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Review Article

Sexual Stress a Secret Stressor

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Abstract

Objective: To investigate the relationship between menopausal physiological changes and menopausal syndrome, whether there is association with AD.

Methods: Using 25 years of research on sexual health (including the basic and clinical of FSD, the characteristics of menopausal sex, sexual passion for middle - aged women), drawing on the world 's latest research results on stress and brain mechanisms, the introduction of psychological Biology, human sex, neurology, gynecology, brain evolution, mathematical analysis and other disciplines of philosophy, methods, deduction, synthesis, reflection.

Results: The common irritability, anxiety and depression of menopause are a kind of negative stress reaction. Sexual stress is a secret stressor of this reaction. Reproductive compensatory mechanism of non - asymptotic withdrawal, menopausal women are generally the causes of sexual stress; Because FSD is associated with symptoms, sex stress may lead to repeated stress conditions; Premature abandonment of sex hormones in-depth study, as well as on the FSD is a long-term silence of the cognitive field of artificial disease, is to produce vulnerability, increased sexual pressure of the main factors; There is a linear relationship between the adaptive trend of neurons and pressure and the switching of brain function. Excessive and continuous pressure can lead to the frontal lobe control tends to be very small. The brain thinking mode is switched from logical type to reflective type.

Conclusion: Sexual stress is a category of stress. It has the characteristics of easy, persistent and uncontrollable. And is closely related to menopause syndrome. It is a secret stressor and is associated with MCI and AD through negative stress. We should strengthen the research on the relativity between sex stress and brain function switching, increase the social resources to deal with the pressure of sex and reduce the intensity of menopause syndrome, which may reduce the risk of AD.

Keywords: *Sexual stress; Adaptive tendency; Alzheimer 's disease*

Menopause syndrome is a gynecological concern. Gynecology as a traditional clinical medicine disciplines, the direction of the study is only women in the reproductive system of non-pregnancy physiological and pathological changes. But in the past 50 years, by it (or because it) revealed some of the information, but has been disturbing, affecting hundreds of millions of women, or even men and family.

For example: 1963 Rober Wilson's estrogen replacement therapy (ERT), was considered not only to treat all kinds of symptoms caused by menopause, but also to delay and prevent the occurrence of menopause-related diseases. "The widespread use of estrogen substitutes continued into the 1970s, when people found that their use increased the incidence of endometrial cancer" [1]. Since then, "progesterone is introduced into the treatment, progesterone can cause endometrial shedding, the possibility of elimination of endometrial cancer. Later, estrogen, progesterone substitutes began in clinical wide application" [2]. During this period, gynecology's view of the relevant basis is "menopausal changes, mainly related to the decline in sex hormone levels, but the mechanism has not yet fully elucidated" [3]. With the arrival of the new century, the new version of gynecology removed the "mechanism has not yet fully elucidated" view. "Said that menopause is only due to estrogen deficiency, and therefore treated with estrogen substitutes" [1]. At the same time, the first time Alzheimer's disease has been written into the textbook. "Recent studies have found that estrogen deficiency may be potentially dangerous for Alzheimer dementia" [4]. Although estrogen therapy is considered one of the most controversial treatments, "in fact, in 2002, about 1.7 million women in the United States took hormones to relieve menopausal symptoms and vaginal dryness" [1]. However, the "real change in the routine use of estrogen replacement therapy for postmenopausal women is WHI," a study of 16,000 women in a five-year study in 2002 found that estrogen replacement therapy (HRT) was brought to many women Significant health risks (increased risk of ovarian

cancer, breast cancer and heart disease, stroke) [5]. Unfortunately, only Chinese breast cancer in 2014 The number of new arrivals and deaths accounts for 12.2% and 9.6% of the world's total, respectively, and the AD in the United States has reached 53 million in 2015 [6].

Why do not we expect the results to be consistent with the results? Is the problem in the direction, or the method? Therefore, for menopausal syndrome and related physiological changes in the cognitive and coping methods, we urgently need to further explore, synthesis and reflection.

Re-syndrome

"Menopause syndrome refers to a series of physical and psychiatric symptoms of sex hormones fluctuating or decreasing in women before and after menopause" [7]. As to which sex hormones have fluctuated or reduced? What is the role of these sex hormones, how much to reduce the specific changes in the body? How does this affect mental and psychological? In fact, the academic research on this is quite lacking.

