# Hecker / Steveling / Peuker / Kastner / Liebchen Color Atlas of Acupuncture

Leseprobe

Color Atlas of Acupuncture von <u>Hecker / Steveling / Peuker / Kastner / Liebchen</u> Herausgeber: MVS Medizinverlage Stuttgart



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**Origin:** Lateral epicondyle of humerus, annular and collateral ligaments of radius, fascia of lower arm.

**Insertion:** Dorsal aponeurosis; proximal to the middle finger joints, the aponeurosis divides into the ulnar and radial tendinous portions that reunite distally to the joint in an aponeurosis and insert at the base of the terminal phalanges.

**Innervation:** Deep branch of radial nerve (C6 to C8).

**Action:** Extends finger joints, extends wrist, and supports ulnar abduction.

#### Trigger Points of the Extensor Muscle of Fingers

#### **Preliminary Remarks**

Trigger points are found here predominantly in the muscle bellies of the extensor muscles of the ring and middle fingers. Activation of trigger points usually takes place through chronic strain. Associated trigger points are often also present in the finger muscles and the extensor muscle of wrist.

#### **Examination of Trigger Points**

Typical local twitch responses can be triggered in the middle of the muscle belly in the region of the trigger points.

## **Therapy of Trigger Points**

Targeted intramuscular stimulation with subsequent passive stretching of the muscle is effective within a short time. Conventional needling and therapeutic local anesthesia may also be considered.





#### Trigger Points and Areas of Pain Projection

# Extensor Muscle of Fingers, Trigger Point 1

The trigger point of the middle finger extensor is found close to the elbow in the region of the muscle belly. Typical pain projection runs along the muscle into the middle finger; now and then pain is also localized over the proximal flexion crease of the wrist.



# ▲ Extensor Muscle of Fingers, Trigger Point 2

The trigger point of the ring finger extensor lies distal and ulnar to trigger point 1. Its area of pain projection reaches into the ring finger and up toward the radiohumeral joint. Important Acupuncture Points and Their Localizations

#### LI-8

Location: 4 Cun distal to acupoint LI-11.

## O LI-9

Location: 3 Cun distal to acupoint LI-11.

#### O LI-10

Location: 2 Cun distal to acupoint LI-11.

# O LI-11

**Location:** Lateral to the radial end of the flexion crease of elbow when the lower arm is flexed at a right angle, in a depression between the end of the crease and the lateral epicondyle in the region of the long radial extensor of the wrist.





#### **TB-4**

**Location:** Slightly ulnar to the center of the dorsal flexion crease of the wrist (the joint space between radius, ulna, and proximal wrist bone series), ulnar to the tendon of the extensor muscle of fingers, radial to the tendon of the extensor muscle of little finger.

#### TB-5

**Location:** 2 Cun proximal to acupoint TB-4, between the radius and ulna, on a line connecting acupoint TB-4 and the tip of the olecranon process of ulna.

# **TB-6**

**Location:** 3 Cun proximal to acupoint TB-4, between the radius and ulna, on the line connecting acupoint TB-4 and the tip of the olecranon.

## TB-8

**Location:** 4 Cun proximal to acupoint TB-4, between the radius and ulna.

#### **TB-9**

**Location:** 7 Cun proximal to acupoint TB-4 on the line connecting acupoint TB-4 and the tip of the olecranon. Hence, on the connecting line described, the point lies 1 Cun proximal to the middle between acupoint TB-4 and the flexion crease of elbow.

**Origin:** Humeral head: medial epicondyle of humerus; ulnar head: coronoid process of ulna.

**Insertion:** Lateral surface of radius and pronator tuberosity.

Innervation: Median nerve (C6 and C7).

**Action:** Pronates the forearm and contributes to flexion of the elbow joint.

# Trigger Points of the Pronator Teres Muscle

#### **Preliminary Remarks**

Trigger points are usually found in the proximal part of the muscle belly. Their activation is caused by repetitive pronation of the forearm, either through excessive workload or through chronic stress from sports (e. g., occasional tennis player with poor serving technique).

The median nerve passes underneath the pronator teres muscle, and sometimes it runs through the muscle. Compression of the nerve may lead to a characteristic entrapment neuropathy that may finally resemble carpal tunnel syndrome.

