

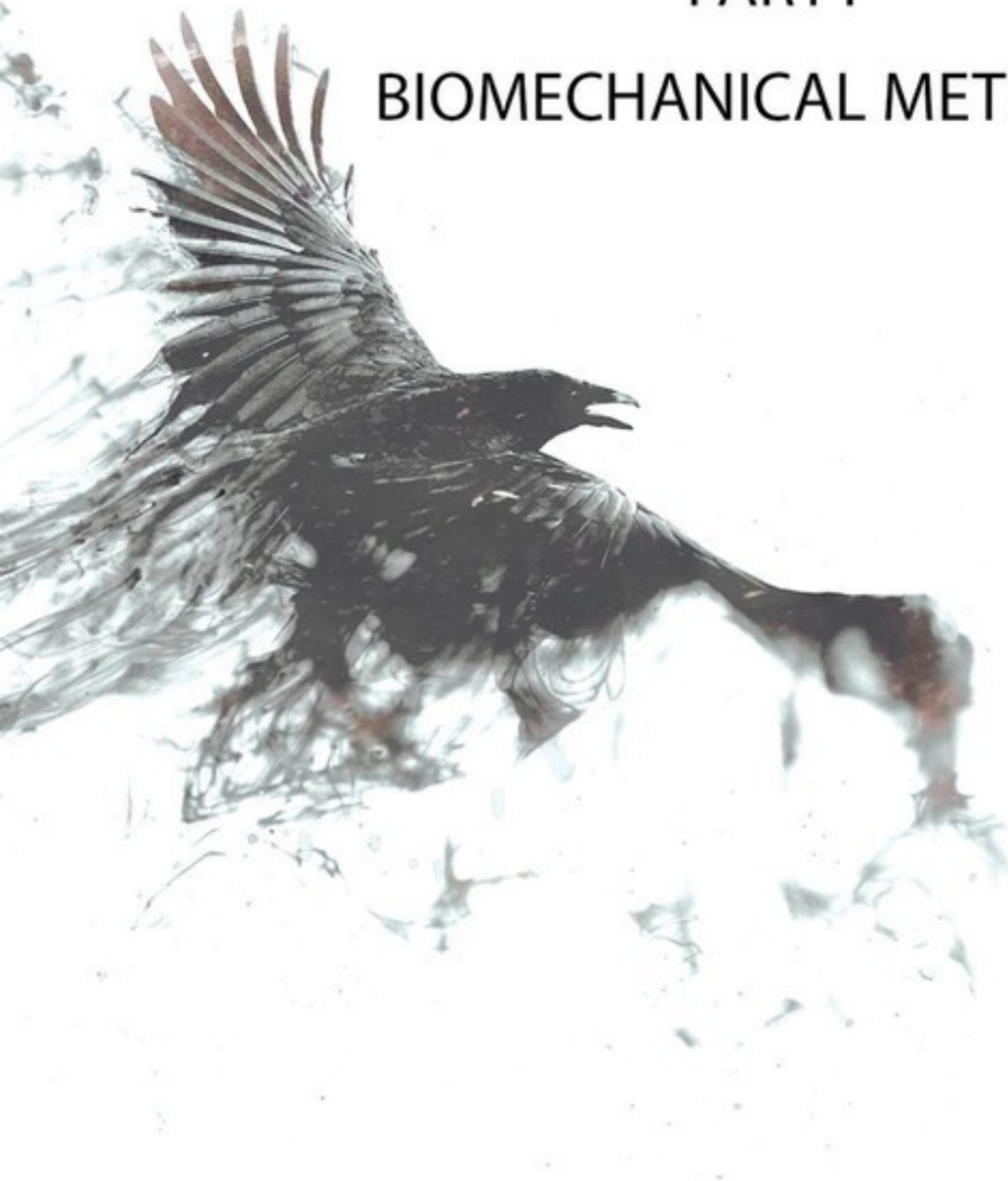
TEACHING AND METHODOLOGICAL MANUAL ON OSTEOPATHY

I. A. Aptekar

**THE PRINCIPLES AND METHODS
OF OSTEOPATHY**

PART 1

BIOMECHANICAL METHODS



I. A. Aptekar

**The Principles and Methods
of Osteopathy. Part 1.
Biomechanical Methods**

«Издательские решения»

Aptekar I. A.