Clinical menopausal syndrome worthy of attention is its "mental neurological symptoms: perimenopausal women often show that attention is not easy to focus, and mood swings, such as irritability, anxiety or anxiety, depression, depression, cannot self-control and other emotional symptoms, memory loss is also more common" [8]. However, the symptoms usually refer to patients with abnormal conditions due to disease, such as headache is a lot of symptoms of the disease. Therefore, according to this argument, we can generally judge, at least logically, if the estrogen reduction is not a disease is only physiological changes, then, the list of these states cannot be called the symptoms. What are they? Let us change the dimension, to sort out their general origin.

The Withdrawal of a Mechanism

Not long ago, we (the two authors of this article, Jian Jianzhong. Li Songlin, 2015) to sex and gynecological perspective, has carried out a cross-disciplinary research "menopausal sex characteristics", [9] hope to clarify How did menopause affect sex? Studies have shown that: "animal reflex ovulation has a significant reproductive advantage over human cycle ovulation. As a reproductive compensatory mechanism, human ovarian autonomously secreted with sex-related androgen (T) and estrogen (E2) to match" [9]. By T and sexual desire is positively correlated, "in the ovulation period, just corresponding to the peak of T, which has a" reproductive tips "function, make up for the sperm and eggs difficult to combine the disadvantages" [9] At the same time, "E2 growth, also [9]. In this mechanism, the hormone (T) is associated with the 'thought' of sex, and it is the same as the " Sufficient Conditions for Female Sexual Behaviour. And hormones (E2) and sex in the 'can', is a necessary condition for sex. Menopause before the arrival of this mechanism has been running for more than 30 years, "want to do can do" practice, laid a full "sex self-confidence". But it can be envisaged that, in the absence of reproductive logic, in the menopause, "because the compensatory mechanism is not asymptotic withdrawal, once the follicles stop growing, there will be claw-type secretion stopped, causing vaginal dryness, resulting in sexual partners Severe discomfort, and easily lead to sexual intercourse pain, causing 'sexual self-confidence' crisis" [9].

After the withdrawal of the compensatory mechanism, "E2 only about 15%; and T left about 71%. Lank level E2 is no longer sufficient to support the formation of effective stimulation of the secretion of cells, and the role of secreting. Sex lost in the original autonomy, spontaneous, automatic and rapid lubrication ability" [9] is also a menopausal woman generally appear sex stress reasons.

"In the perimenopausal period and menopause, vaginal lubrication decreases. These changes mean that pain and vaginal infections increase during sexual intercourse" [10]. Unfortunately, for such FSD Problem, because the scientific community, the medical profession to understand too little, "so that in the rule of treatment often in accordance with the traditional disease medical thinking, chose the inappropriate standards, has been" no exception "conclusion" [11].

Directly or indirectly contributed to the patient in the face of sexual life, reluctantly involved - repeated deepening - long-term unhealed, and even cause the consequences of fear cannot. In particular, sex "exclusivity", "uniqueness" and marital "sexual obligation", the requirement of loyalty, and further the cause of love is not emotional problems, sex and passion issues (difficult to interact or no passion) Dilemma. More so that patients in a state of extreme aggrieved, depressed and desperate state. Coupled with the pain caused by the extreme fear, can cause long-term asexual. Thus, this symptom often leads to couples, couples between the "nameless fire", resulting in the cold war, confrontation, or even an affair, and so on, there are various personality crisis. Which directly endanger the marriage, family stability.

What is more worth exploring is how does our social support system be in a state where menopause is experiencing this physiological change? Will give this group to create what kind of living environment?

Blocked by the Posterior

Menopausal physiological changes, especially in the past half century, from the theory of exploration, to the practice of confirmation, it has let people experienced a lot of joy, doubts, frustration or confusion. Perhaps due to:

Defects in the theory of failure methods

Since 2000 to remove the "mechanism has not yet elucidated" view, the academic community to give up early studies of sex hormones, menopause in the relevant mechanism, in fact, established the "estrogen deficiency" The Until today, most women also believe that the medical profession supports estrogen replacement therapy. Unfortunately, this is considered not only to treat all kinds of symptoms caused by menopause, but also to delay and prevent the occurrence of beliefs associated with menopausal diseases, once again challenged. Due to the (ERT) or (HRT), there are serious defects or significant health risks. "WHI's study suggests that estrogen replacement therapy should not be treated as a routine treatment for postmenopausal women" [5] due to de facto theoretical failure and methods Defects, which will bring to the menopausal people tangled and anxiety.

