

Reproductive Compensation Mechanism

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It can be said that human perception of female sexual ability, “want to be able to” or even “do not want to be able to” has been a very long and universal consensus. So much so that in January 2003, the *British Medical Journal* (BMJ), one of the most influential and widely read general medical journals in the world, led a discussion on female sexual dysfunction (FSD) by publishing an article by Ray Moynihan, Washington correspondent of the Australian Financial Review. Its argument is that “many of the scientists and doctors who are redefining FSD have close ties to pharmaceutical companies” and that “FSD is a manufactured disease”. Thus, the global FSD research, including basic, pharmaceutical, clinical and other aspects, constitutes a total denial. Despite this, the global academic community remained silent for 10 years.

This has also brought great impact to our choice to engage in the women’s studies Institute with clinical prevention and treatment of FSD as the main direction since 1988. Even more challenging is the fact that in China, a newspaper with a weekly circulation of 1.46 million copies and an intellectual readership of 6 million people, the Southern Zhou Wei, in its science section, reported the BMJ’s “FSD is a man-made disease” in full. Obviously, the FSD prevention career in front of me will be terminated.

In 1992, Professor Wang Shufan, director of the obstetrics and Gynecology department of Wuhan Central Hospital, China, met a group of knowledge perimenopausal women in clinical practice, who strongly hoped to get help to solve the problems of “external genital dryness, itching, tight vaginal mouth, poor elasticity of perineal skin, vaginal atrophy, inability to insert two fingers, uncomfortable sexual intercourse, painful sexual intercourse”. Therefore, Director Wang Shufan turned to us for help, hoping to solve these problems. Since then, we have collaborated on more than 10 years of exploration and achieved a number of encouraging results. In 2008, in the Chinese Journal of Sexual Science, we published the results of 918 cases of treatment of sexual discomfort and pain in FSD, indicating that FSD does have physiological factors and can achieve satisfactory clinical efficacy.

In terms of theoretical exploration, after 10 years, in 2013, we wrote the article “Enter Sex (Sexual intercourse) Pain Control Study”, which is a special study to explore “what happens to our bodies when it is difficult to have sex”, for those women who are disappointed, confused and even suffering from sex. And the long-misunderstood scientists and doctors who are still trying to figure it out.

The study includes the discussion of etiology and pathology, and introduces the thinking of “medical ethics” and “evidence-based medicine”. The research shows that: “There are differences in the diagnosis of disease between medicine of disease and medicine of sex, which respectively take” survival “and” quality of life “as the standard; Entering pain can not be pleasant does not affect survival, so it is not faced with traditional medicine, which is the root cause of a large number of patients who have nowhere to seek medical treatment”. There are physiological factors in the pathology of FSD: “A strong sense of pain can cause nerve hypersensitivity; negative emotions

produced by neurotransmitters can lead to inhibition of the endocrine system; And the high stretch of the vaginal mucosa needs to be repaired in a highly sensitive state and so on”.

More particularly, sex between husband and wife “is a physical and mental movement that requires collaboration, interaction, participation, and sharing”, FSD can cause difficulty or inability to have sexual intercourse, will affect the “pleasure” of others, and bring “discomfort” to others, FSD has become an associated symptom. In particular, the requirement of marital “sexual obligation” makes the patient in an extremely aggrieved, depressed and cornered state. FSD can even cause long-term asexuality, which often leads to the “anonymous fire” between husband and wife and couples, leading to the cold war, outbreak of confrontation, and even affair, which directly endangers the marriage relationship and family stability.

Sexual intercourse pain this symptom after the sociological amplification superposition, often produce more pain than the pain itself. Confusion, depression, fear, tolerance, grievance and helplessness are the common conditions of menopausal FSD patients. Therefore, FSD is not a manufactured disease, and the thesis systematically rejects the argument that FSD is a man-made disease.

Obviously, we still have some questions: Is FSD an isolated case for women about to enter menopause? Or is it a high probability event? Why is FSD so common during menopause? After years of thinking...

We (the authors of this article Zha Jianzhong and Li Songlin) put forward a series of inferences: from the menopause sex, there are “want” but “can not” difficult sexual situation, you can find that sexual instinct should include “want” and “can”, sexual instinct has a material basis? What determines “want” and “can”? For more than a century, after a large number of observation and experimental research, people have realized that androgen (T) is positively related to sexual desire, when T is at the peak, women show the demand for active sex, T has become a sufficient condition for female sexual behavior. “E2 stimulates the secretion function of secretory cells”, plays an important role in producing vaginal lubrication, and E2 is a necessary condition for female sex.

From reproductive cues, to lubrication, to keratinization, this series of subtle care, is not a mechanism? Is there some kind of compensatory mechanism in women? We discovered and recognized the mechanism of reproductive compensation. If this mechanism really exists, then it should be accepted by the world academic and gynecological community.

In July 2015, we wrote this mechanism into the abstract entitled “Sexual Characteristics of menopause”, which was successfully selected for the 22nd World Health Congress, and became one of the abstracts presented in the conference video. “Reproductive compensation mechanism” was really accepted by the world academic community, and F1000 also included this abstract.

Maria, editor-in-chief of the journal European Gynecology. Dr. Carter, who viewed the abstract on F1000, said in an email to us: “This will certainly advance current research in gynecology, leading to a sea change and paradigm shift in professional practice”. In November 2015, after international peer review, the European Union Gynecology journal published the full text of the “menopausal sexual characteristics” this article.

