FIZIOWEB

DIAGNOSIS AND THERAPY

PERIPHERAL JOINTS

UPPER LIMB

INTERPHALANGEAL JOINTS OF THE HAND

Patient position: He (she) is sitting.
Position of the therapist: He (she) sits or stands opposite the patient and grasps the mobilized arm so that he can fix it well to the mat or to his trunk.
Execution:

Dorsovolar shift: The therapist begins the examination with a mild distraction behind the distal phalanx. He then moves the phalanx in a dorsal direction and gently springs it. The fixed, i.e. proximal part of the segment is held dorsovolarly.

Lateromedial shift: The grasping of the proximal and distal parts of the segment is latero-medial. After distraction, the therapist stretches laterally and medially.

Rotation: The grip is either dorsovolar or lateromedial. After distraction, the therapist performs a rotational movement of the distal phalanx around its longitudinal axis.

Angulation: The grip is latero-medial. Angulation is performed by the therapist using the thumb or index finger. And so that on the side to which he wants to angle, he puts it from the side at the level of the joint gap as a hypomochlion. In this maneuver, the joint space opens on one side and closes on the other.

Technique: Diagnostic and therapeutic, repetitive mobilization.
Errors: Fixation is too far from the joint space. The therapist moves the joint into flexion or extension.

METACARPOPHALANGEAL JOINTS

Patient position: He (she) is sitting.
Position of the therapist: He sits or stands opposite the patient and grasps the mobilized arm so that he can fix it well to the mat or to his trunk.
Execution: The therapist examines and mobilizes dorsovolar joint play, lateromedial joint play, joint play, and rotation. Angulation is not possible, but distraction alone with simultaneous mild volar flexion is often effective.
Technique: Diagnostic and therapeutic, repetitive mobilization.
Errors: Fixation is too far from the joint space. The therapist moves the joint into flexion or extension.

METACARPS – VENTRO-DORSAL SHIFT

Patient position: He (she) is sitting.
The position of the therapist: He (she) sits or stands opposite the patient and grasps the mobilized arm so that he can fix it well to the mat or to his torso.
Execution: The therapist performs a mutual shift of the heads of the metacarpals in the dorsal and volar direction. It can perform this movement by moving one metacarpal head (or fixing the entire metacarpal) and moving the other (second) dorsally. The same will be done by the caller. We can also use a "scissors" feel in the area of the heads of the metacarpals.
Technique: Diagnostic and therapeutic, waiting in pretension.

METACARPS – DORSAL FAN

Patient position: He (she) is sitting.
Position of the therapist: He (she) sits or stands opposite the patient and grasps the mobilized arm so that he can fix it well to the mat or to his trunk.
Execution: The therapist places both thumbs and thenars on the dorsum of the patient's hand, the other fingers are inserted into the patient's palm.
The fan is performed by pulling the thumbs laterally apart and pressing the other fingers into the palm at the same time.
Technique: Therapeutic only, waiting in pretension.
Errors: It is not expected an myofascial release, but the hands slide like a massage.

METACARPS – PALMAR FAN

Patient position: He (she) is sitting.
Position of the therapist: He (she) sits or stands opposite the patient and grasps the mobilized arm so that he can fix it well to the mat or to his trunk.
Execution: With the same grip, press the thumbs into the dorsum and spread the palm with the other fingers. We can also perform the volar fan by turning the hand into supination and proceeding in the same way as for the dorsal fan. With the same grip, press the thumbs into the dorsum and spread the palm with the other fingers. We can also perform the volar fan by turning the hand into supination and proceeding in the same way as for the dorsal fan.
Technique: Therapeutic only, waiting in pretension.
Errors: It is not expected an myofascial release, but the hands slide like a massage.

THUMB CARPOMETACARPAL JOINT

Patient position: He (she) is sitting.
Position of the therapist: He sits or stands opposite the patient and grasps the mobilized arm so that he can fix it well to the mat or to his trunk.
Execution: The therapist grasps the trapezium bone between the thumb and forefinger dorso-volarly and firmly fixes it. The forearm is in pronation. He grasps the base of the 1st metacarpal between the thumb and forefinger of the other hand, holds the patient's thumb with the other fingers and performs the distraction. It springs in a dorsal and then a volar direction. We can also investigate and mobilize in rotation.
Technique: Diagnostic and therapeutic, repetitive mobilization.
Errors: Incorrect palpation of the axis of the trapezium and the base of the 1st metacarpal.
Comment: In this joint, the trapezium axis communicates with the 1st metacarpal. The trapezium axis is palpated by running a finger along the styloid process of the radius distally. Our finger fits into a small depression that corresponds to the lateral side of the scaphoid bone. Distal to this depression, we palpate the expansion again, and this means that we have found the trapezium axis.

BASIC ORIENTATION IN THE WRIST AREA

Orientation in this area is very important for wrist mobilization.

We find the radiocarpal joint by performing maximum dorsiflexion. The deepest fold of skin that forms on the dorsal side of the wrist is at the level of this joint.