"Artificial disease" caused by social isolation

Sex is a central topic throughout the life of mankind. "In fact, menopausal sex and non-reproductive sex occurs, more prominent is the human nature of sex. Sex has become the transmission of emotion, the most expensive, the most simple and effective path and [9] can be seen, how to maintain the path of the smooth, reduce the FSD, academics should be promising. However, in early 2003, "British Medical Journal" published in the "Australian Financial Review" in Washington correspondent Mo Ni Ni Han wrote "redefine the FSD scientists and doctors, many people close to the pharmaceutical company," "FSD is manufacturing [12]. Despite six weeks later, the British Medical Journal received more than 70 letters of disagreement. "Many doctors believe that sexual problems are caused by psychological factors, but it is done by the physiology [12]. However, in fact, until today, in the global context, sex and gynecology do not have the same time, there are many doctors and journalists, many FSD women will be long-term ignored " Can be properly resolved menopausal women face these practical problems, "long been ignored" has become a more general situation.

"Aging that" reproductive and sexual confusion

For menopausal changes (including sex issues), if you stand in the perspective of disease medicine and reproductive medicine, for the relevant [pathophysiology] generally there are some views: "menopausal changes actually include two aspects: First, ovarian function [3] has always been the "aging that" has become the most menopausal sex the most difficult sex, the aging of the body, the aging of the body, Natural, obvious reason. In fact, cannot reproduce and whether sex is not necessarily associated.

In fact, menopausal physiological changes, the first can directly experience the impact of only menopausal sex, lost the ability to lubricate the past. However, it is this change that may lead to a fundamental change in the lifestyle, including sex, that has become normal for 30 years. If we can think of the situation caused by the physiological changes in the menopausal population and the associated living environment, it can be found that the syndrome is happening in the process of experiencing such changes or attempts to prevent the change. According to the theory of mental biology, "when the individual is facing or aware of environmental changes on the body when the threat or challenge to make the adaptability and response to the process, that is, stress" [13]. It is not difficult to understand that menopausal syndrome is such a stress response.

Change and Stress

Estrogen decline is a physiological change, not a disease. Therefore, the relevant response (performance) is not a symptom, but a stress.

Menopause syndrome, in fact, is associated with a negative emotion and the individual does not consider possible response to stress. it includes:

Emotional Stress Response: emotional instability, irritability, anxiety, depression.

Behavioural Stress Response: easy to excitement, quarrel, crying, depressed, cannot be controlled, no interest in the outside world.

Cognitive Stress Response: attention is not easy to focus, remember the decline and so on.

Here, the problem of theoretical failure, methodological defects, "man-made disease" and "aging" and so on are all individuals unable to cope with. Thus, these stress responses can only occur in a negative way. "Emotions are the tools to adapt to survival, emotional adaptation function is to improve and improve the living conditions of people. In short, the occurrence of various emotions, always reminded individuals and society to understand their own or others in the situation and state, in order to Good adaptation" [14]. In 1962, Shah and Singh (Singr J) Experimented with their theory to prove that "the state of mind is the result of cognitive processes, environmental stimuli, physiological responses in the cerebral cortex integration" [15] why we have reason to say, these are the origin of menopausal syndrome.

Obviously, sexual stress is an important cause of stress and physical stress, and is the direct cause of such stress. Sexual stress is associated with menopausal syndrome and is a secretive stressor. So, does it have those features?

Explore Stress

Often, academics use some basic features to define the existence of stress. Pressure is a process, "including stress, stress, and context (stress, stress, stress, stress, stress, stress, stress, stress, stress, stress, stress, stress, stress, The relationship between people and the environment). What are the commonalities and differences in sexual stress and general stress caused by menopausal physiological changes?

