosynovitis of long and short radius extensors of the hand.

- C. Tendovaginitis of the third posterior canal - the tenosynovitis of the left extensor of the first finger.
- D. Tendovaginitis of the fourth posterior canal - tendovaginitis of the general extensor IVII of the fingers and extensor of the second finger.
- E. Tendovaginitis of the fifth back channel is a tendon of the extensor of the fifth finger.
- F. Tendovaginitis of the sixth posterior canal - tenosynovitis of the elbow extensor of the hand.

3. The most informative method for diagnosing tenosynovitis, tendinitis, myotendenitis:

- A. MRT
- B. Ultrasound
- C. Electromyography
- D. Thermography
- E. Computerized tomography

4. The most effective treatment for exacerbation of the plantar fasciitis "heel spur"

- A. paraffin ozocerite applications
- B. physiotherapy: laser, ultrasound, magnetotherapy,
- C. NSAID administration
- D. local injection of corticosteroids (diprospan, flosteron, depomedrol)
- E. extracorporeal shock wave therapy F. gamma therapy

5. tendopereopathy of the Achilles tendon apparatus or Achilles tendon enthesopathy means

- A. inflammation of the surrounding tendon tissues. It can be accompanied by tissue degeneration
- B. inflammation and tendon damage. At that, the surrounding tissues are not involved in the process.
- C. degeneration and inflammation of the tendon at the site of its attachment to the bone. Sometimes accompanied by the development of the calcaneal spur or ossification.
- D. degenerative rupture of the Achilles tendon

## Variant 2

### **Task 1.**



To list extraarticular soft tissue lesions of the musculoskeletal system:

- Myositis
- neuritis
- Diseases of subcutaneous tissue (panniculitis, cellulitis, celloalgia)
- fibrositis

### Task 2.

Fill in the table of localization options for degenerative-dystrophic parietarticular diseases of the knee, foot, hip joint:

Hip Joint Area	Swivel bursitis. Bursitis in the area of m ileopsoas. Bursitis in the field of "goose paw" - tendon bend of goose paw
Knee-joint	"Knee of the runner" "Knee of the jumper" - tendonitis of the own ligament of the knee. Tendonitis of tendon of triceps muscle of the thigh. Prepatellar bursitis. Syndrome Pellegrini-Stieda
Foot	Posttibial tendonitis. Achillotendinitis. Achillobursitis. Heel bursitis. Tunnel Syndrome. Talalgia

### Task 3.

In the subacute period of tenosynovitis, the appointment of complex conservative treatment is required in the form of:

- ultraphonophoresis with hydrocortisone ointment, electrophoresis with anesthetic + KI
- paraffin-ozocerite applications
- extracorporal shock wave therapy
- administration of balneological methods (radon and hydrogen sulphide baths)
- Exercise therapy, post-isometric relaxation of muscles, massage

### Task 4.

The main causes of shoulder-scapular periartthritis:

- a wide range of pathological processes in the periarticular structures of the soft tissues of the shoulder joint
- Osteochondrosis of the cervicothoracic spine
- pathology of rotational (rotator) cuff of shoulder
- micro- and macro-traumas of the tendon-ligament apparatus of the shoulder joint

### **Task 5.**

De Quervain's disease (chronic tenosynovitis, stenosing tendovaginitis, stenosing ligamentitis) is clinically manifested by:

- pain in the projection of the wrist joint on the side of the thumb.
- Pain only with significant extension and tapping of the thumb
- Pain with a sharp lead of the hand toward the little finger
- Moderate local soft-tissue swelling in the anatomical snuff-box
- Finkelstein test. The patient presses his thumb toward the palm and tightly squeezes it with other fingers, and then pulls the brush toward the little finger. The movement is accompanied by a sharp pain.

### **Test questions.**

1. "Golfer elbow" is clinically manifested by:

- A. Pain in the place where the muscles attach to the outer shoulder epicondyle
- B. Pain in the place where the triceps arm muscle is attached to the apex of the ulnar process of the ulna
- C. Pain in the place where the muscles attach to the inner shoulder epicondyle
- D. Pain in the place where the biceps arm muscle is attached to the radius

2. The most effective method of treating aseptic ulnar bursitis:

- A. Administration of non-steroidal anti-inflammatory drugs
- B. Appointment of physiotherapy procedures with immobilization of the elbow joint
- D. Puncture of the ulnar bag
- E. Puncture of the ulnar bag with injection of a hormonal drug (diprospan, flosteron, kenalog, betaspan)

3. At an early stage to relieve the inflammatory process of tendovaginitis, tendinitis, bursitis it is not recommended:

- A. apply cold
- B. paraffin-ozocerite applications
- C. physiotherapy: laser, ultrasound, magnetotherapy, NSAIDs
- D. preparations of systemic enzyme therapy
- E. locally and intramuscularly injections of antihomotoxic drugs (traumel C) are administered.
- F. injection of corticosteroids (diprospan, flosteron, depomedrol) around the tendon

4. Plantar fasciitis "heel spur" is more likely to develop in patients:

- A. with longitudinal flat feet

- B. transverse spreading of the anterior part of the foot
- C. increased arch of the foot
- D. equilateral deformation of foot

5. What symptoms are not characteristic for carpal tunnel syndrome:

- A. pain, tingling, numbness (paresthesia) in the innervation zone of the median nerve
- B. weakness of flexion of the wrist, large and index fingers of the hand
- C. impossibility of passive, active extension of 3-5 fingers of the hand
- D. hyposthenia of the palmar surface of the thumb and index finger