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Teaching and Methodical Manual gives an idea of basic principles of systemic approach in Osteopathy. It describes the methods of Osteopathy, their integrity and sequence of study. Features of the biomechanical method in Osteopathy are revealed in detail. Attention is paid to BLT as a transitional therapeutic model between biomechanical and functional methods. Teaching manual performs informational, teaching and monitoring functions. It's intended for students and doctors — osteopaths.

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The Principles and Methods of Osteopathy

Part 1. Biomechanical Methods

I. A. Aptekar

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*Osteopathy is an art that allows, using the
power of the Spirit, the Body and Mind, using your hands, to launch a therapeutic process
under the guidance of Health.*

...Unknown osteopathy...

This book is dedicated to James S. Jealous D.O., my teacher...

Preface

Osteopathy is based on understanding of integrity and unity of man and nature of which it is an integral part.

Internal filling of Osteopathy as an art and science depends on spiritual basis of the doctor – osteopath, the level of perception, the used model of the description of the world and the actual angle of “vision” in the process of perception. Especially in the cases when we think that we perceive integrity.

Often, our perception is directly dependent on which side we are looking at and which part we are holding on to. Just like in the known story about an elephant and blind sages.

Abbreviation DO is often decoded by many osteopaths not only as “doctor of osteopathy” but also as the motto Dig On. This is a direct call not to stop studying osteopathy, even when it seems that everything has already been studied, known and mastered.

The process of teaching Osteopathy as other types of human activities is universal. We go from unconscious ignorance and inability to unconscious knowledge and ability. We go through the stages of conscious ignorance and conscious actions until knowledge and ability are fixed on the reflex level.

Formation of professional competencies occur gradually being fixed at the level of reflexes and unconscious knowledge. No matter what we study – martial arts, dancing, singing, computer work, cooking steak – we go through one and the same stages. Any motional act is comprehended gradually in the process of constant mastery of the skill.

Originally we study principles and methods, and then go to the techniques and simple movements. We repeat them after our teachers trying not to miss anything. Copying their movements are repeated many times each, trying to achieve the sensations they are talking about, and the results we see watching their work.

This process continues for a long time. However much we would like to accelerate, we are still moving at the same speed as we are capable of. And consistently go through all the stages of studying and acquiring practical skills, developing both palpation and perception.

Starting basic training in the osteopathic school we think we’ll be able to quickly master osteopathy within 4 years. But it takes a lot longer before we realize that we are still at the beginning of the journey. Then we master methods and techniques seeking their perfect fulfillment, or we think we’ve already mastered them. At some point in learning and development there is a feeling that we can bring something of yourself into approaches and osteopathic techniques. And the techniques become personified, personal. We even begin to consider ourselves pioneers of something new and already see our images in the same row as the founding fathers of osteopathy.

Schools appear, new techniques are described, new words and word- combinations are uttered, and new meanings are formed. And only principles and methods remain unchanged. The principles of restoring the integrity of the human organism with the help of hands.

And three methods of osteopathy:

– **Biomechanical**, with its axial model of motion description and therapeutic force coming from the doctor – osteopath;

– **Functional**, in which the therapeutic force is the global functions of the whole body manifested in the form of global endogenous rhythms, whose action is aimed at achieving integrity and synchronic anatomical molecular and electromagnetic unity of the human body;

– **Biodynamic**, based on the principle of the unity of man and the world around him, with its therapeutic force coming from the outside and manifesting itself in the form of exogenous (ecological) rhythms; the Force having Intellect; Potency that heals unerringly; and Health always present.

All three methods exist simultaneously and represent a single and indivisible integrity. The choice of this or that method is determined by the diagnosis and depends on the effectiveness

of “the dialogue” with the body and tissues. Division into methods is nominal and applies only to the period of basic training of osteopathy.

Consecutive study of the biomechanical method allows you to prepare a theoretical and practical basis for mastering the functional method. What, in turn, forms the basis for studying the biodynamic method.

But over time we suddenly realize and feel that in fact, osteopathy – it’s neither even the principles and methods of therapy nor the individual techniques. This is a way of life based primarily on spirituality and love for people. Otherwise, the system does not work.

And one day there comes a time when we no longer think about what kind of osteopathic help to apply in this or that case.