The carpometacarpal joint is found at maximum volar (palmar) flexion of the wrist. The deepest skin fold that forms on the volar side is at the level of this joint.

During dorsiflexion, the distal row of carpal bones moves against the proximal row in the volar direction.

During volar (palmar) flexion, the proximal row of carpal bones moves dorsally against the radius.

Therefore, with limited dorsiflexion, we move the distal row of carpal bones relative to the proximal volar, and with limited volar flexion, we move the proximal row of carpal bones dorsally relative to the radius.

During lateral duction, the 1st metacarpal is brought closer to the radius so that the lateral part of the scaphoid axis tilts volarly, and the trapezium axis and trapezoid axis also tilt in the volar direction.

In medial duction, the proximal row of carpal bones moves laterally.

RADIOCARPAL JOINT

Patient position: He (she) is sitting.
Position of the therapist: He (she) stands next to the patient and fixes the proximal part of the segment to the pad.
Execution - radiocarpal joint: The treated forearm of the patient is in supination, resting on the table. The therapist fixes the distal end of the forearm close to the joint space with one hand and grasps the proximal row of carpal bones with the other hand. Performs a distraction and springs in the dorsal direction.
Technique: Diagnostic and therapeutic, repetitive mobilization.
Errors: Insufficient or incorrect fixation of the proximal part of the segment.

MEDIOCARPAL JOINT

Patient position: He (she) is sitting.
Position of the therapist: He (she) stands next to the patient and fixes the proximal part of the segment to the pad.
Execution: The treated forearm of the patient is in pronation, resting on the table. The therapist fixes the proximal row of carpal bones with one hand and grasps the distal row with the other hand. Performs distraction and flexion in the volar direction.
Technique: Diagnostic and therapeutic, repetitive mobilization.
Errors: Insufficient or incorrect fixation of the proximal part of the segment.
Comment: With limited ulnar duction, we mobilize in the dorsal direction and emphasize the medial part of the radiocarpal joint.

With limited radial duction, we mobilize in the volar direction and emphasize the lateral part of the intercarpal joint.

INTERCARPAL JOINTS

Patient position: He (she) is sitting.
Position of the therapist: Sitting or standing.
Execution: The therapist grasps the patient's upper limb so that the forearm is in pronation. One bone is fixed between the thumb and forefinger of one hand, the adjacent bone is grasped in the same way and the volar is stretched. The opposite direction is performed by changing the bone that is fixed to the one that is mobilized and vice versa. We can also use a "scissors" feel with advantage.
Technique: Diagnostic and therapeutic, repetitive mobilization.
Errors: The therapist does not palpate the individual bones carefully enough, and so it happens that he holds the same bone in both hands or the bones he grasps are not adjacent to each other.

OS CAPITATUM – TRACTION

Patient position: Standing or sitting on a lounger. The treated forearm is in pronation.
The position of the therapist: Sits or stands facing the patient on the side of the treated upper limb.
Execution: The therapist first performs maximal volar flexion, in which he feels the os capitatum - as the top of the wrist arch. He then places both thumbs over each other on the os capitatum and places his fingers in the patient's palm. He will ask him to completely relax the hand and bring the wrist into a slight dorsiflexion. He performs the distraction in the axis of the forearm and gently shakes his entire upper limb in this position. At the same time, the os capitatum protrudes slightly ventrally.
Technique: Only therapeutic - impact mobilization.
Errors: Improper palpation. Too vigorous execution. Slow execution.

RADIOULNAR JOINT DISTAL

Patient position: He (she) is sitting. The treated forearm is in supination.
Position of the therapist: Sits or stands facing the patient.
Execution: The therapist grasps the distal end of the radius between the thumb and forefinger with one hand. With the other hand, he grasps the distal end of the ulna in the same way. One hand is always fixing, and the other moves in the volar direction, in case of limitation of the joint clearance in the given direction of the springs. For one direction we fix the radius, for the other the ulna. We can also use a "scissors" touch.
Technique: Diagnostic and therapeutic - waiting an myofascial release or repetitive mobilization.

RADIO-ULNAR JOINT PROXIMAL

Patient position: He (she) is sitting. The treated forearm is in the middle position.
Position of the therapist: Stands or sits opposite the patient.
Execution: The therapist grasps the forearm distally with one hand, or fixes it by leaning against his torso. He grasps the proximal end of the radius with his other hand. The movement of the radius towards the ulna during examination and mobilization is performed in the direction of pronation or supination.
Technique: Diagnostic and therapeutic - waiting an myofascial release or repetitive mobilization.
Errors: Poor radio localization. Insufficient fixation of the distal part of the forearm.
Movement into pronation or supination is performed by both bones of the forearm.

ELBOW JOINT – SHIFT

Patient position: He (she) is sitting.
Position of the therapist: He (she) faces the patient. He grasps his treated upper limb by resting the medial side of the supinated forearm against his chest from the side, and with a fork formed by the thumb and the other fingers, he fixes the proximal end of the forearm from the lateral or medial side just below the joint space.
Execution: The therapist slightly flexes the patient's elbow so that the joint is not locked. The other hand grasps the distal end of the arm with a fork from the medial side and springs it in the lateral direction or vice versa. The forearm of this therapist's HK must point perpendicular to the patient's arm.
Technique: Diagnostic and therapeutic - repetitive mobilization.
Errors: The position of the hands is far from the joint space. Excessive forearm flexion. Full forearm extension.