The pressure has all the characteristics of pressure, is a category in the pressure

Sexual stress is a change in our body due to menopausal physiology, or after triggering the FSD, to respond to everyday sexual challenges, and to reactions that may be complex. In the case of coping stress, we have a series of reactions on the body, chemically and emotionally. It can be seen that sexual stress is not just a stimulus or response, but a process that affects or adapts to the impact of menopause changes through context (the interaction between individuals and sexual partners, including behaviour, cognition, mood).

In the face of the same events, due to individual and sexual partners to change the attitude of the interpretation of the different ways to deal with different. Therefore, the degree of pressure experienced by each person can also be different.

However, sexual stress and general pressure, but also by some people feel nervous events triggered, resulting in some subjective experience that is pressure state. And by the pressure caused by the stimulation, the state of pressure, and the situation to form a pressure process. Thus, sexual stress is essentially a stress, it satisfies all the characteristics of the pressure composition, but it is related to sex, and become a category in the pressure.

Sexual stress due to the abolition of reproductive compensation and widespread, the large number

"The whole menopause transition period E2 is not gradually decreased, but only in the follicle to stop the growth and development, only rapid decline. Postmenopausal closure of secretion" [16]. "50% of women into menopause, usually sex [17]. "Suddenly appearing cliff-like secretion stops (e.g. vaginal discomfort, reduced secretion, reduced vaginal discomfort (burning sensation) and sexual intercourse pain and sexual intercourse" [9]. It is this sense of crisis caused by the "sexual pressure", which is caused by the sexual crisis, which is caused by the seriousness of sexual intercourse, as a result of the gradual withdrawal of reproductive compensation mechanism is caused by menopausal women generally appear the reasons for stress. Menopausal changes are procedural, irreversible process of apoptosis, but also every woman must pass the course of life, and thus the large number of sexual stress.

The stress is characterized by repeated persistence and repeated stress

"In fact, in this respect, we are surrounded by various social influences, including religion, multiculturalism, socioeconomic status, ethical norms, media and politics, the occurrence of sexual behaviour is the result of a variety of factors. Biology, psychology, social culture and other factors constitute a complex system, which has a role in all of our sexual acts" [18]. Then, when sexual behaviour is difficult or becomes a problem, it will also reverse the spread of the system.

Although menopause is withdrawn by reproductive compensation asymptotically, it often causes FSD to occur. But does not affect the body's new growth and decline of hormones, of course, will not affect the partner's hormone operation. Generally speaking, hormone levels and "sexual desire" was positively correlated, when the hormone reaches a certain level, long-term nature will make both partners feel uncomfortable. "It is no longer an individual symptom because of whether the 'pain' and 'can participate' together, whether it is 'really hurt' and 'emotional'), so that sexual intercourse pain is no longer an individual symptom" [19]. Obviously, due to lack of pain, will bring to others uncomfortable, affect others "pleasure", so sexual difficulties become a related symptom, showing its sociological properties. Sexual stress caused by sexual requirements, with the level of hormone growth, was sustained, cyclical and repeated to stimulate.

Sexual stress from the vulnerability, directional resonance, with potential uncontrollable

"Emotional components are the core of stress response" [13]. In sexual stress, emotional components appear to be more prominent. The role of sex in marriage or couple's life is self-evident, difficult "sex" means that cannot be very good to meet the physical and social needs. Physically, the partner's both sides of the hormone T (sexual energy) need to be released through sexual life. In the social needs, the family needs a harmonious, intimate form. However, sexual difficulties can often lead to changes in the style of life, can be long (or even more than 30 years) to create a completely change the style of life. It not only caused serious trouble in sex, but also in the daily life of mixed with minor and frequent troubles, so that the pressure everywhere.

On Vulnerability

According to the psychology of the University of California at Berkeley psychologist (Richard Lazarus, 1980) "The concept of vulnerability is very important to understand the pressure, vulnerability is the lack of a challenge the necessary social resources" [20]. Said that the social support system, with the role of reducing stress, is the role of stress in the process of individual external resources available.

"Animal experiments also prove that social support and mental health between the positive link between the social isolation, can lead to significant behaviour of animal abnormalities" [21].