We just try to be:

- the most useful;
- neutral and calm;
- loving and benevolent;
- humble;
- respecting the wisdom of nature and the human body.

Of course, if after a session of osteopathic care you are asked what it was, then you will no doubt give an exhaustive answer about the osteopathic diagnosis, primary somatic dysfunction, therapeutic process, its sequence and end phase, up to the global rebalance.

At some point we find that **the whole, having achieved neutrality and calmness, can easily restore any part of itself**. While the part will never restore the whole. She simply does not enough potency for this. At this level of our life anatomy of the parts becomes less significant compared with anatomy of the whole.

Only continuously studying and developing osteopathy as art and science one can be the most useful and effective.

The world around us is a mirror which reflects our internal state. And if we want to change the environment we need to start with ourselves. It is for this reason that the osteopaths are in constant development, cognition of themselves, and the world around them. In medical practice the areas of application in osteopathy are limited only by the professionalism of the doctor – osteopath.

Aptekar I.

...There is a claim that is on June 22, 1874, at the age of 46,

A.T. Still publicly formulated the three main principles of his philosophy and thereby derived the formula of osteopathy:

- The Structure controls the function.*
- The Body is a single whole.*
- The Body has mechanisms of self-regulation and self-healing...*

Osteopathy was discovered by Dr. Still. He did not claim to have created it. He came to understand that osteopathy is a word used to describe the laws of nature, placed in a person before his birth. These laws, known and unknown, are what we call Osteopathy.

James S. Jealous D. O.

Chapter 1 Osteopathic Activity

The Subject of the osteopathic activity is the restoration of the integrity of the human body with the help of hands.

Osteopathy (osteopathic medicine) is practical philosophy, science and art.

Speaking about the definition of osteopathy it should be noted that the following formulation, which is reflected in the clinical recommendations approved by the professional association of osteopaths “RoSA”, is now generally accepted.

Osteopathy is a holistic manual medical system of prevention, diagnostics, treatment and rehabilitation of somatic dysfunction consequences that entail health disorders, aimed at restoring the natural abilities of the body to self-correction.

Specific object of the therapeutic effect of a doctor – osteopath is somatic dysfunction.

The basis of osteopathy is fundamental sciences such as anatomy of the living body, embryology, biochemistry, physics, biomechanics, neurophysiology and many others. And when there are questions about the evidence base of osteopathy, we understand that the answers lie in the study of the above sciences and their laws.

Moreover, in the process of studying osteopathy, we must remember that the people who discovered it were deeply religious and spiritual. Osteopathy is now integrated into official medicine. In the process of integration, it is necessary to minimize risks of simplification and emasculation of the substantive part of osteopathy, to preserve its integrity.

Osteopathy evolves evolutionally on the basis of a holistic, predictive, personally oriented system of maintaining human health, as well as diagnosis, prevention and treatment of somatic dysfunctions, leading to a violation of the body’s ability to self-correction and self-recovery.

Osteopathy is not divided into parts. Crushing on the cranial, structural and visceral sections of osteopathy is appropriate only in the process of basic training.

Narrow specialization in the form of cranial, visceral and structural osteopaths leads to a violation of the integrity of osteopathy and distortion of osteopathic activity. Osteopathy is indivisible system. We study principles and methods, anatomy and biomechanics of a living body, fundamental sciences that lie at the basis in order to unite the separate parts into practical, integrated system of diagnostics and therapy, which we call osteopathy.

In the first years of training in the osteopathic school all our attention is focused on the biomechanical method and palpation with the principles (basics) of perception. In the future, we develop perception and master the functional method.

And only when the first two methods are mastered, their application becomes an integral part of the work of the osteopath. And he learned to perceive not only the manifestations of endogenous functions but also exogenous (ecological) rhythms, you can go to the third method of osteopathy – biodynamic.

Thus, the task of the biomechanical method is the restoration of the biomechanical unity of the organism; the functional method allows you to restore functional unity, and unity of the organism and biosphere of our planet is restored with the help of the biodynamic method.

Understanding this process is the basis of training osteopath physician throughout his life.

Health and somatic dysfunction

Health, according to the definition of the World Health Organization (WHO), is the state of complete physical, mental and social well-being and not merely the absence of diseases and infirmity.

