

# Particularities of Using the Point Massage in the Aspect of Kinesiological Competence of Physical Therapist

## Cechy charakterystyczne stosowania masażu punktowego w aspekcie kompetencji kinezyjologicznych fizjoterapeuty

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**Volodymyr V. Cherniakov, Volodymyr O. Zaitsev, Yurii L. Maidikov, Viacheslav I. Tytarenko**

Chernihiv Polytechnic National University, Chernihiv, Ukraine

### SUMMARY

**Aim:** The study was aimed at revealing the essence of the mechanism of finger acupressure, techniques of finger point massage and particularities of their implementation in physical therapy.

**Materials and Methods:** Implementation of the aims was achieved with following methods: analysis of special psychological and pedagogical literature; generalization of experience in professional training of future specialists in the field of physical therapy; synthesis, generalization, systematization and modeling were used to improve the technique of point massage in the process of physical therapy.

**Conclusions:** Using of finger point massage techniques in the process of physical therapy is a powerful tool to be implemented into patient's rehabilitation program, aimed at functional recovery. Identified relevance and effectiveness of its using to stimulate restorative processes in the patient's body, allows to accelerate recovery and restoration of functional abilities. The combination of finger point massage and physical therapy can be used as an independent complex therapeutic method in physical rehabilitation in patients with various diseases' nosologies. It was determined that effectiveness of functional recovery in patient is increased with the simultaneous implementation of finger point massage and physical therapy.

**Key words:** physical therapy, competence, massage, method

**Słowa kluczowe:** fizjoterapia, kompetencja, masaż, metoda

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### INTRODUCTION

Globalization processes constantly set new challenges to the health care of Ukraine. Overcoming them involves training of qualified specialists in various fields, in particular, specialists of physical therapy. Focusing on the public values of the world community, in context of ensuring the priorities of the future world order, requires higher professional education to implement the components of holistic educational space, the main feature of which is provision of professional training in physical therapy specialists [1, 2]. A modern physical therapist should be able to be a multifunctionally specialist, able to apply the acquired skills and knowledge, show creative approaches to performing professional duties in real professional practice, and, particularly, to master and implement point massage techniques.

Thus, in context of reforming higher education system, the problem of training physical therapy specialists with high level of professional competence, in particular kinesiological, is relevant. This significantly increases the requirements

for the educational process in higher education institutions and for level of professional training of future specialists in physical therapy [1, 3]; formation of kinesiological competence should be considered as a strategic task of their professional training.

### AIM

The aim of the article is to highlight the particularities of using point massage in patients, to unveil the mechanism of finger acupressure and finger point massage in the process of physical therapy.

### MATERIALS AND METHODS

Implementation of the aim was achieved with following methods: analysis of special psychological and pedagogical literature; generalization of experience in professional training of future specialists of physical therapy; synthesis, generalization, systematization and modeling were used to improve the technique of point massage in the process of physical therapy.

## REVIEW AND DISCUSSION

In the world of modern scientific and pedagogical researches, the competence of a specialist in physical therapy is considered as a set of skills, specially structured scientific and practical knowledge aimed at effective solving of rehabilitation problems. Effective solving of problems in physical therapy involves a variety of means, among which massage possesses an important role [1, 4, 5].

In all times of human history, medical specialists have been using different types of massage. Over centuries, accumulation of invaluable experience, acquisition and improvement of massage techniques, systematization of massage manipulations ensured the creation of certain systems that have been effectively used and applied up to the current moment. The main methods of massage have been known for more than 20 centuries BC, as evidenced by various historical documents and monuments that survived to the present day [6, 7].

Nowadays, the method of point massage (acupressure) is developing widely. The essence of acupressure is based on the experience gained in acupuncture, and is used for pressing acupuncture points. Finger point massage is biologically effective method among other physical therapy means, using of which has its own rules, indications and contraindications. Acupressure, in harmonious combination with means of physical therapy, allows to obtain positive results in therapeutic effects of treatment of functional disorders of nervous system, seas sickness, toxicosis in pregnant women, toothache, migraine, angina, bronchial asthma and other painful manifestations, except for serious and complex diseases [8-10].