ELBOW JOINT – ANGULATION

Patient position: He (she) is sitting.
Position of the therapist: He (she) faces the patient. He grasps the treated upper limb just above the wrist, brings the forearm into supination and fixes it to his torso. Bring the elbow into minimum flexion so that it is not locked.
Execution: The therapist's other hand creates a hypomochlion at the level of the articular cleft of the elbow. Contact is either the fork between the thumb and forefinger or the base of the palm. The therapist's forearm points perpendicular to the longitudinal axis of the patient's upper limb. The pressure is in the direction of the forearm.
Technique: Diagnostic and therapeutic. Shaking technique or repetitive mobilization.
Errors:The therapist uses the patient's forearms as levers. Excessive forearm flexion. Full forearm extension.
Comment: With a painful lateral epicondyle, springing is limited in the lateral direction and with a painful medial epicondyle in the medial direction.

ELBOW JOINT – TRACTION IN THE AXIS OF THE ARM

Patient position: He (she) is lying on his back. The treated elbow is in 90° flexion and the forearm in supination.
Position of the therapist: He(she) stands on the side of the treated upper limb. With one hand, he fixes the distal end of the arm to the table, with the other hand he grasps the proximal end of the patient's forearm.
Execution: The therapist performs traction in the axis of the humerus.
Technique: Therapeutic only. Traction, or repetitive traction.

ELBOW JOINT – TRACTION IN THE FOREARM AXIS

Patient position: He (she) is lying on their back. The treated elbow is in 90° flexion and the forearm in supination.
Position of the therapist: stands on the side of the treated upper limb. Fix the distal end of the arm to the table with one hand, grasp the forearm above the wrist with the other hand.
Execution: The therapist performs traction in the axis of the forearm. At the same time, it can deviate the forearm in a medial direction (opens the radiohumeral joint) or in a lateral direction (opens the humeroulnar joint).
Technique: Therapeutic only. Traction, or repetitive traction.
Errors: Insufficient fixation of the humerus.

ELBOW JOINT – TRACTION TO FLEXION

Patient position: He (she) is lying on his back. The treated elbow is in 90° flexion and the forearm in supination.
Position of the therapist: stands on the side of the treated upper limb. With one hand, he fixes the distal end of the arm to the table, with the other hand he grasps the proximal end of the patient's forearm.
Execution: The therapist performs a slight distraction in the axis of the humerus, and then flexes the forearm while the distraction is still maintained.
Technique: Therapeutic only - repetitive traction.
Errors: Release of traction during the performed movement.

ELBOW JOINT – SHAKING INTO EXTENSION

Patient position: He (she) is sitting.
Position of the therapist: sits between the patient's arm and torso, back to armpit. He grasps the outstretched upper limb just above the elbow with both hands. The forearm is in supination and the patient's upper limb is completely relaxed.
Execution: The therapist gently flexes the forearm with light upward force, and then lets it fall freely into extension.
Technique: Only therapeutic - shaking mobilization.
Errors: Too much range of motion or too much flexion of the patient's arm - shaking into extension can be painful.
Comment: The greater the flexion of the arm, the greater the force acting on the joint.

SHOULDER JOINT – CAUDAL SHIFT

Patient position: He (she) is sitting.
Position of the therapist: He (she) stands behind the patient.
Execution: The therapist grasps the ipsilateral arm of the patient by palpation. Then he brings it into 90° abduction and slight horizontal adduction so that the shoulder joint is in the middle position. He places his other hand with the radial edge of the index finger and the second metacarpal on the head of the patient's humerus and presses it caudally.
Technique: Diagnostic and therapeutic - repetitive mobilization.
Errors: Instead of caudal springing, abduction in the shoulder joint increases. Greater abduction than 90°. Insufficient horizontal adduction.

SHOULDER JOINT – SHIFTS

Patient position: He (she) is sitting. The treated arm is in 90° abduction and slight horizontal adduction.
Position of the therapist:He stands facing the treated upper limb of the patient and places the lower part of the treated arm on his shoulder.
Execution - ventral springing: The therapist places one palm on the head of the humerus from the dorsal side and the other palm on the ventral side of the shoulder joint, with the index finger at the place of the processus coracoideus. The fingers of both hands point cranially. The hand on the ventral surface of the shoulder is fixing, the other hand is springing in the ventral direction.
Execution - dorsal springing: The therapist places one palm on the scapula from the dorsal side, with the index finger at the glenoid fossa, and the other palm on the ventral side of the shoulder joint in the area of the humeral head. The hand on the dorsal side is fixing, the other hand is springing in the dorsal direction.
Technique: Diagnostic and therapeutic - repetitive mobilization.
Errors: Incorrect position of the therapist's fixing or springing hand - too far or vice versa on the joint gap. Too much spring range.
Note: Springing ventrally or dorsally are only two basic directions. By changing the position of both upper limbs, we can perform springing in any direction - e.g. dorsocaudal.