On the other hand, according to WHO, from the point of view of health statistics, health is understood as the absence of identified disorders and diseases, and at the population level – the process of reducing the process of mortality, morbidity and disability.

In both cases, health is considered a condition in which there is no disease (or diseases).

For doctors – osteopaths, health has its manifestations for manual palpation and perceptive diagnostics. Osteopaths determine health not by the absence of disease, but by its manifestations.

It is for this reason that Sill's assertion "... an osteopath is looking for health..., every person can find a disease..." is filled with practical meaning for Osteopaths.

The official health care system has now focused on finding and effective prevention of diseases. Perhaps, for this reason, "somatic dysfunction" has been distinguished by osteopaths as an anatomic morphological substrate, some health manifestation, of self-correction and self-restoration; mechanisms of adaptation that are implemented to maintain homeostasis at the stage before the onset of the disease, at the stage of pre-illness.

It should be noted that the definition of **somatic dysfunction** is currently still under discussion. The most commonly used definition in the clinical guidelines entitled "Osteopathic diagnosis and Somatic dysfunction" is presented below.

Somatic dysfunction is a functional disturbance manifested by biomechanical, rythmogenetic and neurodynamic components.

You can also say that it is a reversible dysfunction manifested as a violation of micro- and macro- mobility.

Another definition suggests that **somatic dysfunction is a functional disorder which** manifests itself as a complex of biomechanical, hydrodynamic and neural changes. And all these statements are true in their own way.

For a more complete understanding of the term "somatic dysfunction" it is necessary to understand what is actually meant by the words "soma" and "function". And if we use the word combination "somatic dysfunction", then it is necessary to define the concept of the "somatic function".

If **somatic dysfunction** manifests itself in a violation of the dynamic neutrality and human integrity, then **the somatic function is expressed by integrity and neutral calmness.**

Somatic dysfunction leads to desynchronization of internal processes of human vital activity and its relationships with the environment, which is resulting in a violation of the organism's adaptation manifested.

Somatic function of the person, in its turn, is manifested by dynamic mechanisms of self-organization of all body systems, ability to complete compensation and adaptation to environmental influences. The effectiveness of these processes underlies the manifestation of biological and social functions of man.

Function (*functio* – execution, fulfillment) is a phenomenon that depends on another phenomenon and changes as this other phenomenon changes.

In the case of the human body, the function is an arbitrary or involuntary reaction of the organism in response to the influence of the external environment. This response is an adaptation to maintain the constancy of the internal environment. This is an adaptation. Violation of function is nothing but a violation of adaptation, as a result of which the system of maintaining of homeostasis can be broken.

Thus, **functional impairment** is a violation of the mechanism of adaptation in the process of vital activity of the organism in the changing external environment. The causes of any functional disorder lie outside the affected organ, organ system and are associated with a modified regulation of the function.

The search for the cause and its identification, the understanding of the entire pathogenic chain of the formation of somatic dysfunction should be considered not at the level of inference, but as a result of palpatory and perceptual research, a consistent study of the damage fields – both primary and secondary, that resulted from the implementation of adaptation mechanisms.

A functional disturbance, or a violation of adaptation, can be local, regional, but it is always global. And it contains all components of the homeostasis system, including neural, biomechanical and hydrodynamic.

The rhythmogenic component of dysfunction can be initiated by any of the above disorders. Naturally, this applies to the entire process of the appearance of rhythmic activity, beginning with the elaboration of rhythm, its carrying out and reaction to it from the whole body. At the same time, we must understand that the development of rhythm is not an end in itself of any function.

The purpose of the function is to adapt effectively. Functional activity has its manifestations. And with reference to the functional activity of the organism, this can be various oscillatory fluctuations of a rhythmic nature. Rhythm as a characteristic of a wave oscillation has certain parameters that allow judging the state of a function.

Thus, the view that **somatic dysfunction** is primarily is a global violation of the adaptation of the entire body, the entire soma, finds its confirmation. This is a violation of the integrity of the body. Violation of synchronous functioning of all organs and systems as a whole, and not in the form of separate anatomical formations.

That is why, speaking of **somatic dysfunction in pediatric practice**, we primarily mean **a global violation of the whole**.

For the same reason, in working with children under 3—5 years of age, we use a biomechanical method exclusively for diagnostic purposes. And the therapeutic component is in the field of the functional and biodynamic model of perception.