#### **Examination of Trigger Points**

The muscle is easy to examine by deep palpation in the cubital fossa. Palpation triggers the characteristic radiation of pain.



#### Therapy of Trigger Points

There is a risk of damaging the median nerve. Before dry-needling or injecting the trigger points, the course of the median nerve must be accurately identified. Manual treatment by acupressure is another option.



#### Trigger Points and Areas of Pain Projection

## A Pronator Treres Muscle, Trigger Point

The main trigger point is found in the muscle belly in the cubital fossa near the origin of the muscle. The pain radiates from the proximal anteroradial part of the forearm to the wrist, where it reaches the proximal palmar part of the thumb.



# Important Acupuncture Points and their Localizations

# PC-3

**Location:** On the ulnar side of the tendon of the biceps brachii muscle, in the elbow crease.

# O HT-3

**Location:** Between the ulnar end of the elbow crease and the medial epicondyle of the humerus when the elbow is flexed.

**Origin:** Humero-ulnar head: medial epicondyle of humerus and coronoid process of ulna.

Radial head: anterior surface of radius.

**Insertion:** Four tendons insert on the lateral bony ridges of the middle phalanges of fingers II to V.

Innervation: Median nerve (C7 to T1).

**Action:** Flexes the metacarpophalangeal joints II to V and the proximal interphalangeal joints II to V.

**Miscellaneous:** The tendons of the deep flexor muscle of the fingers pass between the parts of the tendon insertion on the end phalanges.

#### Trigger Points of the Superficial Flexor Muscle of the Fingers

#### **Preliminary Remarks**

The flexors of the fingers, like the tensors of the fingers, are superficial muscles. To avoid damage to the nerves, deep needling should never be performed. Trigger point activation is caused by chronic strain due to manual work. In particular, monotonous grasping movements activate these trigger points.

#### **Examination of Trigger Points**

It requires only slight pressure to palpate the trigger points in the middle of the muscle belly. This is done by gently palpating through the ulnar and radial flexor muscles of the wrist as well as the palmar muscle. Accurate identification is confirmed by increased sensation of pain when palpating the trigger points while simultaneously checking muscle function.





# Therapy of Trigger Points

Damage to the ramifications of the median nerve and to the ulnar artery and vein should be avoided by taking great care during dry-needling or injection. The trigger points are easy to inactivate. Subsequent stretching of the flexors by dorsal extension of the fingers is essential for preventing relapses, and patients should be advised to do this on their own.

# Trigger Points and Areas of Pain Projection

In the radial portion of the flexor muscles, the pain radiates into the palmar side of the middle finger; in the ulnar portion it radiates into the ring finger or little finger, sometimes with further projection into the palm.



Important Acupuncture Points and their Localizations

#### LU-5

**Location:** Radial to the biceps tendons in the elbow crease.

# LU-7

**Location:** On the radial side of the forearm, in a V-shaped groove proximal to the styloid process of the radius, 1.5 Cun proximal to the crease of the wrist. The acupoint is located where the proximal portion of the styloid process of the radius merges into the shaft of the radius.

#### PC-3

**Location:** On the ulnar side of the tendon of the biceps brachii muscle, in the elbow crease.

# PC-6

**Location:** 2 Cun proximal to the palmar flexion crease of the wrist that lies proximal to the pisiform bone, between the tendons of the palmaris longus muscle and the radial flexor muscle of the wrist. As described for the location of acupoint HT-7, choose the wrist crease that lies between the radius and ulna on the one side and the proximal row of carpal bones on the other. As the proximal row of carpal bones, the crease in question is located proximal to the pisiform bone.

#### PC-7

**Location:** In the middle of the palmar flexion crease of the wrist that lies proximal to the pisiform bone, between the tendons of the palmaris longus muscle and the radial flexor muscle of the wrist.



#### O HT-3

**Location:** Between the ulnar end of the elbow crease and the medial epicondyle of the humerus when the elbow is flexed.