SHOULDER JOINT – VENTRAL SHIFT IN SUPINE

Patient position: He (she) is lying on his back.
Position of the therapist: He (she) stands on the side of the treated upper limb. He supports the patient's arm from below with his forearm and places his fist under the head of the humerus.
Execution: The therapist embraces the fossa glenoidealis with the other hand, the edge of the index finger is approximately at the place of the processus coracoideus. The scapula springs in a dorsal direction, and thus the head of the humerus moves ventrally.
Technique: Therapeutic - repetitive mobilization.

SHOULDER JOINT – DORSAL SHIFT IN PRONE

Patient position: He (she) is lying on his stomach.
Position of the therapist: He (she) stands on the side of the treated upper limb. He supports the patient's arm from below with his forearm and places his fist under the head of the humerus.
Execution: The therapist wraps the glenoideal fossa with the other hand. The scapula springs in a ventral direction, and thus the head of the humerus moves dorsally.
Technique: Therapeutic - repetitive mobilization.

SHOULDER JOINT – SITTING TRACTION

Patient position: He (she) sits on a lounger or stands.
Position of the therapist: He (she) stands with his back to the patient and slides his ipsilateral arm into his armpits. She grasps his treated upper limb with one hand above the elbow and the other above the wrist.
Execution: The therapist performs mild traction in the axis of the arm and forearm. He then asks the patient to gently pull the arm against - pulling the head of the humerus towards the fossa. After relaxation, the therapist performs traction again. Traction can be increased if the therapist performs a slight elevation and protraction of his shoulder.
Technique: Therapeutic. Traction with post-isometric relaxation - the isometric phase is supported at the end by inhalation and the relaxation phase by exhalation.
Errors: The therapist places the treated upper limb of the patient over his shoulder. The therapist does not wait for the patient to relax and tries to forcefully pull out the treated upper limb.

SHOULDER JOINT – LYING TRACTION (IN SUPINE)

Patient position: He (she) lies on his back at the edge of the couch on the treated side.
Position of the therapist: He (she)) sits on the same edge of the couch and tucks his hip into his armpit. He grasps the patient's treated upper limb with one hand above the elbow, the other hand above the wrist, and guides it in front of his body.
Execution: The therapist performs mild traction in the axis of the arm and forearm. He then asks the patient to gently pull the arm against - pulling the head of the humerus towards the fossa. After relaxation, the therapist performs traction again.
Technique: Therapeutic. Traction with post-isometric relaxation - the isometric phase is supported by inhalation and the relaxation phase by exhalation.
Errors: The therapist does not wait for the patient to relax and tries to forcefully pull out the treated upper limb.

ACROMIOCLAVICULAR JOINT – DORSAL SHIFT

Patient position: He (she) is lying on his back.
Position of the therapist: He (she) stands next to the table on the side of the treated joint, facing the patient. With one hand, he fixes the head of the humerus and the scapula from the dorsal side (pulls the "arm" ventrally). The thenar of the other hand is placed on the clavicle and the main pressure is applied near the acromioclavicular joint.
Execution: The therapist lightly presses the clavicle in a dorsal direction.
Technique: Diagnostic and therapeutic - repetitive mobilization (preload is applied).
Errors: Painful contact with the thenar on the clavicle.

ACROMIOCLAVICULAR JOINT – CRANIOCAUDAL SHIFT

Patient position: He (she) is lying on his back. The treated elbow is in 90° flexion.
Position of the therapist: He (she) stands on the treated side. With one hand, he fixes the patient's elbow in his palm, and with the other hand, he rests the hypothenar on the cranial edge of the clavicle.
Execution: The therapist lightly pushes both upper limbs against each other (the collarbone moves in the caudal direction).
Technique: Diagnostic and therapeutic - repetitive mobilization (preload is applied).
Errors: Painful hypothenar contact on the clavicle.

ACROMIOCLAVICULAR JOINT – TRACTION

Patient position: He (she) is lying on his back.
Position of the therapist: He (she) stands on the treated side, facing the couch. He grabs with one hand
the patient's upper limb by the arm above the elbow, possibly by the forearm and brings it into the abduction position of about 45°. The other hand is placed on the patient's collarbone with the hypothenar.
Execution: The therapist applies pressure towards the sternum with the hand placed on the collarbone. Thus the clavicle is fixed. With the other hand, he performs traction on the arm, which he maintains and at the same time performs gentle circumduction movements in one and the other direction.
Technique: Therapeutic only - traction.
Errors: Painful hypothenar contact on the clavicle.

STERNOCLAVICULAR JOINT – DORSAL SHIFT

Patient position: He (she) is lying on his back.
Position of the therapist: He (she) stands next to the table on the treated side. With one hand, form a fork between the thumb and flexed index finger and gently grasp the clavicle near the sternoclavicular joint. The other hand places the palm on the thus created fork.
Execution: The therapist moves the clavicle dorsally with the pressure of the other hand.
Technique: Diagnostic and therapeutic - repetitive mobilization (preload is applied).
Errors: Painful or uncomfortable pressure on or around the collarbone.