In order to fully understand the stress, we need to clarify the interaction between the menopausal population and the spouse (partner) and the social system. Social systems can be made up of support systems and constraints, although changes in menopause are irreversible, and changes actually result in changes in sexual life (at least 50% of people are experiencing sexual difficulties). But their spouse (partner) sexual needs, under the influence of the social control system, but still only from the menopausal women get. Lack of sex, can lead to family loss of harmony, and then produce self-esteem, weak, incompetent feelings. Similarly, under the influence of the social restraint system, menopausal people only get their needs from their spouses (partners) (including respect, belonging and love and being loved). As the social support system in the "FSD is the artificial disease" and "no abnormal" diagnosis, not only caused the social isolation, in fact, also caused the response to menopausal changes in the lack of social resources.

This vulnerability has become the main reason for increasing the stress of menopausal population. At the same time, also let the spouse (partner) is difficult to see hope and increase negative emotions, and may be further feedback to the menopausal crowd. However, due to vulnerability reasons, menopausal and spouse (partner) face menopausal physiological changes, and ultimately can only choose to endure and suffering.

In fact, "physiological needs are the most powerful categories of human needs, and when the individual cannot be satisfied, it will strive for the need to make the physiological state tend to balance" [22]. However, needs often exist at the same time, with each other. Due to vulnerability, due to the role of the control system, sexual stress will be long-term, chronic existence.

On Directional Resonance

Just as you learn more about the composition of stress in physics, we also need to have a better understanding of the composition of sexual stress that men may experience. Resonance in physics is a superposition of the same frequency, and in some cases uncontrollable, the same point in the menopause is similar to the same frequency because the nature of the resonance is the same. In fact, when all the contradictions intersect (the disharmony of the family, the tension of marriage, the lack of love, the third party, the family property, the livelihood ...), are caused by sex change, when you see, hear other people's harmony , Intimacy, etc. may not help touch the scene, as long as can be classified as sex change (sexual difficulties) caused by the event, have their own point, can form a pressure and continue to stack, through the accumulation of outbreaks, similar resonance Sexual resonance).

In general, sexual stress is a stress source associated with physical, psychological, and social integration, and because of this comprehensiveness, it is potentially uncontrollable due to vulnerability and directivity resonance.

Relationship between stress and MCI/AD

Is menopausal syndrome associated with MCI and AD? If so, where is the relationship between them and where?

"Negative life events, threatening to people, will result in a clear and lasting negative emotional experience, resulting in the body disease or disease" [23]. Sexual difficulties is a negative life event, If the stressor is persistent, recurrence occurs, the body appears to have anxieties [24] with negative emotions and the individual thinks that there is no response to possible stress: causing anxiety, cognitive decline, mood swings [23]. Obviously, negative stress is detrimental to cognitive, long-term negative stress, long-term loss of cognition.

Mild cognitive impairment (MCI) is between normal aging and dementia [25] "dementia stage that the traditional sense of AD, this stage of the patient's cognitive function", the cognitive function of patients with mild cognitive impairment MCI is the cognitive function of the decline, but the daily basic ability of normal "Damage, resulting in a decline in daily living capacity" [25].

Because menopausal syndrome is essentially a negative stress response to menopausal physiological changes. Negative stress can directly affect the cognition, and MCI, AD's core judgment index is cognition. As a result, negative stress is associated with it, and menopausal syndrome is associated with MCI and AD.

It is true that we also need the help of modern medical research to further clarify what is stress response and determine the effect of stress on human physiology and health.

Pressure with the Brain

In 2012, Professor of Neurobiology at Yale University School of Medicine Amy Annston A. Arnsten, (Focusing on molecular changes in stress and aging of the prefrontal state) and professor of psychiatry and psychology Carolyn M. Margaret C. Mazure, (founder of the Yale Women's Health Interdisciplinary Research Center) and Professor of Psychiatry, Yale Pressure Research Center Leader Rajita Sinha R.Sinha, (Focusing on the Effects of Stress on Behaviour) Common research first stated that "stress destroys homemade force" [26].

"The recent experimentation has given scientists a new understanding of the physical activity of the human body under stress" [27]. The experiment found that "the prefrontal lobe plays an unexpected role and can be used as a [27]". In the absence of stress, the signal produced by the prefrontal cortex is delivered to the brain, and the signal Depth: control the daily habits of the striatum, regulate appetite and sexual desire and other basic aspirations of the hypothalamus, regulating the emotional amygdala [28].