Knowledge of all the sections of the human's body's anatomy, physiology and biodynamics allows the doctor – osteopath not only to understand the interrelations of the whole, but also to find the causes of violations of these interrelations. And, more significantly, in these violations find elements of health and create conditions for its growth and development as a whole.

Functional impairment, or somatic dysfunction, is manifested at the biomechanical level by a change in the state of biomechanical unity; at the functional level – a violation of the synchronous implementation of functions relative to each other and relative to global body functions; at the biodynamic level – a violation of the integrity of the organism and its habitat (mother Nature), of which it is a part.

In osteopathy, it is customary to distinguish **three models of perception, or three methods: biomechanical, functional and biodynamic**.

One of the reasons for the conditional division is not so much in the level of impact on which the osteopathic physician works, but in the level of perception that he is capable at the moment.

The second, no less significant reason is that a violation of adaptation mechanisms with the subsequent formation of somatic dysfunction can occur at the level of biomechanical interactions, or at the level of functional interactions of a part with respect to the whole, or at the level of interaction of a person and the surrounding world, of which he is a part.

From the point of osteopathy, man is not a collection of parts in the form of bones and joints, fasciae, muscles, ligaments, internal organs and body fluids. This is a holistic functional unity. It is a system that is in a continuous, balanced and synchronized movement of all its parts and components.

All movements of the human body (internal and external) have qualitative and quantitative characteristics and are one of the manifestations of its functional activity. All functions of the body are aimed at maintaining homeostasis in the process of interaction with the external environment.

Global movement of the whole

On the one hand, we observe the mobility of the whole body from the point of view of the biomechanics of anatomically resolved arbitrary and involuntary movements.

On the other hand, in the process of perceptive diagnostics, the global mobility of the human body is felt as a holistic vibration of a certain force, frequency and amplitude. It can be felt under the hands.

The origin of this movement can be explained by the superposition and synchronization of local, regional and global manifestations of the functions of all parts and systems of our organism.

What we perceive at hand in the process of perception and palpation, in this case is one of the manifestations of the living integrity of the human body – the system, integral not only in relation to itself, but also in relation to the surrounding world.

What do we actually perceive in the process of the perceptive diagnostics? The manifestation of life? Mobility? Involuntary, available, present movements? Fluctuations, wave rhythms as manifestations of various functions?

Perceptually, we can “observe” that local rhythms are synchronized with respect to global endogenous rhythms. And global fluctuations of the whole body, in turn, are synchronized with respect to exogenous (ecological) rhythms.

The function of a single cell, tissue, organ, systems of organs in itself, apart from the body, has neither meaning nor sense. As it has no meaning and sense a violin without strings, a bow, a musician, who is proficient in it, and a place where he can realize his skills.

Violation of synchronicity of interaction between parts of the body leads to a **functional and biomechanical violation**. The ability of the human body to adapt to changes and to interact effectively with the surrounding world is changing.

The volume of functional mobility decreases, qualitative characteristics of arbitrary and involuntary movements change toward limiting and increasing the volume of the elastic barrier. Somatic dysfunction develops as a manifestation of the function of health.

Sanogenetic reactions of the body, aimed at maintaining homeostasis, go beyond the limits of physiological comfort, forming clinical manifestations of somatic dysfunctions. As a result, the immune and autonomic nervous systems are weakened.

Sanogenetic manifestations of their functioning, arising in the process of adaptation to changing environmental conditions, cease to be physiological, forming a pathogenetic reaction.

The body adapts but with certain losses. Accumulating, the pathophysiological reactions (adaptations) of the body require additional “attention”, additional adaptations.

Thus, secondary somatic dysfunctions are formed often with clinical manifestations. Correction of secondary somatic dysfunctions is nothing more than symptomatic therapy. Solving current problems does not remove the basic lesion, but more often significantly improves the patient's condition.

In cases when adaptation mechanisms are weakened, “internal doctors” cannot timely correct violations. Initially, there is a functional deformation, then a functional disorder. Without clinical manifestations. They appear in the future forming a disease.

Disease is a variant of adaptation of the organism to changing environmental conditions that has gone beyond the limits of the functional norm.

Disease is a manifestation of health, the struggle of the organism for its functional integrity, for survival.