We have since confirmed this hypothesis through experiments. We observed that this mechanism also has the characteristics of “non-reproductive and non-compensatory” and “non-gradual withdrawal”, the post-menopausal hormone T is retained 71%, E2 is only 15%, menopause and after sex will shift from autonomous lubrication to reflex lubrication. This is the root cause of FSD problems in a large number of women entering menopause.

In response to these new ideas, a “reductive” study was conducted: 316 female students were randomly selected in a university for the elderly of 5,000 people to conduct a “research on the sexual passion of middle-aged and elderly women” in the form of questionnaires.

Respondents ranged in age from 41 to 86 and were divided into 10-year intervals. Results: Only 15% of E2 remained, leading to a large number of FSD problems, vaginal dryness or pain accounted for 35.0%, the proportion of groups: 50 group > 60 group > 40 group > 70 group. 12.8% of people caused by physical or psychological factors of sexual disharmony, the proportion of groups: 50 groups > 40 groups > 60 groups > 70 groups.

23.4% were uncomfortable because of long-term no sex, and the proportion of groups was: 70 groups > 40 groups > 50 groups > 60 groups; 11.1% of people think that no sex can not grow old together, the proportion of groups: 70 group > 50 group > 40 group > 60 group; The results showed that 71% of T can provide sustained sexual passion for postmenopausal women, and there is no absolute negative correlation with age. This fully demonstrates that reproductive compensation mechanisms do exist and will have an impact on women’s sexual health throughout their lives.

In 2012, Yale University School of Medicine published the results of a study, “Stress destroys self-control”, which revealed several important relationships between stress and the brain: the experiment found that “when there is no stress, the prefrontal lobe acts as a control center, coordinating higher cognitive functions such as judgment, decision making, and recall”. “Huge, uncontrolled stress can cause connections between neurons to break down, and prefrontal cortex function shuts down”.

Drawing on these latest achievements in stress and the brain, we have since chosen to focus on the dimension of gynecology and human sexuality to study the direction of “sexual stress and cognitive impairment”. In order to clearly and intelligently illustrate these associations between stress and brain function, we mathematized these relationships. Using the Cartesian coordinate system, through two points of no pressure and uncontrollable pressure, a two-point equation is obtained, including two important limits:

$$\lim_{x \rightarrow p_0} \left(-\frac{y_0}{0}x + y_0\right) = 0$$

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

In layman’s terms: “When stress x tends to be uncontrollable, it will cause the interruption of connections between neurons, and the prefrontal cortex function will be shut down” (cognitive impairment); When stress x approaches zero (when there is no stress), cognitive ability is at its best.

In particular, a 2012 Yale School of Medicine article, “Stress Destroys Self-control,” also refers to a 20-year-old experiment that turned off the function of the prefrontal cortex: “Stress causes neurochemical changes. In the prefrontal cortex, when neurons are stimulated by large amounts of norepinephrine and dopamine or the stress hormone cortisol, connections between neurons are disrupted and activity is suppressed”.

Inspired by this observation 31 years ago, we designed a related experiment to quantify the association between sexual stress performance and the corresponding values of three hormones. This project will allow the subjects to anonymously, using post-menopausal sexual experiences, to tell the truth about their life experiences, and according to the treatment of the project management doctor, the corresponding stress hormones (including norepinephrine (NO), dopamine (DO), cortisol (CO)).

Detecting stress hormones in people who have menopausal sex or non-reproductive sex, and assessing the association between risk of cognitive impairment and behavior, has not been seen in previous studies.

In October 2020, we chose to cooperate with Zhang Li (Professor), a chief physician of the Department of Gynecology at the campus hospital of a key university in China. After 14 months, we completed a study on women with high socioeconomic status who are in a close relationship after physiological changes. A small clinical study on the association between sexual stress and brain function (participants included 21 university teachers and nine university administrators, all in intimate relationships (married or unmarried with a partner) and all financially independent).

Due to limitations, although we have not determined what “large” is? Corresponding to what behavioral response. However, we found another key point, the hormonal threshold towards the absence of sexual pressure, and the corresponding behavioral response.

The results showed that: in terms of sex, the level of stress was positively correlated with hormone values, and couples who showed great satisfaction in their behavior or had no sexual need tended to be stress-free, and stress hormone values corresponded to low levels.

In September 2023, at the official invitation of the World Congress of Neuroscience and Psychiatry (2023WNPC), we gave a speech entitled “The Risk of Cognitive Impairment from Sexual Stressors” for the congress.

The reproductive compensation mechanism was proposed in 2015, and it has been eight years since, for the role of the mechanism, as the editor-in-chief of the *European Journal of Gynecology*, Maria. As Dr. Carter predicted in an email to us, “This will certainly advance current research in gynecology, leading to a sea change and paradigm shift in professional practice”.

In January 2023, the European Union Gynaecology published in full one of our articles entitled “A Study of Sexual Desire in middle-aged and Older Women”. In the article, “Women’s sexual passion does not have an absolute negative correlation with age”. For 2022, the WHO proposes to “ensure that women have access to appropriate health information and services to promote healthy ageing and a high quality of life before, during and after menopause”. The initiative provides theoretical support.

In November 2023, we were officially invited by the 26th World Health Congress (Turkey) to host and deliver a keynote speech at a symposium entitled “Reproductive Compensation as a Mechanism of lifelong Relevance to Women’s Sexual Health”.

Obviously, the reproductive compensation mechanism has become a new concept that has been widely concerned by the academic community [1-3].

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