Also, acupressure techniques with appropriate training of the patient can be used by him alone to relieve some acute conditions or additionally to the main treatment prescribed by physical therapist.

According to the modern biophysiological studies of the body cell as a whole, the mechanism of finger acupressure is complex of mutual reflex, neurohumoral and neuroendocrine processes that are formed by mechanical influence on acupuncture areas and are regulated, depending on acupressure methods, by central nervous system [5, 10, 11].

The initial link in the chain of neuro-reflective reactions awakened by acupressure are mechanical stimuli of extra- and proprioceptors, especially baroreceptors, resulting in transforming external energy into an impulse or encoding a transmitted stimulus. Various pieces of information, coming from the body receptors or external environment enter the nervous system in only one form – as an impulse. All receptors send about ten impulses per sec to the central nervous system, and they come not only from the internal organs, muscles, skin, but also from the exteroceptors, that is, from everything that happens outside the body. This huge system of impulses enters thalamus, and from there, with the help of cerebral cortex, one of the most important and vital parts, the response is formed, then realized through specific neuro-reflex, vegetative-vascular, lymphatic and neurohumoral mechanisms. In other words, the central nervous system has one efferent main motor path, through

which the flow of motor formulas is passing to all systems of the body [11].

The essence of finger point massage when combined with physical therapy means is in rhythmic massage of acupuncture areas with fingers. It is important to distinguish between finger massage acupuncture method and general massage techniques. At the same time, when implementing a rehabilitation program in order to achieve a better result, it is advisable for a physical therapist to combine point massage methods with individual techniques of general therapeutic massage.

Affecting the acupuncture areas, when performing acupuncture techniques, the physical therapist most clearly feels (with the soft pad of the first finger phalanx) the tone of the object of influence, the integrity of the applied force. At the same time, it is impractical to perform point massage techniques with nails, since there is a high probability of injuring the skin and causing needless pain.

There are various techniques of point massage. However, the type of their implementation makes a more differentiated dosage of massage possible, and, thus, resulting a regulating effect on body functions. Depending on the purpose of the massage one can combine a variety of options: circular stroking, varying degrees of pressing, vibration. They are used, taking into account the initial state of the patient, expressiveness and features of the pathological process; they are corrected according to the reactions of the body. For example, in case of arthritis of knee joint, the method of palpation determines the sore areas; in the future they are massaged with medium power pressing to reach the connective tissue or periosteum. Such massage is effective in treatment of diseases of the periosteum or connective tissue at the site of attachment to tendons, diseases of bones and joints. It should be noted that finger massage acts reflexively on the physiological and pathological processes of internal organs by pressing and vibrating on acupuncture areas in periosteum area, that is, on the periosteum. After massaging the sore areas around the knee joint, finger massage is made with light pressure and vibration in the areas of acupuncture points.

The method of finger massage of acupuncture areas has a number of advantages: 1) it is easier to learn finger massage than acupuncture; 2) finger “zheng” does not require special devices, tools or disinfectants; 3) hygienic requirements for medical procedures are minimal; 4) the treatment procedure can be carried out outpatiently and in any non-hospital conditions (on the street, in transport, in industrial premises); 5) the effectiveness and strength of therapeutic effects in finger “zheng” done by experienced physical therapist is the same as in acupuncture; 6) finger “zheng” is very convenient for emergency care, as well as for self-medication of certain diseases after training done by physical therapist; it can be used to relieve fatigue and facilitate recovery.

Experience of practical using shows that point massage techniques are more effective when combined with physical therapy. The highest efficiency is achieved in treatment of fibromyositis, muscle and tendon diseases.

Massage by finger acupressure method is advisable at all stages of physical therapy in patients: during recreational

treatment of chronic diseases of the circulatory system, nervous system, musculoskeletal system, internal organs and other functional disorders. The methods of acupressure during the implementation of the rehabilitation program are used primarily as means of primary and secondary prevention, for rebuilding and for relieving the physical fatigue. Finger point massage has a positive effect for both adults and children aged from one year.