## O HT-4

**Location:** 1.5 Cun proximal to acupoint HT-7, radial to the tendon of the ulnar flexor muscle of the wrist.

# O HT-5

**Location:** 1 Cun proximal to acupoint HT-7, radial to the tendon of the ulnar flexor muscle of the wrist.

## O HT-7

**Location:** At the palmar flexion crease of the wrist, radial to the tendon of the ulnar flexor muscle of the wrist.

**Origin:** Inferior borders and outer surfaces of the 5th to 12th ribs.

**Insertion:** Pubic tubercle, pubic crest, outer margin of iliac crest, inguinal ligament, and linea alba.

**Innervation:** Intercostal nerves (T5 to T11), subcostal nerve (T12), iliohypogastric nerve (T12 to L1), and ilioinguinal nerve (L1).

Action: Unilateral contraction rotates the thorax against the pelvis to the contralateral side. Bilateral contraction flexes the vertebral column. Furthermore, it acts as auxiliary muscle for abdominal compression and forced expiration.

#### Trigger Points of the External Oblique Muscle of the Abdomen

#### **Preliminary Remarks**

Trigger points frequently develop in connection with an acute abdomen (boardlike abdomen). Trigger points are also observed with diseases of the inner organs, such as dysmenorrhea, diarrhea, spasm of the urinary bladder, and testicular pain. They may occur primarily and then cause secondary abdominal symptoms. More often, however, it is the other way around: the presence of visceral afferent stimuli leads to trigger point formation in the abdominal muscles. Acute lumbago is also frequently associated with trigger points in the oblique abdominal muscles.



# **Examination of Trigger Points**

With the patient sitting, taut bands and trigger points in this muscle are provoked by rotating movements.

#### Therapy of Trigger Points

Dry-needling is possible without any problem, and trigger point infiltration is also an option. Injection or acupuncture of the trigger points is performed with the patient in a supine position. Puncture of the peritoneum must be avoided. However, damage to the inner organs rarely occurs.



# Trigger Points and Areas of Pain Projection

# ▲ External Oblique Muscle of Abdomen, Trigger Point 1

It lies on the anterior border of the costal arch toward the epigastrium. The characteristic radiation of pain into the epigastrium mimics symptoms of angina pectoris or epigastric complaints.

# External Oblique Muscle of Abdomen, Trigger Point 2

It lies near the muscle insertion on the iliac crest. From here the radiation of pain reaches into the inguinal region and toward the labia or testes. Prolonged standing causes additional radiation of pain into the entire abdominal region, which makes it difficult to locate the primary cause.



Important Acupuncture Points and their Localizations

#### O CV-2

**Location:** At the superior border of the pubic symphysis, on the anterior midline.

# O CV-3

**Location:** 1 Cun superior to the middle of the superior border of the pubic symphysis.

# O CV-4

**Location:** 2 Cun superior to the middle of the superior border of the pubic symphysis (for correct orientation, see acupoint CV-3).

## O CV-6

**Location:** 1.5 Cun inferior to the umbilicus (for correct orientation, see acupoint CV-3).

#### OCV-12

**Location:** Midway between the base of the xiphoid process and the umbilicus.

#### OCV-14

**Location:** 1 Cun inferior to the tip of the xiphoid process (acupoint CV-15).

# O CV-15

**Location:** Just below the tip of the xiphoid process on the anterior midline.

#### O CV-17

**Location:** On the anterior midline at the level of the nipples in the fourth ICS.



## O LR-14

**Location:** In the sixth ICS, below the nipple on the mammillary line.

O ST-25

Location: 2 Cun lateral to the umbilicus.

O SP-15

Location: 4 Cun lateral to the umbilicus.

**Origin:** Iliac fossa to terminal line of pelvis, anterior inferior iliac spine, and lacuna of muscles to anterior surface of the hip joint capsule.

#### Insertion: Lesser trochanter of femur

**Innervation:** Femoral nerve (T12 to L3/L4).

Action: Together with the greater psoas muscle it forms the strongest flexor muscle of the hip joint (iliopsoas muscle). With the pelvic and lumbar regions fixed, it flexes the thigh. With the femur immobilized, it rotates the ipsilateral pelvis laterally.

#### **Trigger Points of the Iliac Muscle**

#### **Preliminary Remarks**

Muscle shortenings are very common with coxarthrosis. The muscle has a general tendency to contract and develop trigger points. This tendency is often promoted by visceral afferent stimuli occurring in response to irritation of the cecum bordering directly on the fascia of the iliac muscle. The trigger points frequently appear in association with trigger points of other muscles (e.g., quadratus lumborum, rectus abdominis, and rectus femoris muscles; tensor muscle of fascia lata). Treatment of these secondary trigger points is therefore recommended.