Therefore, our task is not only to eliminate, if possible, the primary etiological factor of osteopathic lesion and somatic dysfunction, but also to create conditions under which self-correction of the organism and control mechanisms will function in the normal physiological mode.

Osteopathic lesion is a complex of functional reactions of the body as a response to the direct action of exogenous factors.

The lesion field is a complex of reactions of the organism in the process of its adaptation to the damaging exogenous factor. The lesion field has its own boundaries, the center (fulcrum).

Thus, somatic dysfunction is a manifestation of health in the form of physiological organism's reactions in response to osteopathic lesion.

The main role of the doctor – osteopath is manifested in many respects not only in the diagnosis and correction of osteopathic damage (lesion) and somatic dysfunctions, but also in the prevention of violation of functional unity, the vital integrity of the human body, dysfunctional changes in the immune and autonomic nervous systems. All that breaks the functional connection with the outside world of which we are a part.

The subject of studying osteopathy is human health and its adaptation to environmental changes as well as the conditions for the formation of health, its preservation and development. And in case of lesion – prevention, diagnosis, correction of functional disorders that entail a violation of health. Including we are talking about the prevention of the formation of biomechanical disorders in the form of somatic dysfunctions.

Summary

- The subject of osteopathic activity is the restoration of the integrity of the human body with the help of hands.
- Osteopathy is a holistic manual medical system of prevention, diagnostics, treatment and restoration of consequences of somatic dysfunctions entailing breach of health, aimed at restoring the natural abilities of the body to self-correction.
- The specific object of the therapeutic effect of an osteopathic physician is somatic dysfunction.
- The basis of osteopathy is the fundamental sciences.
- Osteopathy is now integrated into official medicine
- Osteopathy is an evolutionary direction of medicine
- Osteopathy is not divided into parts.
- Health, according to the definition of the World Health Organization (WHO), is the state of complete physical, mental and social well-being and not merely the absence of diseases and infirmity.
- “... An osteopath is looking for health..., every person can find a disease...”
- The official health care system has now focused on finding and effective prevention of diseases.
- The somatic function is expressed by the integrity and neutral calmness.
- Somatic dysfunction as an anatomic morphological substrate is a health manifestation, mechanisms of self-correction and self-restoration; mechanisms of adaptation that are implemented to maintain homeostasis at the stage before the onset of the disease, at the stage of pre-illness.
- Function (*functio* – execution, fulfillment) is a phenomenon that depends on another phenomenon and changes as this other phenomenon changes.
- In the case of the human body, the function is an arbitrary or involuntary reaction of the organism in response to the influence of the external environment.
- The functional impairment is a violation of the mechanism of adaptation in the process of vital activity of the organism in the changing external environment.
- A functional disturbance, or a violation of adaptation, can be local, regional, but it is always global.
- The purpose of the function is to adapt effectively
- Somatic dysfunction is primarily a global violation of the adaptation of the entire body, the entire soma, a violation of the integrity of the body.
- In working with children under 3—5 years of age, we use a biomechanical method exclusively for diagnostic purposes.
- Functional impairment, or somatic dysfunction, is manifested at the biomechanical level by a change in the state of biomechanical unity; at the functional level – a violation of the synchronous implementation of functions relative to each other and relative to global body functions; at the biodynamic level – a violation of the integrity of the organism and its habitat (mother Nature), of which it is a part.
- Somatic dysfunction is a functional impairment manifested by biomechanical, rhythmogenic and neurodynamic components.
- Three sources of osteopathy:
 - unconditional love,
 - spirituality,
 - holistic health.
- In osteopathy it is customary to distinguish three methods:

- biomechanical,
- functional,
- biodynamic.
- Functions of the human body are manifested by different rhythmic mobility.
- In the process of perceptive diagnostics, the global mobility of the human body is felt as a holistic vibration of a certain force, frequency and amplitude. It can be felt under the hands.
- Violation of synchronicity of interaction between parts of the body leads to a functional and biomechanical violation.
- Sanogenetic reactions of the body, aimed at maintaining homeostasis, go beyond the limits of physiological comfort, forming clinical manifestations of somatic dysfunctions.
- Disease is a variant of adaptation of the organism to changing environmental conditions that has gone beyond the limits of the functional norm.
- Disease is a manifestation of health, the struggle of the organism for its functional integrity, for survival.
- Osteopathic lesion is a complex of functional reactions of the body as a response to the direct action of exogenous factors.
- The lesion field is a complex of reactions of the organism in the process of its adaptation to the damaging exogenous factor. The lesion field has its own boundaries, the centre (the fulcrum).
- Somatic dysfunction is a manifestation of health in the form of physiological organism's reactions in response to osteopathic lesion.
- The main role of the doctor -osteopath is manifested in the prevention of violation of functional unity, the vital integrity of the human body, dysfunctional changes in the immune and autonomic nervous systems.
- The subject of studying osteopathy is human health and its adaptation to environmental changes as well as the conditions for the formation of health, its preservation and development.

