# 19 - VALEOLOGY - A BRANCH OF HEALTH SCIENCE ABOUT HEALTHY PEOPLE: AN INTERDISCIPLINARY SCIENCE

EDUARDO KALININE; IOURI KALININE
Contestado University, Concórdia, SC, Brazil
***kalinin@uncnet.br***

## INTRODUCTION

The industrial modernization, the technological development, the automobile, the equipments that facilitate the work and the television provoked in XX century life habits changes in the most of countries in the world. These wonders created by modern engineers, minimized the spent of energy by human organism. According to Sharkey (1998), in the last 150 years the professional activities demanded the utilization of heavy muscular force, which reduced in almost 200 times it.

The sedentary life style, exaggerated feeding, excess of information to be assimilated, the nervous hypertension provoked by increase in the population density and professional activity changed violent the environment of the modern human being.

Everything lost the genetic program of human being balance, developing the syndrome of Hypocinesia, which brought consequences such as disappear of some illness denominated civilization illness: arteriosclerоses, isquemia, hypertension, chronic fatigue, depression, obesity, diabetes, osteoporoses, cancer, neurasthenia etc., that are linked to serious disturbs from metabolic process and from activities of the central nervous system. (MILHNER, 1991).

The appearance of these illness happened because of the lack of capacity of the human being organism to adapt to fast changes in its environment. So, according to Apanacenko (2001), last decades many changes occurred in the biological human being nature:

-decline of functional reserve of the organ and of the organism systems;

-changes in the processes of auto regulation, reaction, resistance and reproduction (a fall of quantity and quality in productive cells);

-birth of a generation less resistant.

So, we can take the conclusion that modern human being organism pass to a process of fall permanent of the auto regulation mechanisms changing the pathology character. It characterizes not only by existence of chronic epidemic from none infect illness, but also by multiplication of these syndromes. And, as the represent of this multiplication appear the chronic exhaustion syndrome, the stress that is denominated “a illness of 100 denominations”, illness of modern civilization. (APANACENKO, 1992).

So, the modern civilization becomes each more weak, the health of the people that compose to it become more vulnerable because of the alteration of biological nature of human being described up.

Currently, there are many concepts in relation to human being health. Petlenko (1997), in his epistemological work related to this subject, presented 127 concepts of human being health. It means that from do not exist an exact concept what about health human being. So, we are going to cite the concepts of health human being more compatible with the subject of the article.

The better expression about human being health was still mentioned in XVII century by illustrious philosopher Schopenhauer: “Health is not everything, but everything is not without health”.

Health is a lack of illness in a presence of good states of physical well-being, psychical and social. (Patterns of Health World Organization, 1947).

Health is a gradual dimension of the better or worst capacity of organic systems working. (WEINECK, 2000).

Health is a process of conservation and development of its psychical and physiological functions, the capacity of work and great social activities and maximum longevity. (KAZNATHEV *apud* MILHNER, 1991).

Health is the psychophysical state of human being which is characterized by lack of pathological changes and the presence of functional reservation, it is enough to its full biosocial adaptation and maintenance of physical and psychical work capacities in conditions of natural environment. (BUNDZEN *et.al.,* 1998).

Health is a dynamic state of human being which determine by reserves of mechanisms of auto organization of its system (stability against interventions of pathogenic factors and capacity of compensation of pathogenic process), it is characterized by feeding of energetic processes, plastics and informative of auto organization and, also it is the base of biological functions (survival - maintenance of specie) and the social functions. (APANACENKO, 2001).

This approximation to understand Health suppose a narrow link of human being health with the functional reserve of its organism, so, we can affirm that health is not only a lack of illness, but also a presence of some level of organism capacity, which are physiological and neurophysiologic bases of physical, psychical and social well-being of human being.

Considering that the functional reserves of human being organism and its stability against hostiles factors of environment during the life change essentially, we can affirm that Health is a dynamic process that can improve or much worse, it means, the strengthen or the weaken of Health. (VIRU, 1984).

So, which branch of the science can increase a perfect working of vital systems of human being? It seems clear that this science can be interdisciplinary and base in scientific knowledge of physiologic, biochemist, differential psychophysiologic, psychology, biology, ecology, pedagogy, physical education, nutrition, sports medicine, philosophy and et. al. This branch of science exists and it is denominated **Valeology**.