"The prefrontal cortex is part of the brain's late evolution, and even the slightest pressure, the brain is responsible for self-controlled neural circuits, which are even sensitive to temporary, everyday anxiety and worry" [27]. "There are some studies that want to figure out what the current frontal cortex is stimulated for several days or even weeks, and under long-term stress, the neural network of the lower-level emotional center appears to have expanded and is responsible for logical reasoning The regions are beginning to shrink, and in these cases the dendrites used to receive the signal in the amygdala neurons become larger and the neurons in the prefrontal cortex are atrophic [29] The Mount Sinai School of Medicine John Morrison and colleagues found that the dendrites of the prefrontal neurons were regenerated once the pressure had disappeared, but if the pressure was too large, the regenerative capacity would disappear" [29].

Recent studies have shown that a large, uncontrollable pressure can lead to a series of neurochemical reactions that will not only weaken the control of the prefrontal cortex but also reinforce the influence of those in the evolutionary older brain regions. The brain transfers thinking and emotional control from the prefrontal cortex to the more primitive areas [27]. Twenty years ago, Anston A Arnsten, Patricia. (In the past), had to close the prefrontal cortex function of the study: tension caused by changes in neurochemical changes in the prefrontal cortex, neurons by a large number of norepinephrine and dopamine or stress hormone cortisol stimulation, the nerve The connection between the neurons will be interrupted and the activity of the neurons will be inhibited, and the dopamine will be transferred to a series of structures in the depths of the brain (collectively referred to as the basal ganglia). On the contrary, this will have a stronger control of the behaviour [30].

Learn from these studies, how to clearly and clearly explain the pressure and brain function of these associations? "Nowadays, most people realize that although physiology studies the process of life but is described in physical and chemical ways, it is probably its ultimate attribution" [31].

Mathematicalization of brain-related evolution

- First, the algebraic processing,
- Prefrontal cortex control (PC)
- Basal ganglia control Basal ganglia command (BC)
- Pressure pressure (P)
- Norepinephrine (NO)
- Dopamine Dopamine (DO)
- Cortisol (CO)

(27) and (27), the prefrontal cortex control (PC) is a function of pressure (P).

In the study of the relationship between the pressure and the prefrontal control of the two variables x and y, y = (pc) = f (x), the variable y = (pc) is a function of x, the x = , Parentheses before the letter f that the function of the relationship between variables, that is, by the x value of the y value of the law (rule). How to find the law of change from the pressure change to change the prefrontal control?

(27) and (28) can be obtained, when x = 0 (no pressure), y = (constant), you can get a key point A (0, y_0), the same token (27) can be obtained, when x = (uncontrollable), y = 0 (loss of control), you can get another key B (p_0, 0). In addition, it is indicated by the experiment (29) that there is a reversible point p_{0-1} (the pressure is less than this point, the neuron can be regenerated, the pressure exceeds this point, irreversible).

Using the Cartesian coordinate system, we can obtain that the x-axis intercept is p_0, the y-axis in y_0 , tercept of the linear equation. The straight line will pass through A (0, y_0) and B (p_0, 0)

$$\text{So, } k = \frac{0 - y_0}{p_0 - 0} = -\frac{y_0}{p_0}$$

From the oblique equation, y = kx + b to obtain the required linear equation

$$Y = -\frac{y_0}{p_0} x + y_0$$

Is the prefrontal cortex control and the relationship between the pressure function.

Referred to as: $Y = (PC) = f(x) = -\frac{y_0}{p_0} x + y_0$

(30), and pressure (P) is a function of norepinephrine (NO), dopamine (DO), cortisol (CO).

Different pressures produce different amounts of hormones, and when the excess hormones appear, the ion channels will open. Therefore, the pressure is a function of hormones. The prefrontal control PC becomes a composite function of the hormone.

By (PC) = y is a function of x pressure

Y= f(x),

And x is a function of NO / DO / CO

X=β(NO/DO/CO),

Let (PC) = y be a function of NO / DO / CO by x

Y=f[β(NO/DO/CO)],

Using this - associative, to further quantify (PC) = f (x), it provides a possible path.