Using finger point massage techniques during physical therapy is contraindicated in following cases:

- postoperative period: with bleeding, common allergic reactions;
- neuroses combined with affective bursts out, OCD, fever attacks;
- skin diseases: fungal diseases of the nails, skin, keratomycoses, epidermomycoses, viral dermatoses;
- state of acute mental disorder and alcohol or drug intoxication.

For effective performing of the finger massage on acupuncture areas during physical therapy, and in case of general massage, a physical therapist has to know the anatomy and physiology of a person. Otherwise, ignorance of the topography of muscles, blood vessels and lymphatic systems will not allow innervation to be effective.

Physical therapist should keep the cleanliness of his hands and nails when performing point massage techniques. Hands should be warm, dry, with short-cut nails, strong and trained. The work of the fingertips provides emotional stability and health to the physical therapist, since the blood flow to the hands is stimulated. Using of means that have a strong odor is unacceptable. It is important to wipe hands with clean and denatured alcohol, monitor the appearance of fissures on fingers and palms. The physical therapist can not wear any jewelry on hands so as not to injure the patient's skin.

During implementation of point massage techniques, physical therapist should know about general state of the patient; change positions, if possible; do not bend low to the patient; monitor the rhythm of patient's breath; do not force patient to hold it and allow him or her to take a few deep inhales and exhales during breaks. In order to improve professional skills, it is important to devote time for exercising that contributes to the development of deep and rhythmic breathing, endurance, accuracy in movements.

While performing a finger point massage, physical therapist should be able to distribute his forces during the session and work equally with both right and left hand. He needs flexible, soft and strong fingers without calluses, with good mobility in the radial wrist joint and fingers and well-developed musculature of hands. To develop these qualities, one should systematically do special gymnastics, which increases mobility of fingers and hands. It is also necessary to carry out everyday hand care, in order to develop a high sensitivity of touch.

When performing a finger acupressure, one should choose a position in which any possibility of fatigue, due to the static tension of the muscles that are not used in the work, is excluded.

Before performing a massage, therapist should pay attention to important condition of cleanliness of the patient's skin. Point massage on dirty skin promotes penetration of bacteria into the lymphatic pathways. In this case, physical therapist has right to refuse to perform the procedure. At the same time, doctor should notice if the nearest lymph nodes are enlarged. Therefore, before starting a massage, physical therapist should examine the patient and, if any problem is present, refer him for an additional examination. Only after the diagnosis is cleared, physical therapist decides on implementation of point massage.

Physical therapist can give recommendations on implementation of point massage in patient at home, teach him how to determine and massage acupuncture areas to treat certain disease. The patient can systematically conduct finger massage procedures at home and occasionally receive corrective consultations from the physical therapist.

The technique of finger point massage of acupuncture areas consists of three main moves: 1) stroking; 2) loosening (rubbing) with pressing; 3) vibration. In addition, one may also use additional methods of general therapeutic massage.

Experience of acupressure in physical therapy involves complex using of massage techniques. To achieve the desired effect in the process of physical therapy, the patient is consistently treated with stroking, then loosening with pressure, vibration and, finally, with a gentle rubbing.

Skills of choosing and rational combination of massage techniques in accordance with clinical indications are acquired by physical therapist as a result of long experience and characterize his individual style.

Point massage techniques are carried out with thumb, index and medium, sometimes with a small finger. Stroking is done with index, middle or small fingers; loosening with pressing – with thumb, index and middle fingers, vibration with pressing is done with index, middle and small fingers.

The essence of stroking move is in slow sliding of digital pulp over the skin with rotational circular movements in the acupuncture area, without skin irritation.

As an auxiliary method, one can use stroking moves with the palm surface of the hands on the entire segment or part of the body. This improves dermal respiration and activates secretory function of the skin, enhances capillary circulation due to backup capillaries, enhances lymph formation, potentiates active tissue metabolism.