## VALEOLOGY

As a branch of science, the purpose of Valeology is to investigate the individual human being health, and it began to be known and developed from the publication of methodological article in 1982, by Brechman. (BRECHMAN, 1982).The term “Valeology” has origin from the words “valere” in Latin, and “valeo” in Greek, which means to have Health, to have strength.

Valeology is a new direction in science area about human being. If the medicine is oriented to treat the human being organism (to get out of illness) with the utilization of several drugs and surgery procedures, the Valelogy has the purpose to combine the vital system working of organism through learning, education and from development of its organic systems. Therefore, its purpose is also to elaborate instruments and methodologies of organism alteration diagnostic before clinic diagnostic of illness realized by a doctor. (APANACENKO, 2002).

Valeology appeared as interdisciplinary science in an association of physiologic, biochemical, psychology, biology, ecology, pedagogy, physical education, nutrition, sports medicine and philosophy. (BRECHMAN, 1987). It is a science about healthy people Health that research and study the essence, the mechanisms, the methods of diagnostic with individual Health correction of human being, the purpose is maintain and increase its level of individual Health. So, we can say that Valeology is a science about mechanisms of formation, maintained and strengthened of human being Health in ontogenesis. (JOLDAK & KALINKIN, 1997).

Valeology is a branch of science that research about human being and to be human. It is oriented to analyze, prognostic and correct the human being health from childhood to elderly. The methods of Valeology are realized in systems of Education and none in clinics. The methodologies of strengthen of health used by Valeology are realized in classes of teaching institutions, gymnasiums, clubs and associations with special individuality of organic and psychic development from each one. Learning basic knowledge of this science is a vital necessity to each human being. The professional that works in the area of Valeology in Russia is denominated Valeologo.

And, in Brazil, Who could work in this profession? Which formation must this professional have?

According to the written up, it can dominate mainly knowledge in areas such as physiologic, biochemical, differential psycho physiology, psychology, biology, ecology, pedagogy, physical education, nutrition, sports medicine and philosophy, but the mainly knowledge of these professional must dominate are:

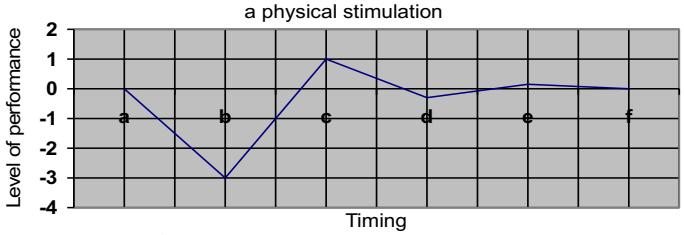
-lows of recuperation after several physical activities;

-pedagogical beginnings used in science of human being development;

-favorable and none favorable tendencies of human being development, and its tolerance against stressors with several etiology in depending of its kind of nervous system, and its temperament.

The organic development (development of vital systems of human being organism) depends on stimulation and recuperation processes. When the stimulation and recuperation processes are realized correctly, the vital systems of human being organism are developed (level of health increase) and when these processes are realized improperly, the vital systems of human being organism do not develop (level of health gets without modification) or if they damage (level of health reduced). From figures 01 to 3 are presented these processes in development.

Figura 1- Changes phases of performance capacities after a physical stimulation



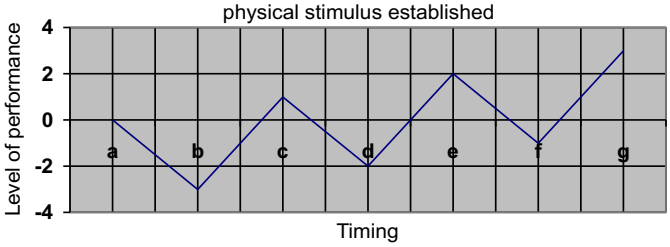

**The level of performance in this figure characterize changes occurred in any organic system of human body. It can be muscular hypertrophy, muscular resistance, cardio breathing power, and et. al. The scale of time is conditional, because the period of stimulation can be realized in seconds and minutes, and the period of recuperation can be in hours and days.**

Phase 1 - Period a - b, when it was given a physical stimulation, it is the phase of come back of performance capacity.

Phase 2 - Period b - c, when the human being is relaxed, it is the phase of increase of performance capacity.