#### **Examination of Trigger Points**

With the relaxed patient in supine position, the muscle is directly palpated between the cecum and the inside of the iliac bone. However, adhesions in the region often make this difficult. In this case, manual mobilization of the cecum is usually necessary. One trigger point is found in the more anterior part of the muscle. Another trigger point is found at the level of the hip joint.



#### Therapy of Trigger Points

Acupuncture of the trigger points in the iliac muscle may be attempted if the cecum can be moved far enough in medial direction. It is important to treat the cause of the visceral lesion as well. Relapses are avoided by physiotherapeutic stretching techniques involving extension of the ipsilateral hip joint with maximum flexion of the contralateral hip joint at the same time, and stretching of the rectus femoris muscle, which is usually also contracted.



# Trigger Points and Areas of Pain Projection

# ▲ Iliac Muscle, Trigger Points 1 and 2

Trigger point 1 lies in the ventral portion of the iliopsoas muscle and prevertebrally at the level of vertebra L3. Trigger point 2 lies directly above the hip joint. Their areas of pain projection are found directly paravertebrally in the lumbar region with radiation into the sacroiliac joint and the upper medial gluteal area. Another area of pain projection appears over the rectus femoris muscle with radiation toward the anterior inferior iliac spine.



**Origin:** Lateral surfaces of vertebrae T12 to L4, and intervertebral disks and costal processes of the lumbar vertebrae.

Insertion: Lesser trochanter of femur.

**Innervation:** Femoral nerve (T12 to L3/L4).

Action: Together with the iliac muscle, it forms the strongest flexor muscle of the hip joint (iliopsoas muscle). With the femur fixed, it flexes the lumbar spine, posteriorly rotates the ipsilateral half of pelvis, and laterally flexes the lumbar spine.

**Miscellaneous:** Between the two portions of the psoas muscle lies the lumbar plexus.

#### Trigger Points of the Psoas Muscle

#### **Preliminary Remarks**

The psoas muscle is subdivided into the smaller psoas muscle and the greater psoas muscle. Trigger points are frequently found in the region of the greater psoas muscle. They are associated with repetitive strain injuries and poor posture of the lumbar spine, and also with coxarthrosis. Here, too, there may be visceral afferent stimuli; they originate from the kidney directly overlying the psoas muscle or from the sigmoid colon traversing on the left. An anterior iliac lesion is therefore frequently found on the right (anterior rotation of the pelvic half), or a posterior iliac lesion is found on the left (posterior rotation of the pelvic half). This results in a functional difference in leg length caused by shortening of the left leg, or lengthening of the right leg, due to distal displacement (on the right) or proximal displacement (on the left) of the rotational center of the hip joint. It is therefore recommended to treat not only the trigger points but definitely also the



causes of the underlying distortion of the pelvis.

#### **Examination of Trigger Points**

The greater psoas muscle can only be examined in a relaxed patient and by using deep palpation. It is often very sensitive to pressure. Jump signs are absent.

#### Therapy of Trigger Points

Trigger points in the region of the psoas muscle are usually not accessible to dryneedling or injection, and if so, then only with difficulty. Other stretching methods are therefore recommended, such as myofascial release.

# Important Acupuncture Points and Their Localizations

Because of the relatively protected deep position of the psoas muscle it is difficult to access via acupuncture.

**Origin:** Dorsal fibers: iliac crest and iliolumbar ligament; ventral parts: costal processes of verte-

brae L2 to L5.

**Insertion:** Dorsal part: 12th rib and costal processes of vertebrae L1 to L3; ventral part: 12th rib.

**Innervation:** Subcostal nerve and lumbar plexus (T12 to L3).

**Action:** Flexes the trunk laterally, stabilizes the 12th rib during respiration (fixed point for the diaphragm).

## Trigger Points of the Quadratus Lumborum Muscle

## **Preliminary Remarks**

There are two trigger points in both the deep and superficial portions of the muscle. Disorders of the sacroiliac joint frequently present clinically. Activation of trigger points results from acute strain, also in connection with accidents, and becomes chronic in functional scoliosis (as a result of unequal lengths of the legs) or in primary scoliosis. Associated trigger points appear in the region of abdominal muscles, in the contralateral quadratus lumborum muscle, in the ipsilateral iliopsoas muscle and iliocostal muscle, and occasionally also in the latissimus dorsi muscle and internal oblique muscle of abdomen. Additional trigger points are found in the gluteal region, especially in case of symptoms of nerve root stimulation related to nerve roots L5 and S1.