Geometric representation of functions

From the clinical significance of y = (PC) = f (x), the domain of the function is [0, p_0), that is, $0 \le x < p_0$, the pressure can be 0 to near p_o, But not equal top_0 (uncontrollable). And the value of the function is [0, y_o], that is $0 \le x \le y_o$. Indicating prefrontal control, When x = 0 y = y_o, x p_0 $y=0_o$

In the plane to take the Cartesian coordinate system xoy, for a straight line passing through point A (0, y_0) and infinity close to B (p_0, 0) And in the ox axis of the line [0,p_0) on the standard P_{0-1} point, this line shows the function y = (pc) = f (x) with the process of pressure x change, called the function y = (pc) = f (x) image (Figure 3.1).

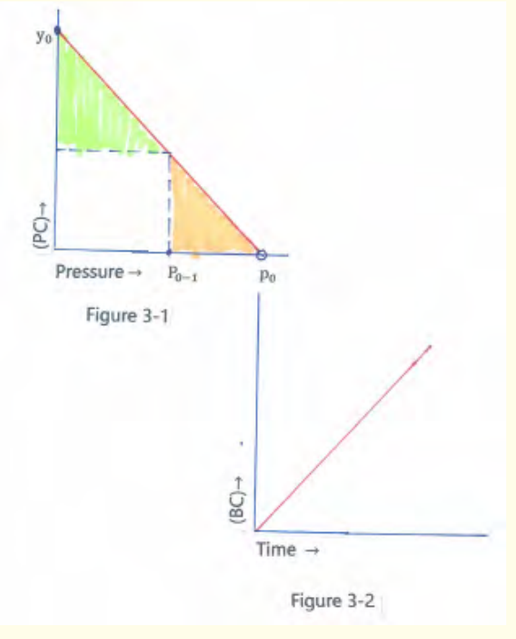

Figure 3-1

Figure 3-2

Because of the geometric representation of the function, the relationship between quantity and quantity can be visually displayed. Therefore, it is very important to study the relationship between pressure and prefrontal cortex control. (Figure 3.1) can be found, the function in the [0, p_0) half-open interval continuous, when x has an increment Δx, then y has a corresponding decrease in Δx, when $x \rightarrow p_0$, the function is interrupted. At the same time, the independent variable is replaced by pressure for time t, which becomes a function of (BC) = f (t) and falls into the new coordinate system (Figure 3.2).

Two points that should be of concern:

Under long-term pressure, (SC) control force expansion, (PC) control atrophy [29]. And the experiment label [29] suggests that there is P_{0-1}, (Once the pressure disappears, the dendrites of the prefrontal neurons are regenerated, but if the pressure is too large, this regeneration will disappear). And thus P_{0-1} points, has become an important pressure cut, less than P_{0-1} point, damage may repair. therefore P_{0-1}can be called (reversible point).

In addition, the experimental notes (27) and (30) suggest the presence of p_0 (Uncontrollable), when the pressure reaches p_0, is not controllable, the connection between the neurons in the prefrontal cortex will be interrupted, the brain will be thinking and emotional control to the relatively primitive area, because irreversible, it will be changed to switch, that is, by (PC) switch to (BC).

Two should be concerned about the interval:

[0, P_{0-1}) is the reversible interval, $0 \leq x < p_{0-1}$, Indicating that the pressure is less than b, not too large, there may be a general cognitive problem, when the pressure disappears, you can repair.

[P_{0-1}, p_0) is an irreversible interval, ,$P_{0-1} \leq x < p_0$, And when the pressure reaches or exceeds P_{0-1}, the damage to the dendrites of the prefrontal neurons will not be repaired.

Two important limits:

$$\lim_{x \to P_0} \left(-\frac{y_0}{P_0}x + y_0\right) = 0$$

$$\lim_{x \to 0} \left(-\frac{y_0}{P_0}x + y_0\right) = y_0$$

The magnitude of the stress is a function of brain function:

$$Y = (PC) = f(x) = \begin{cases} -\frac{y_0}{p_0}x + y_0 & 0 \leq x < p_{0-1} \text{ (Finite stress long- term damage is reversible)} \\ -\frac{y_0}{p_0}x + y_0 & p_{0-1} \leq x < p_0 \text{ (excess damage is irreversible)} \\ BC(t) & x = p_0 \text{ (brain control area switch)} \end{cases}$$

Some came to the mathematical tips:

There is a specific linear relationship between the cognitive ability and the pressure of the brain, and in layman's terms, even if the pressure is only a slight increase, the human cognitive ability will have a corresponding decline. On the contrary, if there is a reduction in pressure, then the human cognitive ability will have a corresponding increase. No pressure, the cognitive ability in the best condition.