STERNOCLAVICULAR JOINT – CROSS PALPATION (FEEL)

Patient position: He (she) is lying on his back.
Position of the therapist: He (she) stands next to the table on the untreated side. He places one hand in a palm on the sternum, fingers pointing caudally. The other hand with the hypothenar on the clavicle, fingers pointing cranially (toward the shoulder).
Execution: The therapist performs springing with both hands at the same time, as if opening the sternoclavicular joint.
Technique: Therapeutic - repetitive mobilization.
Errors: Instead of moving the hands apart, the therapist applies pressure in the dorsal direction.

SCAPULOTHORACIC JOINT – PRONE POSITION

Patient position: He (she) is lying on his stomach. The head is turned towards the treated side.
Position of the therapist: He (she) stands on the treated side facing the patient's head.
Execution: The therapist abducts the patient's ipsilateral arm to 90°, supports the patient's arm with the ipsilateral forearm, and grasps the patient's shoulder with his hand. The other hand places the palm firmly on the shoulder blade. The therapist performs a circular movement that starts from the trunk and his legs - both hands move as one unit.
Technique: Diagnostic and therapeutic - passive movement with moderate pressure (it is not a right joint).
Errors: The therapist's hands circle against each other.
Comment: If the patient cannot lie on his stomach or if he does not abduct the arm, we mobilize the scapula lying on the untreated side.

SCAPULOTHORACIC JOINT – SIDE LYING

Patient position: lies on the opposite (untreated) side.
Position of the therapist: He (she) stands behind the patient.
Execution: The therapist passes one hand through the patient's armpit and places the palm on the scapula being treated. With the other hand, he grasps the shoulder of the same upper limb. The therapist performs a circular movement that starts from the trunk and his legs - both hands move as one unit. This is the same movement as in prone mobilization.
Technique: Diagnostic and therapeutic - passive movement with moderate pressure (it is not a right joint).
Errors: The therapist's hands circle against each other.

LOWER LIMB

INTERPHALANGEAL JOINTS OF THE LEG

Patient position: He (she) is lying on his back.
Position of the therapist: stands at the feet, on the treated side.
Execution: With one hand, the therapist fixes the proximal joint between the thumb and the other hand, in the same way, fixes the distal joint.

Dorsoplantar shift: The therapist begins the examination with mild distraction behind the distal phalanx. Then he moves the phalanx in a dorsal or plantar direction and gently springs it. The fixed (proximal) part of the segment is held dorso-volarly.

Lateromedial shift: The grasping of the proximal and distal parts of the segment is latero-medial. After distraction, the therapist stretches in a lateral or medial direction.

Rotation: The grip is either dorsovolar or lateromedial. After distraction, the therapist performs a rotational movement of the distal phalanx around its longitudinal axis.

Angulation: The grip is latero-medial. Angulation is performed by the therapist using the thumb or index finger. And so that on the side to which he wants to angle, he puts it from the side at the level of the joint gap as a hypomochlion. In this maneuver, the joint space opens on one side and closes on the other.

Technique: Diagnostic and therapeutic - repetitive mobilization.
Errors: Fixation is too far from the joint space. The therapist moves the joint into flexion or extension.

METATARZOPHALANGEAL JOINTS – SHIFTS

Patient position: He (she) is lying on his back.
Position of the therapist: stands at the feet, on the treated side.
Execution: The therapist fixes the metatarsus between the thumb and forefinger with one hand. With the other hand, he fixes the proximal joint of the finger in the same way. The therapist examines and mobilizes dorsoplantar displacement, lateromedial displacement and rotation. Angulation is not possible, but distraction alone is often effective with simultaneous mild plantar flexion.
Technique: Diagnostic and therapeutic - repetitive mobilization.
Errors: Fixation is too far from the joint space. The therapist moves the joint into flexion or extension.

METATARZOPHALANGEAL JOINTS – TRACTION IN THE PLANTAR DIRECTION

Patient position: He (she) is lying on his back.
Position of the therapist: stands at the patient's feet. He grasps the basal joint of the little finger between the thumb and bent index finger dorsoplantarly. The thumb is on the dorsum and the index finger is close to the joint gap of the plantar. The other hand fixes the corresponding metatarsal.
Execution: The therapist will perform a distraction and thereby obtain a bias. He then increases traction and simultaneously performs plantar flexion through the hypomochlion, which is formed by the bent index finger.
Technique: Therapeutic - traction.
Errors: Painful contact with the index finger that creates a hypomochlion.
Notes: ***CAUTION! ON THE VIDEO THERE IS A DESCRIPTION OF "METATARZOPHALANGEAL JOINTS - MOVEMENTS" (THE TECHNIQUE IS THE SAME)***

INTERMETATARSAL JOINTS – SHIFTS

Patient position: He (she) is lying on his back.
Position of the therapist: He (she) stands at the feet, facing the patient.
Execution: The therapist grasps the adjacent metatarsals. One hand fixes, the other moves in the plantar direction. To examine or treat the opposite direction, the fixing and moving hand are exchanged. A "scissors" feel can also be used with advantage.
Technique: Diagnostic and therapeutic. Waiting for an myofascial release of the metatarsal joints. Repetitive mobilization for therapy in the area of the metatarsal heads.