# **Examination of Trigger Points**

First of all, the following orthopedic causes should be clarified: functional or structural scoliosis, scoliotic pelvis, oblique position of pelvis, and displacement of pelvis. Palpation of trigger points is performed while the patient is lying relaxed on his/her side. Local twitch responses are rarely observed; usually there is distinct hardening of the muscle.

#### Therapy of Trigger Points

Direct needling is only possible with acupuncture needles of at least 60 mm in length. Therapeutic local anesthesia is a possible alternative. However, dry-needling can usually be successfully performed as well; in lateral position, the needle is aimed in the direction of the transverse processes. As follow-up treatment, stretching the muscles is carried out in the dorsal position with the hip joint flexed approximately 80° using postisometric relaxation by adduction of the hip joint. This also stretches the entire gluteal region. Trigger Points and Areas of Pain Projection

# Quadratus Lumborum Muscle, Trigger Points 1 and 2

The superficial trigger point 1 lies approximately 2 Cun below the lateral end of the muscle border and 2 Cun below the 12th rib; it shows an area of pain projection at the level of the lateral and dorsal proximal gluteal regions with radiation toward the groin and the sacroiliac joint. Trigger point 2 is found at the level of L4, just above the insertion of the quadratus lumborum muscle at the dorsolateral iliac crest. Its pain projection lies at the level of the greater trochanter and radiates in ventral and dorsal directions.







# ▲ Quadratus Lumborum Muscle, Trigger Points 3 and 4

Trigger points of the muscle's deep portion are localized at the level of L3 and L4; their typical projection areas are found over the sacroiliac joint and in the lower middle of the buttock.



# Important Acupuncture Points and Their Localizations

#### O BL-23

**Location:** 1.5 Cun lateral to the lower edge of the spinous process of vertebra L2.

# O BL-51

**Location:** 3 Cun lateral to the lower edge of the spinous process of vertebra L1.

# O BL-52

**Location:** 3 Cun lateral to the lower edge of the spinous process of vertebra L2.

**Origin:** Dorsal aspect of the ilium, thoracolumbar fascia, lateral edge of the sacrum and coccyx, sacrotuberal ligament.

**Insertion:** Gluteal tuberosity of the femur, iliotibial tract of the fascia lata, lateral intermuscular septum.

**Innervation:** inferior gluteal nerve (L4 to S1).

Action: Extends the thigh in the hip joint; upper fibers: abduction,

lower fibers: adduction, rotate the thigh laterally.

#### Trigger Points of the Gluteus Maximus Muscle

#### **Preliminary Remarks**

The muscle has three trigger points. Trigger points in this region often appear in combination with those of the gluteus minimus muscle and the sciaticocrural muscle. Trigger points of the deep dorsal extensor muscles are also found to be associated. Activation often results from acute events associated with increased strain of the gluteus maximus muscle. Such trigger points are therefore frequently found in athletes.

#### Examination of Trigger Points

The trigger points lie superficially and can easily be palpated. Local twitch responses are rarely observed. Especially in the case of trigger points 1 and 2, direct pressure sensibility of the sciatic nerve in the sense of Valleix's points should be differentiated.



#### Therapy of Trigger Points

Inactivation of trigger points is achieved without any problem by acupuncture, dry-needling, and therapeutic local anesthesia. Targeted stretching exercises using postisometric relaxation complete the treatment.



# Trigger Points and Areas of Pain Projection

# Gluteus Maximus Muscle, Trigger Point 1

Trigger point 1 lies on the extension of a vertical line through the posterior iliac spine at the level of the proximal end of the gluteal fold; it has its main projection area along the medial and caudal margins of the muscle.



# ▲ Gluteus Maximus Muscle, Trigger Point 2

Trigger point 2 is found at the level of the caudal margin of the muscle approximately 4 to 5 cm above the gluteal crease. The projection areas are localized in this region, the entire gluteal region including the region over the caudal sacrum, and above the greater trochanter.