When stroking the hair part of the head as an auxiliary method, a rake-like technique is used. Wide spread fingers (pads of the fingertips) are located under the hair on the scalp; the longitudinal, zigzag and circular movements of stroking without irritating the skin of the head are performed. The movements are slow, rhythmic. Then one may apply the method of rubbing with pressure or vibration.

Rubbing is carried out continuously, more intensive than stroking. Rubbing with pressing can be done with palm surface of the final phalanx (of thumb, index or medium fingers), and the wrist of the index or middle finger should lean on the thumb. If a more energetic effect on the tissue of

the acupuncture area is needed, rubbing is carried out with thumb, with leaning on the other fingers.

According to the pressure on the points of acupressure, which are used in physical therapy, there are three types of massage moves: 1) light circular; 2) massage of medium power; 3) strong pressing.

Light massage of the acupuncture area should be done quickly, with superficial and light pressing with pads of the fingers (but not with the thumb), while making moves resembling centrifugal concentric spirals or in the circle of the area. Light circular rubbing is used for treatment of acute pain, swelling of tissues, muscle weakness, in first aid. In cases of high pressure, postoperative period, with hidden organic pain, it is necessary to provide massage with well and easy circular movements.

Massage of medium power on acupuncture areas is performed by rotational, centrifugal or circular movements: initially slow with low static pressure, which gradually increases, accelerating the rotation rate. Then therapist moves to slower rotational and light surface movements. Medium power massage is indicated in case of the absence of organic complications, chronic diseases, and good general state. The duration of exposure, amplitude, rhythm and frequency of rotational movements and the number of points of influence depend on the nature of the painful process and tasks of physical therapy. The rotational speed averages 60-120 turns per minute with an increasing pressure force about 1.5 kg. Pressing should last within 1-5 minutes. This method can be used to relieve fatigue, increase skin and muscle tone, as well as in cases of central hemiparesis and often occurring swelling.

Massage with strong pressure on acupuncture areas is carried out with a thumb or index fingers in case of pain in a patient with no other complaints. After determining the point, the doctor has to put finger-pad on it and make 2-3 circle moves per second with a pressure of 3-5 kg. It is not always advisable to start the procedure by stroking the impact area. At the same time, only the skin near muscles, bones can be moved in the process of massage. The massaging finger always remains at the selected point, which provides a unified effect on the acupuncture point. This is an important prerequisite for the onset. Most of the acupressure points are located on both sides of the body. The duration of acupressure is determined by the degree of pain, the point of treatment and the rule of the hand. Pressing should last from 1 to 5 minutes. Relief comes in 20 seconds.

Push-like pressure that resembles hitting are not allowed. One should make a gradual hard pressure with soft parts of fingers, as if the weight of the whole body is transferred to them. The area of contact between the pressing thumb and body of the patient should be approximately the size of the soft part of the finger (as a fingerprint).

The meaning of pressure vibration is transmitting of vibrational movements to the massaged body part. The effect of vibration is not limited to the place of irritation. The effect can spread along the periphery, as well as inside, causing a variety of appropriate reactions.

Vibrating finger massage on the acupuncture area is that the finger (thumb, index or medium), without moving away from the massaged area (point), makes various oscillating movements, which should be performed rhythmically, with controlled pressing – slight, moderate, strong.

Performing a vibrational massage with the palm surface of the final phalanx of one finger, the physical therapist should feel that his hand and massaged patient's body area become as one for some time.

Vibration with the index or middle fingers is more often carried out when exposed to acupuncture points in the area of the head, face (for example, at the exit point of the supraorbital, mental nerves, etc.). Vibration with the thumb or middle finger is performed in the back area near the exit of nerve roots, as well as in places with more developed muscles and thick fat deposits.

Physical therapist in the framework of kinesiological competence has to be able to rationally apply the principles of choosing acupuncture points. After preparation of the rehabilitation program through palpation, points, located closer to the sore area, are determined. Then one determines the points at more distant places, according to the segment. It is important to distinguish and take into account three degrees of acupuncture point activity:

- Inactive: after strong finger pressure there is no pain occurring;
- Active: after mild pressure the feeling of pain occurs;
- very active: the pain (sometimes severe) or itching occurs after pressure above the point.