INTERMETATARSAL JOINTS – DORSAL FAN

Patient position: He (she) is lying on his back.
Position of the therapist: He (she) stands at the feet, facing the patient.
Execution: The therapist places both thumbs and thenars on the dorsum of the patient's foot, the other fingers are plantar. The dorsal fan is performed by pulling the thumbs laterally apart and pressing the other fingers into the planta at the same time.
Technique: Therapeutic - waiting in pretension.
Errors: It is not expected in pretension, but the hands slide like a massage.

INTERMETATARSAL JOINTS – PLANTAR FAN

Patient position: He (she) is lying on his back.
Position of the therapist: stands at the feet, facing the patient.
Execution: The therapist places both thumbs and thenars on the dorsum of the patient's foot, the other fingers are plantar. The plantar fan is performed by pressing the thumbs into the dorsum of the patient's feet and spreading the plantar with the other fingers.
Technique: Therapeutic – waiting in pretension.
Errors: It is not expected in pretension, but the hands slide like a massage.

TARZOMETATARSAL JOINTS

Patient position: He (she) is lying on his back.
Position of the therapist: stands at the feet on the treated side.
Execution: With one hand, the therapist grasps one metatarsal with tweezers, close to the joint space. With the other hand, he grasps the corresponding tarsal bone in a similar way. One hand always fixes and the other moves in the plantar direction. For the opposite direction, the hands switch tasks.
Technique: Diagnostic and therapeutic - repetitive mobilization.
Errors: Poor localization of bones.

INTERTARSAL JOINTS – SHIFTS

Patient position: He (she) is lying on his back.
Position of the therapist: They stand at the patient's feet on the treated side or against the patient.
Execution: The therapist grasps the adjacent tarsal bones with both hands at the same time, using tweezers. One hand always fixes and the other hand makes a shift in the plantar direction. For the opposite direction, the hands switch tasks.
Technique: Diagnostic and therapeutic - repetitive mobilization.
Errors: Poor localization of bones.

TARZOMETATARSAL AND INTERTARSAL JOINTS – SHAKING

Patient position: He (she) is lying on his stomach. The lower leg being treated is directed obliquely upwards at an angle of around 60°.
Position of the therapist: He (she) stands at the patient's feet. She grasps his treated leg with both hands, placing her thumbs over each other on the mobilized bone in the plantar. The other fingers are placed on the dorsum. In the ankle joint, the foot is in the middle position.
Execution: The therapist slightly presses on the mobilized bone, performs slight traction in the direction of the lower leg (the patient's thigh is slightly above the mat) and then rhythmically shakes the foot.
Technique: Therapeutic - shaking mobilization.
Errors: The therapist does not properly palpate the bone he wants to mobilize. Too much amplitude of movement. Contact in the planta is painful. The position of the foot is not in the middle position, but in plantar flexion. The movement is mainly through the ankle joint.

SUBTALAR JOINT

Patient position: He (she) is lying on his stomach. The treated lower limb is in 90° knee flexion.
Position of the therapist: He (she) stands by the side of the patient on the treated side. With one hand, she grasps his instep and the distal part of the lower leg, fixing the talocrural joint as well. He grabs the heel with his other hand.
Execution: The therapist moves the patient's heel against the instep lateromedially into supination and pronation and into plantar and dorsiflexion.
Technique: Diagnostic and therapeutic - repetitive mobilization.
Errors: Insufficient fixation of the talus.

SUBTALAR JOINT – TRACTION

Patient position: He (she) lies on his back, the treated leg is outside the couch.
Position of the therapist: He (she) stands at the side of the patient, on the treated side. Fixes with one hand from above his instep and the distal part of the lower leg in such a way that it also fixes the talocrural joint. With the other hand, he grasps the heel from the posterior side.
Execution: The therapist pulls the heel anteriorly (in the direction of the patient's toes).
Technique: Therapeutic - traction, or traction with impact.
Errors: Insufficient fixation of the talus. Excessive dorsiflexion at the talocrural joint.

TALOCRURAL JOINT – SHIFT

Patient position: He (she) is lying on his back. The treated lower limb is bent and the heel rests on the mat.
The position of the therapist: Stands next to the couch at the patient's feet, on the treated side. With one hand, he grasps the distal part of the lower leg from the anterior side. He supports the heel with his other hand and keeps the leg in a neutral position with his forearm.
Execution: The therapist applies pressure to the distal end of the lower leg in a dorsal direction.
Technique: Diagnostic and therapeutic - repetitive mobilization.
Errors: The mobilizing hand holds the talus at the same time as the tibiofibular fork, and mobilization of the upper hock is therefore not possible. The pressure is not in the direction of displacement perpendicular to the lower leg and dorsiflexion of the leg occurs.