Review questions

- Name the subject of osteopathic activity.
- Give the definition of osteopathy.
- Give the definition of health from the point of view of osteopathy.
- Give the definition of a disease from the point of view of osteopathy.
- Give the definition of osteopathic lesion.
- Give the definition of the lesion field from the point of view of osteopathy.
- Give the definition of the somatic dysfunction.
- Give the definition of the somatic function.
- Give the definition of functional violation (impairment).
- Name the methods of osteopathic correction.

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***...The structure controls the function. The body is a single whole.
The body has self-healing and self-regulating
mechanisms...***

A. T. Still

You must collect all our perception into a single perception that allows us to assess the integrity...

James S. Jealous D. O.

Chapter 2. The Principles of Osteopathy

The principle is the fundamental truth. The method is a way of implementation and research based on principles.

The way is an action or a system of actions. The method is based on the principle. The brain forms perception.

Let us list some methods of osteopathy that every freshman of any osteopathic school knows after the first seminar.

- **Man is a part of nature (the biosphere).**
- **Man is a dynamic functionally integrated system.**
- **The human body is a self-regulating system.**
- **Unity of function and structure.**
- **Movement is one of the fundamental manifestations of life.**
- **Primary (cellular) respiration is the basis of life activity.**
- **Benevolent care of a person, focused on health, is the basis of effective therapy**

Man is a part of nature (the biosphere)

Every man is a part of all mankind and the biological system of our planet on the whole. In fact, I want to think that it really is, and we are not a malicious virus that our earth simply tolerates up to a certain point.

Thus, what we consider to be a whole is simultaneously a part, and we are dealing with a system in the system.

“...And humanity is just one big body of Adam”, as some claim, “... consisting of cells in the form of humans...”.

The division into parts of the body, organs and systems is the result of the work of our mind, the intellectual exploration of our “observer”, and the description of the individual fractions that make up the whole picture.

But even at this level, the shape and physiology of tissues and organs is determined by the needs of the whole. The needs of adaptation to environmental conditions, which are formed long before birth and are predetermined genetically. Parts are just an expression and a manifestation of the whole.

Man is a dynamic functionally integrated system

Human body is a single system consisting of parts striving for functional integrity.

All organs and systems are interconnected anatomically and functionally.

Anatomical unity is ensured by the fascia and its derivatives forming a biomechanical integrity not only at the local, but also at the regional and global levels.

Functional unity is manifested by a continuous, complementary relationship between the functions of all organs and systems of the body.

Biodynamic unity is characterized by a unifying relationship between man and nature of which he is an integral part.

The human body functions only in interactions with the environment. The study of the functional unity of the human body is inextricably linked with physiology – a dynamic study of the functions of the living organism and its components in the process of interaction with the environment.

The main object of the study of physiology are the functions of the organism as a whole, its parts, tissues, organs, cells, extracellular elements, molecules and atoms.

All objects studied by the osteopaths are part of the physical space and, given the dynamic component, can be described in a four-dimensional coordinate system.

Of these four coordinates three relate to space, and their understanding underlies the biomechanical method of osteopathy forming the definition of axes and planes.

The fourth coordinate is time. In osteopathy we determine the duration of the event and the frequency of its occurrence.

Thus, we can conclude that osteopathy, based on the laws of physiology, studies the integrity of the human body.

The body consists of parts. The characteristics of these parts vary with time. In other words, **the dynamic processes of the organism's interaction with the environment, that is functions, are the subject of study.**

The human body is a self-regulating system

The basis of effective self-regulation of the body is the normal physiological state of the immune, central and autonomic nervous systems. These systems, like everything in our organism, are interrelated, indivisible and integral.