# ▲ Gluteus Maximus Muscle, Trigger Point 3

This point at the mediocaudal margin of the muscle has its main projection area in the direction of the coccyx.





# Important Acupuncture Points and Their Localizations

# O BL-27

**Location:** At the level of the first sacral foramen, 1.5 Cun lateral to the dorsal median line in a depression between the sacrum and upper region of the posterior superior iliac spine.

#### BL-28

**Location:** At the level of the 2nd sacral foramen, 1.5 Cun lateral to the dorsal median line.

#### O BL-29

**Location:** At the level of the 3rd sacral foramen, 1.5 Cun lateral to the dorsal median line.

#### BL-30

**Location:** At the level of the 4th sacral foramen, 1.5 Cun lateral to the dorsal median line.

#### BL-36

**Location:** In the middle of the gluteal fold.

#### O BL-53

**Location:** At the level of the 2nd sacral foramen, 1.5 Cun lateral to acupoint BL-28.

#### O BL-54

**Location:** At the level of the 4th sacral foramen, 3 Cun lateral to the sacral hiatus.

#### GB-30

**Location:** On the lateral side of the hip joint, on the line connecting the greater trochanter and the sacral hiatus, between the outer and middle third.

**Origin:** Ala of the ilium between the anterior and posterior gluteal lines.

Insertion: Greater trochanter of femur.

**Innervation:** Superior gluteal nerve (L4 to S1).

**Action:** Abducts the leg in the hip joint. Stabilizes the pelvis on the side of the supporting leg, contributes to medial rotation of the unsupporting leg.

# Trigger Points of the Gluteus Medius Muscle

Trigger points are found along the entire muscle. They develop especially because of strain caused by sports or work, but also after accidents. Dysfunction of the sacroiliac joint is frequently observed.

#### **Examination of Trigger Points**

When the hip joint is flexed by 90° and adducted, direct palpation usually provokes the trigger points. The same position is used for stretching the shortened muscle groups during follow-up treatment.

Targeted intramuscular stimulation with subsequent passive follow-up treatment by stretching the muscle is very effective here. Manual therapy, including adjustment of the affected sacroiliac joint, should be performed concurrently. Alternatively, conventional needling or therapeutic local anesthesia may be used.







# Trigger Points and Areas of Pain Projection

# ▲ Gluteus Medius Muscle, Trigger Point 1

It lies in the posterior portion of the gluteus medius muscle near the posterior superior iliac spine and leads to radiation of pain around the sacroiliac joint.



# ▲ Gluteus Medius Muscle, Trigger Point 2

It lies in the middle of the gluteus medius muscle and leads to radiation of pain in the gluteal region and into the greater trochanter.

# ▲ Gluteus Medius Muscle, Trigger Point 3

It lies on the anterior border of the muscle and leads to the characteristic radiation of pain into the ipsilateral sacroiliac joint.





# Important Acupuncture Points and their Localizations

#### **EX-B-6**

**Location:** Below the inferior border of the spinous process of vertebra L4 and 3 Cun lateral to the posterior midline.

#### **EX-B-7**

**Location:** 3.5 Cun lateral to the inferior border of the spinous process of vertebra L4.

#### O BL-53

**Location:** At the level of the second sacral foramen, 1.5 Cun lateral to acupoint BL-28.

# O BL-54

**Location:** 3 Cun lateral to the sacral hiatus at the level of the fourth sacral foramen.

#### **GB-30**

**Location:** On the lateral side of the hip, one-third of the distance between the greater trochanter and the sacral hiatus. In China, this acupoint is always needled with the patient in a lateral position. The hip and knee of the side to be treated are flexed, while the leg beneath is straight. This position prevents the sciatic nerve from being injured.

**Origin:** Ala of the ilium between the anterior and posterior lines.

Insertion: Greater trochanter of femur.

**Innervation:** Superior gluteal nerve (L4 to S1).

Action: When fully contracted, the muscle abducts the thigh. With only the anterior portion of the muscle contracted, it rotates the unsupporting leg medially; with only the posterior portion contracted, it rotates the unsupporting leg laterally and extends it slightly. Contraction on the side of the supporting leg causes stabilization of the pelvis.