TALOCRURAL JOINT – TRACTION

Patient position: He (she) lies on his back with his foot outside the lounger, or at the end of the lounger.
Position of the therapist – variant A: He (she) stands at the patient's feet. Clasped hands are placed on the instep of the patient so that the thumbs are on the foot.
The position of the therapist – option B: Stands at the patient's feet. He holds the patient's instep with one hand and the patient's heel with the other.
Execution: The therapist keeps the ankle in a neutral position, around 90°. The therapist performs a pull in the axis of the lower leg.
Technique: Therapeutic - traction.
Errors: During traction, especially at the moment of impact, the neutral position of the leg is not maintained and the therapist performs a movement into dorsal or plantar flexion.

TALOCRURAL JOINT – TRACTION IMPACT

Patient position: He (she) lies on his back with his foot outside the lounger, or at the end of the lounger.
Position of the therapist: He (she) stands at the patient's feet. Clasped hands are placed on the instep of the patient so that the toes are on the foot. The second holding option is holding the patient's instep with one hand and the patient's heel with the other.
Execution: The therapist keeps the ankle in a neutral position, around 90°. The therapist performs a pull in the axis of the lower leg.
Technique: Therapeutic - traction with impact.
Errors: During traction, especially at the moment of impact (acceleration), the neutral position of the leg is not maintained and the therapist performs a movement into dorsal or plantar flexion.

TIBIOFIBULAR JOINT

Patient position: He (she) is lying on his back. The treated lower limb is bent and rested with the foot on the mat.
Position of the therapist: He (she) places the toe of the patient's leg and fixes the upper part of the tibia from the medial side with one hand.
Execution: The therapist grasps the head of the fibula with the other hand so that the bent index finger is in the popliteal fossa and the thumb reaches the anterior surface of the fibula. The first hand, which fixes the tibia, places the thumb on the thumb nail of the other hand. By joint movement of both hands – along the circumference of the lower leg, the therapist performs a shift in the posterior or anterior direction.
Technique: Diagnostic and therapeutic - waiting in pretension or repetitive mobilization.
Errors: Painful pressure contact between thumb and forefinger.

PATELOFEMORAL JOINT

Patient position: He (she) is lying on his back. Both lower limbs are stretched and relaxed.
Position of the therapist: He (she) stands next to the couch, on the side of the treated lower limb. He grasps the upper edge of the patella between the thumb and forefinger and gently presses the patella against the femur with the other hand.
Execution: The therapist examines the gliding movement of the patella in all directions.
Technique: Diagnostic and therapeutic - passive movement with pressure on the joint. Errors:A lot of pressure on the patella. Rubbing of the patella in large circles throughout its entire range.
Comment: In the case of the patella, it is not a typical blockage, however, if the joint clearance is limited, we feel that the patella is rubbing or as if it is stuck. To restore mobility, we perform small circular movements with light pressure on the patella in the area where we detect increased resistance - "rubbing" of the patella.

KNEE JOINT – ANTERIOR SHIFT

Patient position: He (she) is lying on his back. The treated lower limb is bent and rested with the foot on the mat.
Position of the therapist: He (she) places the toe of the patient's leg and places both hands on the proximal part of the lower leg (fingers from behind, thumbs on the tuberosity of the tibia).
Execution: The therapist moves the tibia anteriorly in a direction perpendicular to the axis of the lower leg.
Technique: Diagnostic and therapeutic, repetitive mobilization. However, it is primarily a diagnostic technique to determine pathological increased mobility, e.g. in LCA disorders (anterior drawer test)

KNEE JOINT – POSTERIOR SHIFT

Patient position: He (she) is lying on his back. The treated lower limb is bent and rested with the foot on the mat.
Position of the therapist: He (she) places the toe of the patient's leg and places both hands on the proximal part of the lower leg (fingers from behind, thumbs on the tuberosity of the tibia).
Execution: The therapist moves the tibia posteriorly in a direction perpendicular to the axis of the lower leg.
Technique: Diagnostic and therapeutic, repetitive mobilization. However, it is primarily a diagnostic technique to determine pathological increased mobility, e.g. in the case of a LCP disorder (posterior drawer test)

KNEE JOINT – ANGULATION

Patient position: He (she) is lying on his back.
Position of the therapist – angulation medially (variant A): He (she) stands next to the couch on the side of the treated lower limb. He grabs the lower leg above the ankle and secures it to his torso. It keeps the lower limb in minimal flexion.
Design – angulation medially (variant A): The therapist stretches the base of the palm of the other hand, or the edge formed by the thumb and forefinger, on the lateral surface of the knee in a medial direction.
Position of the therapist – angulation laterally (variant B): He (she) sits on a couch between both of the patient's legs. With one hand, he fixes the lower leg to his body. The other hand is placed with the root of the palm on the medial side of the knee.
Design – angulation laterally (variant B): The therapist uses the root of the palm, or the edge formed by the thumb and forefinger, on the medial surface of the knee in a lateral direction.
Technique: Diagnostic and therapeutic - repetitive mobilization or shaking mobilization.
Errors: The therapist uses the lower leg as a lever. Full extension or excessive flexion in the knee joint. The pressure does not go directly against the bilateral joint space and the therapist performs a slight flexion in the knee.