Limited stress persistence can lead to neuronal atrophic damage, but after the pressure disappears, the damage is reversible.

When the pressure is too large, the damage to the prefrontal neurons will be irreversible. If this kind of stress occurs repeatedly, due to irreparable, cumulative increase, will continue to weaken the brain's cognitive ability, and become a hidden attack on the process of brain function, will eventually lead to clinical MCI or AD risk.

When the pressure is uncontrollable, it will eventually break the connection between the brain, resulting in complete loss of advanced cognitive function, brain function will also be (PC) to (BC) switch. To be sure, if a person's advanced cognitive function (including attention, judgment, decision-making ability, insight, planning ability, memory ability) is low, it may become a traditional sense of AD patients.

"However, there is a problem still plaguing the researchers, why the brain will have a mechanism to weaken their high-level cognitive function, and we do not have the exact answer" [29].

"In order to solve the real problems of today's and the future of the world, to break the boundaries between disciplines, cross-disciplinary research is the only way" [32].

Understanding Adaptive Trends

In order to clarify this question, can we think about the same change (under long-term stress), why can we cause two parts of the brain to appear very different (atrophy and expansion) response? The same change (uncontrollable pressure), why can lead to the function of the two parts of the brain transfer or switch it?

It can be said that we have long known some knowledge about brain evolution. A brief history of human brain evolution back to the ancient ocean era, far before the advent of the earliest animals, single cell organisms have no brain. However, they already have the ability to perceive and adapt to changes in the external environment. With the success of multicellular animals, cells begin to have mutual perception, adaptation and response. In recent years, some studies have found that some single-celled organisms such as flagellates will release and receive chemical signals or transmit electrical signals. This is about 850 million years ago, the emergence of flagellates, is considered the ancestors of animals. It can be said: perception, adaptation, response, animal or human life is the basic unit of biological characteristics.

Shrinking is not suited? That extension? What kind of parts to adapt and expand it? This also makes people think of the widely known "triplet" hypothesis, the United States Maryland Pillsville's "brain evolution and behaviour" laboratory director, neurologist Paul. McLean, through "comparative neuroanatomy and behavioural research "that the evolution of the three stages from the human brain, each with independent intelligence, subjectivity, space and sense and memory. In 1952, he first created the word "edge system", used to refer to the middle part of the brain. Physically, including hypothalamus, hippocampus and amygdala. And this part is closely related to emotion, intuition, nurturing, fighting, escape and sexual behaviour. As McLean observes, the emotional system has always been love and hate, one thing is either "pleasant" or "unfavourable" without intermediate state, in ancient harsh environment, human beings rely on this simple " Harm "principle, survival was able to guarantee. It can be said that the edge system has experienced a long, great pressure, and through adaptation, improvement, evolution.

Does the prefrontal-to-margin system transfer function relate to experience and ability? Is it related to "adaptive trend"? The essence of "adaptive trend" is the unconscious, the reaction of the will, the instinct of the basic unit of life.

Conclusions

"All the key issues of life, have to go to the cell to find the answer" [33]. If the "adaptive trend" point of view is correct, then, adaptive change will likely become a new challenge facing human survival. And this challenge is related to the biological ecology, and because of adaptability changes, and the characteristics of hidden attack.

As menopausal people need to focus on intensive, face these physical, psychological and sociological aspects of the problem, usually long-term under limited pressure, and will face the possibility of excessive or even great pressure risk. Therefore, this population will become a high-risk population of MCI/AD.

In fact, social support systems, social restraint systems, and each individual will be "eco" builders, different ecologies, and produce different physiological phenomena. This particular association for the existence of the brain and the pressure, together to create a suitable brain ecology, may be a path to reduce brain degradation.

Sexual stress is a category in stress, with easy, persistent, potentially uncontrollable characteristics. And is associated with menopausal syndrome, is a secretive stressor, and through negative stress and MCI and AD associated. Should strengthen the relationship between sexual stress and brain function switching, increase the social resources to cope with sexual stress, reduce the intensity of menopausal syndrome, which may reduce the risk of AD.

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Volume 5 Issue 3 August 2017