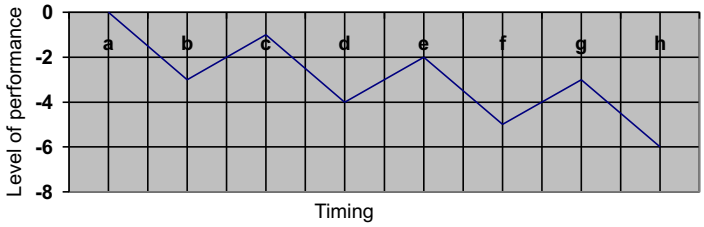
Phase 3 - Period of relax when the level of performance becomes above of usual level and it is denominated super compensation phase.

Figura 2 - Improvement of performance through correct physical stimulus established




The stimulation was given in each time exactly during the super compensation period, period c - d, e - f. So, the level of performance increases.

Figúra 3 - Much worse of performance by physical stimulus applied in partial recuperation state




**The stimulation was given, in each exactly time in partial recuperation state, period of c - d, e - f, g - h. So, the level of performance reduces.**

**Observing the data presented from figures 1 to 3, we can notice the increase of performance level only happen if the stimulation is applied during the super compensation phase.**

**During the practice, appeared problems than can not be solved without deeply knowledge of the professional and of the detailed investigation of the treated person, because the time between the end of stimulation until the phase of super compensation, according to Stepanov (1998) and Weineck (2000) depends on:**

**- kind of overload (alteration of overload compounds);**

- adaptability;
- condition of training;
- age;
- sex;
- manners of recuperation;
- feeding;
- methods of training;
- content of training;
- manners of training;
- system that receive the overload (example, passive locomotors set, active locomotors set, cardio lung system and et all.);
- social factors concomitants (familiar, community and professional burden);
- bioritmic factors;
- psychological factors concomitants;
- atmosphere factors;
- seasons of the year;
- temperament.

The lack of consideration of these factors in the process of vital process development of human being can take it to negative factors, damaging the health.

Beyond of consideration about cited factors in the process of vital capacities development of human being can be respected the follow Pedagogical Principles:

- Principle of biological individuality.
- Principle of zone of proximal development.
- Principle of growing power.
- Principle of continuity.
- Principle of volume interdependency - intensity.
- Principle of conscious.
- Principle of systematic work.
- Principle of evidence.
- Principle of accessibility.
- Principle of solidity.
- Principle of support in positive qualities that the individual get.
- Principle of activation (motivation of the individual through stimulus, animation of the training, positive thought at all.).
- Principle of difficulty purpose accessible.
- Principle of stimulate assessment.
- Principle of educative teaching.
- Principle of specific movement.

And still more, the Professional could have knowledge about favorable and none favorable tendencies of human being development and his/her tolerance against several etiology stressors depending on each kind of nervous system and of the temperament. (ILHIIN, 2001).

Analyzing the written, we can affirm that Valeology must have deeply knowledge of Physical Education, Sports Training, Pedagogy and differential psychophysiology.

So, in relation to the question done before: Who could work in this profession? We can answer that the nearest to work with this occupation are professionals graduated in Physical Education or Sportive Medicine, and they need to be specialized in: “Physical Activity and Health”, “Theory and methodology of Sportive Training”, “Differential Psychophysiology”. But, it will be better, if the Brazilian universities give more attention to this branch of science and would crate Valeology faculties, as was realized in Russia. (PETLENCO & DAVIDENKO, 2001; CHERNETSKY, 2002).

**CONCLUSION**

Nowadays the world brought epidemics of illness none contagious face to face. Example, obesity. The traditional medicine is not getting this progress. It seems that the obesity problem can be solved by Valeology, its essence is the management of individual health, the strengthen and the harmony of auto organization mechanisms of life system with support, beyond many health areas of knowledge, in pedagogical principles to educate in human being healthy life habits.

We understand that, Brazilian universities must give more attention to this new branch of science and create Valeology faculties.

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Rua Marechal Deodoro, 352, Apt. 901
CEP: 89700-000 - Concórdia - SC
Fone: 049 3444-8931 - kalinin@uncnet.br

**VALEOLOGY - A BRANCH OF HEALTH SCIENCE ABOUT HEALTHY PEOPLE: AN INTERDISCIPLINARY SCIENCE**

**ABSTRACT:**

Valeology is a science about formation mechanisms, maintenance and strengthen of the human being Health in ontogenesis. Valeology is a new direction in science area about human being. If the medicine is oriented to treat the human being organism (to get out of illness) with the utilization of several drugs and surgery procedures, the Valeology has the purpose to combine the vital system working of organism through development of its organic systems by means of Physical Education, Pedagogy, Sport Medicine, scientific knowledge in the areas of physiology, biochemistry, differential psychophysiology, psychology, biology, ecology, pedagogy, physical education, nutrition, sports medicine and philosophy. Therefore, its purpose is also to elaborate instruments and methodologies of organism alteration diagnostic before clinic diagnostic of illness realized by a doctor.