## Trigger Points of the Gluteus Minimus Muscle

#### **Preliminary Remarks**

These trigger points develop quite frequently in combination with those of the gluteus medius. The causes are similar.

#### **Examination of Trigger Points**

The gluteus minimus muscle can only be palpated when the gluteus medius muscle is relaxed; the origin of the gluteus medius is further proximal and superficial. With the patient in the lateral position, palpation is performed with the hip joint flexed by 90° and abducted.

#### Therapy of Trigger Points

As with the gluteus medius muscle, direct methods such as intramuscular stimulation by dry-needling are very effective, when followed by passive stretching with the hip joint flexed and abducted by 90°. Therapeutic local anesthesia or conventional needling are also an option. Patients should be advised to do the stretching of the muscle on their own.







# BL-53 BL-54 GB-30

# Trigger Points and Areas of Pain Projection

# ▲ Gluteus Minimus Muscle, Trigger Point 1

It lies in the anterior portion of the muscle. It leads to radiation of pain into the posterior gluteal region or along the iliotibial tract across the knee down to the lateral ankle.

# ▲ Gluteus Minimus Muscle, Trigger Point 2

This trigger point lies in the medial or posterior portion of the muscle. It leads to radiation of pain into the posterior gluteal region and posterolateral thigh down to the posterolateral calf, approximately at the level of the lateral head of the gastrocnemius muscle.

# Important Acupuncture Points and their Localizations

# O BL-53

**Location:** At the level of the second sacral foramen, 1.5 Cun lateral to acupoint BL-28.

# O BL-54

**Location:** 3 Cun lateral to the sacral hiatus at the level of the fourth sacral foramen.

# GB-30

**Location:** On the lateral side of the hip, one-third of the distance between the greater trochanter and the sacral hiatus. In China, this acupoint is always needled with the patient in a lateral position. The hip and knee of the side to be treated are flexed, while the leg beneath is straight. This position prevents the sciatic nerve from being injured.

Origin: Anterior surface of the sacrum.

**Insertion:** Tip of greater trochanter of femur.

Innervation: Sacral plexus (L5 to S2).

**Action:** Abducts the thigh and rotates it laterally.

**Miscellaneous:** In case of early division of the sciatic nerve, the common fibular nerve passes across the piriformis muscle and can be constricted here (piriformis syndrome).

#### **Trigger Points of the Piriformis Muscle**

#### **Preliminary Remarks**

The two trigger points of the piriformis muscle are often associated with chronic pain in the region of the loin, pelvis, and hip. They are activated by chronic disorders of the lumbosacral transition but only rarely as a reaction to acute strain. In cases where the muscle is shortened, entrapment of the sciatic nerve (especially of the peroneal portion) takes place in approximately 10% of cases due to the aberrant course of the muscle: this should be considered in the differential diagnosis. Active associated trigger points of the inferior and superior gemellus muscles and of the obturator internus muscle appear regularly, as do those of the gluteus medius and gluteus maximus muscles.



#### **Examination of Trigger Points**

Activation of trigger points is achieved by adducting the hip joint when flexed at 90° and simultaneously counter-rotating the remaining part of the spinal column. With the patient lying on his/her stomach, the piriformis muscle can be grasped by careful deep palpation between dorsal trochanter and sacrum.

#### Therapy of Trigger Points

Inactivation is possible by conventional acupuncture and dry-needling, and also by therapeutic local anesthesia. Passive stretching supported by postisometric relaxation decisively contributes to the success of treatment.



# Trigger Points and Areas of Pain Projection

# Piriformis Muscle, Trigger Points 1 and 2

Trigger point 1 lies close to the insertion and has its main area of pain projection dorsal to the greater trochanter. By contrast, trigger point 2 lies close to the origin and has its projection area at the caudal pole of the sacroiliac joint. Both points share a common area of radiation over and beyond the buttocks into the dorsal thigh.



# Important Acupuncture Points and Their Localizations

# OBL-54

**Location:** 3 Cun lateral to the sacral hiatus at the level of the 4th sacral foramen.

# **GB-30**

**Location:** Lateral side of the hip on the line connecting the greater trochanter and the sacral hiatus, between the outer and the middle third.



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