To restore self-regulating functions, the system must pass through a state of neutrality, which is achieved by the balance of the sympathetic and parasympathetic component of the autonomic nervous system. And also by the restoration of the interrelations of the organism (biosphere), of which it is a part.

Unity of function and structure

Biological functions of the human body are the result of the evolutionary development of the human body in the process of adaptation to changing environmental conditions.

To implement specific functions a certain structure of cells and organs is necessary. We need their structural organization.

The statement that structure and function are interrelated does not really reflect the true situation. They are one. A function can only be expressed through a structure. A structure is such only because it must express a certain function.

If in the process evolutionary development of the human body for adaptation it required other functions, then no doubt the structure of cells, tissues and organs would be different. One example is the evolution of the structure of telereceptors.

The structure of the body and its individual parts is predetermined genetically, within the framework of the functional purpose. Any violation of the order and sequence of gene activation inevitably leads to a disruption of structural and functional interactions. Moreover, the state of the environment in the first two weeks of embryo development significantly affects embryogenesis.

Can we say that **the function is primary with respect to the structure?**

Yes and no. The future functions of the organism are “recorded” in the genome and ordered in the structural elements of chromosomes.

Thus, we understand that, regardless of the dominant influence, **the function and structure are unified and inseparable.**

In the process of the life of the human body as a result of adaptation beyond the physiological boundaries, we get a change in the structure of organs and tissues. In some cases this leads to a change in function. And it manifests itself not only at the local or regional but also at the global level.

Sanogenetic reactions, the purpose of which is to maintain homeostasis, if necessary form the systemic changes in the structure and function of the whole organism.

With various violations, two extreme scenarios are possible. In the first case, this is the control of the nervous system and the change in transport flow from the side of the vascular system. These changes lead to the formation of functional abnormalities and, as a consequence, to the disruption of the function. With long-term functional disorders in the process of adaptation of the organism the structure changes.

On the other hand, mechanical damage to the structure entails a disruption of the function. That is why for a long time one of the basic principles of osteopathy reads: **“The structure controls the function, the function affects the structure.”**. Now we understand when this happens.

Movement is one of the fundamental manifestations of life

Movement is one of the manifestations of the vital activity of the body. All physiological processes are accompanied by internal and external motor activity. This activity manifests itself in the form of rhythmic oscillations of a certain frequency, power, and amplitude. By changing these indicators we can evaluate the functional state of the organs and systems of the body. The motor activity and its characteristics are available for manual intervention and therapy and can be used by an osteopathic physician for diagnosis and therapy.

Primary (cellular) respiration is the basis of vital activity

Breath as a global function of the body is a sequential chain of physical, biochemical and physiological reactions, the purpose of which is the generation and accumulation of energy in the body.

On the one hand, for the formation of energy in the body nutrients are needed in the form of carbohydrates, fats and proteins. Their supply is provided by the digestive system. On the other hand, oxygen is needed for the processing of nutrients, and it enters the body due to the work of the respiratory system during chest (thoracic) breathing.

The very transformation of the energy of nutrients into the energy of macroergic bonds of adenosine triphosphate (ATP) occurs in the mitochondria of cells. Accumulated energy is necessary to ensure all processes occurring in the body.

The functions of our body are directly dependent on the intake and accumulation of energy. That's why breathing is called cellular. Since the process of cellular respiration is basic and principal, it is called primary.

Thoracic (chest) respiration and circulation are functional elements of the global respiratory system of the human body. Their functioning has many manifestations including they are registered in the form of undulating rhythmic oscillations with certain qualitative and quantitative characteristics.

These fluctuations, in turn, are available for perceptive diagnosis in the process of osteopathic testing. By changing the chest breathing and cardiovascular rhythm we can judge the state of the primary cellular respiration.

Benevolent care of a person, focused on health, is the basis of effective therapy

Benevolent is a person wishing good to others. The care of a doctor – an osteopath about a patient is manifested by actions aimed at restoring his health and well-being.

We can appreciate the state of a person in its unity only in a neutral state of calm and goodwill, without distinction (independently) from what is happening inside and around. Otherwise, sympathetic noise will drown out perception, distorting it. And then we will only perceive individual elements. And the whole, in its direct connection with the surrounding world, will slip away from us.

Конец ознакомительного фрагмента.

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