KNEE JOINT – SHIFTS

Patient position: He (she) is lying on his back. The treated lower limb is supported under a pillow or towel, and is in minimal flexion.
Position of the therapist: He (she) stands next to the couch on the side of the treated lower limb, facing the patient. With one hand, from the lateral part, he fixes the thigh between the thumb and forefinger. The other hand is placed in the same way on the proximal part of the lower leg from the medial side. The direction of the forearms is opposite to each other if possible.
Execution: The therapist makes a shift in the medial direction by pressing his hands on the lower leg. To move in the lateral direction, the hands are exchanged.
Technique: Diagnostic and therapeutic - repetitive mobilization.
Errors: Full extension or excessive flexion in the knee joint. Fixation and displacement pressure are not mutually exclusive.

KNEE JOINT – TRACTION LYING ON THE PRONE POSITION

Patient position: is lying on his stomach. The treated knee is in right angle flexion.
Position of the therapist: He (she) is standing next to the lounger. He fixes the lower end of the patient's thigh to the mat with his knee and holds the lower leg above the ankle with both hands.
Execution: The therapist performs a pull in the axis of the lower leg with both hands. During traction, it can deflect the lower leg laterally or medially, or perform internal or external rotation of the lower leg.
Technique: Therapeutic - traction.
Errors: Insufficient or painful fixation of the thigh.

KNEE JOINT – TRACTION LYING ON THE SUPINE POSITION

Patient position: He (she) is lying on his back. The treated lower limb is flexed at 90° in the hip and knee joints. He maintains the position with the help of his upper limbs, holding himself in the kneecap or with a towel.
Position of the therapist: He (she) stands behind the couch and holds the lower leg above the ankle with both hands.
Execution: The therapist performs a pull in the axis of the lower leg with both hands. During traction, it can deflect the lower leg laterally or medially, or perform internal or external rotation of the lower leg.
Technique: Therapeutic - traction.

HIP JOINT – TRACTION IN THE FEMORAL AXIS (OPTION A)

Patient position: He (she) is lying on his back.
Position of the therapist: He (she) stands at the patient's feet. He grasps the treated lower extremity above the ankles so softly that it doesn't hurt and will bring her into moderate (10-15°) flexion, abduction and external rotation at the hip joint. This will achieve a neutral position in this joint.
Execution: In this position, the therapist pulls in the axis of the lower extremity into pretension and invites the patient to pull against (toward the socket). After the isometric phase, the patient relaxes and the therapist performs a pull in the axis of the lower limb.
Technique: Therapeutic - traction with postisometric relaxation. The isometric phase is supported at the end by inhalation and the relaxation phase by exhalation.
Errors: The hip joint is not in a neutral position. Premature or too intense thrust in the relaxation phase.

HIP JOINT-TRACTION IN THE FEMORAL AXIS (OPTION B)

Patient position: He (she) is lying on his back.
Position of the therapist: He (she) stands at the patient's feet. He rests the untreated lower limb with his foot on the upper part of the thigh of his nearer lower limb. He grasps the treated lower limb above the ankles so softly that it does not hurt and brings it into a slight (10°-15°) flexion, abduction and external rotation in the hip joint. This will achieve a neutral position in this joint.
Execution: In this position, the therapist pulls in the axis of the lower extremity into pretension and invites the patient to pull against (toward the socket). After the isometric phase, the patient relaxes and the therapist performs a pull in the axis of the lower limb.
Technique: Therapeutic - traction with postisometric relaxation. The isometric phase is supported at the end by inhalation and the relaxation phase by exhalation.
Errors: The hip joint is not in a neutral position. Premature or too intense thrust in the relaxation phase.

HIP JOINT – TRACTION IN THE AXIS OF THE NECK OF THE FEMUR

Patient position: He (she) is lying on his back.
Position of the therapist: He (she) sits on a chair next to the couch on the treated side, facing the patient. He places his treated lower limb on his shoulder so that the popliteal fossa is on the shoulder and the lower leg hangs freely behind his back (position of the lower limb in the hip joint – flexion 30-40°, abduction 20-30°, external rotation 10-20°). The hands with intertwined fingers are placed in the groin of the patient on the inner to front surface of the thigh, both forearms of the therapist are in the direction of traction.
Execution: The therapist performs a gentle pull on the axis of the neck to obtain pretension. Then he asks the patient to put up a slight resistance, as if to bring the entire thigh closer to the opposite shoulder. The isometric phase is followed by a release and a pull in the direction of the axis of the neck of the femur.
Technique: Therapeutic - traction with postisometric relaxation. The isometric phase is supported at the end by inhalation and the relaxation phase by exhalation.
Errors: Isometric activity is in the direction of flexion of the hip joint, and this is mostly due to bad hand positions only on the front surface of the thigh.