Thus, having discovered the degree of activity of the acupuncture point, physical therapist rationally and effectively applies the methods and techniques of finger point massage. It is important to note that the impact on acupuncture points in many diseases leads to disappearance of their manifestations.

Physical therapist has to remember that all massage techniques are based on reflex acts. Nerve receptors of the skin and deep tissues, perceiving signals from certain methods of massage as a mechanical stimulus, transmit them in the form of nerve impulses to the central parts of the nervous system, where in response to irritation of the nerve cells, efferent impulses arise. They then spread along the central paths to various systems, organs and tissues of the body, stimulating or inhibiting their activity.

Based on the mechanism of physiological influence of point massage and many years of practical experience, the most appropriate in physical therapy are techniques of acupressure (stroking, rubbing with pressure, vibration) conducted through brake and toning methods.

The brake method consists of rubbing techniques with strong pressure and vibrating massage. It is performed with soft part of the palm surface with thumb, index or middle fingers in slow, long and deep pressing or vibration with simultaneous rotational circular movements in the acupuncture area. Up to 8 points can be massaged like this per session. The duration of impact at each point is about 2-3 minutes. In general, the duration of the massage depends on the goal, more often - on the rate of pain elimination, relaxation of muscles, etc.

The tonic method involves the stroking, light and moderate rubbing moves with pressure in the massaged areas. They are carried out by fast, superficial, short movements, light or medium pressing with soft part of the fingertips (except for thumbs), while making rotational circular movements 100-120 per minute. The pressing is repeated every 5-10 seconds. The total duration of effect at each point should be 1.5-2 minutes. During one physical therapy session, 8-10 points are massaged.

In the process of physical therapy, techniques or methods of finger point massage for each particular case, depending on the characteristics of the patient and nosology of disease, are used. The effective duration of one pressing is from 5 to 7 sec, except for areas around neck, where the pressure should not exceed 3 sec. The pressure should be soft and perpendicular to the surface. Thumbs are always used to press down with pads. Pressure on the point should be such that the patient has a "special feeling", yet, pain should be quite tolerant. In some cases, severe pain can be extremely pleasant. This indicates that with a certain violation (symptoms, disease), the desired point was found and the optimal intensity of the pressing was provided.

Prospects for further research on the use of finger point massage techniques in the process of physical therapy in patients are in establishing the assessment of differentiated effects in the implementation of the rehabilitation program for individual nosologies of diseases.

## CONCLUSIONS

In our opinion, using of finger point massage techniques as a component of kinesiological competence in the process of physical therapy is a powerful tool in implementation of the patient's rehabilitation program aimed at functional recovery.

Expediency and effectiveness of this method in stimulation of restorative processes in the patient's body have been identified. It allows to accelerate functional recovery.

The combination of point massage and physical therapy can be used as an independent complex therapeutic method of physical rehabilitation in patients with various nosologies of diseases. It is shown that the effectiveness of restoring the functional state of the patient is increased after simultaneous implementation of finger point massage and physical therapy.

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### ADDRESS FOR CORRESPONDENCE:

#### Volodymyr V. Cherniakov

Chernihiv Polytechnic National University  
95 Shevchenko St., 14035 Chernihiv, Ukraine  
phone: +380975364238  
e-mail: chern-volod@ukr.net

### ORCID ID and AUTHORS CONTRIBUTION

0000-0002-3344-7648 – Volodymyr V. Cherniakov (A, B, D)  
0000-0003-1176-4623 – Volodymyr O. Zaitsev (A, D)  
0000-0002-7724-2628 – Yurii L. Maidikov (D, E, F)  
0000-0002-3679-2471 – Viacheslav I. Tytarenko (B, D)

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A – Research concept and design, B – Collection and/or assembly of data, C – Data analysis and interpretation, D – Writing the article, E – Critical review of the article, F – Final approval of article