KEY-WORDS: Valeology. Individual Health. Human organism.

**VALEOLOGIE - BRANCHE DE LA SCIENCE DE LA SANTÉ SUR LES PERSONNES SAINES: UNE SCIENCE INTERDISCIPLINAIRE.**

**RESUME:**

Valeologie c´est une science sur les mécanismes de formation, de maintien et de fortification de la Santé de l´être humain dans la ontogenèses. Valeologie c´est la nouvelle dierection sur le plan de la science sur l´être humain. Si la médecine est directionnée pour soigner l´organisme humain ( l´épargner des maladies ) avec l´utilisation de plusieures drogues et procédures chirurgiques, la Valeologie a par but harmoniser le fonctionement des systémes vitaux de l´organisme,à travers le développement de leurs systhèmes organiques,en utilisant les moyens de l`Éducation Physique,de la Pédagogie,de la Médecine Sportive et des connaissances scientifiques dans le terrain de la physiologie,biochimie,psychophysiologie differencielle, psy-chologie, biologie, écologie, pédagogie, éducation physique, nutrition, médecine sportive, phylosophie. En plus, son but est aussi celui d´élaborer des instrun]ments et méthodologies de diagnostique pour les altérations de l´organisme humain, avant le diagnostique clinique d´une maladie, réalisé par un médecin.

MOTS-CLES: Valeologie,SantéIndividuelle,Organisme humain.

**VALEOLOGÍA - LA CIENCIA SOBRE LA SALUD DE LAS PERSONAS SALUDABLES: UNA CIENCIA INTERDISCIPLINARIA**

**RESUMEN**

Valeología es la ciencia de los mecanismos de la formación, mantenimiento y fortalecimiento de la Salud del ser humano en la ontogénesis. Valeología es una nueva dirección en el área de las ciencias sobre el ser humano. Si el objetivo del médico es tratar al ser humano (para curar cualquier enfermedad) por medio de la medicina y de los procedimientos quirúrgicos, el objetivo de la Valeología es armonizar el funcionamiento del organismo de los sistemas vitales a través del desarrollo del sistema orgánico por medio de la educación física, pedagogía, medicina de los deportes y el uso del conocimiento científico en las áreas de fisiología, bioquímica, psicofisiologia diferencial, psicología, biología, ecología, pedagogía, educación física, nutrición, medicina de los deportes y filosofía. Además, su objetivo también es desarrollar instrumento y metodologías para diagnosticar las alteraciones en el organismo humano antes de un diagnóstico del médico de cualquier enfermedad.

PALABRAS - LLAVE: Valeología. Salud Individual. Organismo Humano.

**VALEOLOGIA - RAMO DA CIÊNCIA DA SAÚDE SOBRE PESSOAS SADIAS: UMA CIÊNCIA INTERDISCIPLINAR**

**RESUMO:**

Valeologia é uma ciência sobre os mecanismos de formação, de manutenção e de fortalecimento da Saúde do ser humano na ontogênese. Valeologia é nova direção na área das ciências sobre o ser humano. Se a medicina está direcionada para tratar do organismo humano (livrar das doenças) com utilização de diversas drogas e procedimentos cirúrgicos, a Valeologia tem o objetivo de harmonizar o funcionamento dos sistemas vitais do organismo, através do desenvolvimento dos seus sistemas orgânicos, utilizando os meios da Educação Física, da Pedagogia, da Medicina Esportiva o dos conhecimentos científicos nas áreas de fisiologia, bioquímica, psicofisiologia diferencial, psicologia, biologia, ecologia, pedagogia, educação física, nutrição, medicina esportiva, filosofia. Além disso, também é seu objetivo, elaborar instrumentos e metodologias de diagnóstico das alterações do organismo humano, antes do diagnostico clínico de uma doença, realizado por um médico.

PALAVRAS CHAVES: Valeologia, Saúde Individual, Organismo humano.