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A Study on the Correlation Between Anger and Disease

Instructor: Shi Ziju

Author: Shi Fafu

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Table of contents

I. Introduction.....	1
II. Definitions of Anger and Disease	2
III. Relationship Between Anger and Disease	2
(I). Overview of How Anger Might Affect Physical Health	3
(II). The Correlation Between Anger and Specific Diseases	3
i. The Relationship Between Anger and Cardiovascular Disease	3
ii . Analysis of the Relationship between Anger and Immunological Dysfunction.....	7
IV. Conclusion	11
References.....	12

I. Introduction

In contemporary society, stress and emotional problems have become significant factors affecting human health. Among these, "chen" (anger), as a strong negative emotion, has drawn increasing attention for its impact on both physical and mental health. Numerous medical studies have shown that "chen" can affect health through various physiological pathways, including but not limited to increased blood pressure, accelerated heart rate, and altered immune system function. These immediate physiological responses, if prolonged, may lead to chronic health problems such as cardiovascular disease and impaired immune function.

This paper, adopting a medical perspective and utilizing a literature review method (medical literature, scriptures), and case-based reasoning, will explore the relationship between "chen" and disease. The focus will be on the correlation between "chen" and cardiovascular disease, as well as impaired immune system function. The aim is to demonstrate that "chen" not only leads to numerous diseases but can also exacerbate their severity.

The paper will be organized and written according to the following structure:

First, the definitions of "chen" and disease will be explored from both medical and Buddhist perspectives.

Second, the relationship between "chen" and disease will be examined from a medical standpoint, outlining how "chen" may affect physical health, exploring the immediate physiological responses of the body during "chen," and focusing on the correlation between "chen" and specific diseases (cardiovascular disease, impaired immune system function).

Finally, the conclusion section will summarize the impact of "chen" on health and conclude that "chen" not only leads to numerous diseases but can also worsen their severity. It is essential to manage emotions and maintain physical health.

II. Definitions of Anger and Disease

In the fourteenth issue of our journal, "A Study on the Relationship Between Doubt and Disease," disease was defined as a painful condition that causes harm and impairment to both the body and mind. As this has been established, we will not delve into this definition further in the present discussion.

In Buddhism, "chen" (anger) is considered one of the three poisons, and is a primary cause of cyclic existence and suffering. As stated in the 8th volume of the *Shurangama Sutra*, "Fourthly, the habit of anger clashes, giving rise to opposition. This opposition, once formed, is unending. The heart becomes hot, and it forges the breath into metal, thus creating mountains of knives, iron stakes, sword trees, sword wheels, axes, hatchets, spears, and saws. It is like a person harboring a grudge, with their murderous energy flying about. When these two habits collide, there arise palace tortures, cutting, chopping, hacking, mincing, piercing, pounding, and striking. "¹When people encounter opposition to what they desire, anger arises, causing the body and mind to become agitated. A feeling of displeasure and impulsive rage arises in the heart, and the body resorts to various means to harm others, inspiring fear and avoidance. This is the progression of anger. In medical terms, "chen" often manifests as hostility, irritability, anxiety, depression, and anger.

III. Relationship Between Anger and Disease

¹ Paramartha, tr., *The Shurangama Sutra: A Classification of the Causes of Existence According to the Tathāgata*, vol. 8, *Taishō Tripitaka*, no. 941, p. 143.

(I). Overview of How Anger Might Affect Physical Health

Medical research has shown that when individuals experience anger, their bodies release stress hormones such as adrenaline and cortisol. These hormones have a direct impact on the cardiovascular system, potentially leading to elevated blood pressure, accelerated heart rate, and even accelerated development of atherosclerosis. These physiological changes not only increase the risk of cardiovascular diseases but can also negatively impact the immune system, thereby reducing the body's resistance to illness. The American Psychological Association has confirmed that anger and anxiety can significantly increase the indexes of cardiovascular disease, reduce immune function, and exacerbate pain, causing damage to muscles and organs throughout the body. As Guo Jing-wen noted in her paper, "A Buddhist Perspective on Anger and Its Applications in Modern Society," a study by the American Psychosomatic Society revealed that individuals trapped in thoughts of resentment are more likely to experience elevated blood pressure and a higher risk of organ damage.² Evidently, anger has a significant impact on physical health.

(II). The Correlation Between Anger and Specific Diseases

i. The Relationship Between Anger and Cardiovascular Disease

The relationship between anger and cardiovascular disease has been extensively studied in the medical field, with a growing body of evidence suggesting that this emotional state has a significant negative impact on cardiovascular health. For instance, a recent clinical trial funded by the National Institutes of Health found that frequent anger may increase the risk of heart disease by limiting the ability of blood vessels to expand.³

² Guo, Jing-wen. "A Buddhist Perspective on Anger and Its Applications in Modern Society." [106NHU00183010-001.pdf](#). Accessed May 15, 2024.

³ National Institutes of Health (NIH). "NIH-Funded Clinical Trial Links Frequent Anger to Increased Risk of Heart Disease." [美国国立卫生研究院（NIH）资助的临床试验将频繁的愤怒与心脏病风险增加联系起来 | 美国国](#)

This impairment in vascular function can contribute to heart attacks and strokes. ⁴These findings provide a specific mechanism for how anger can affect physical health.

Furthermore, medical research has shown that anger, hostility, irritability, anxiety, depression, and other negative emotions associated with anger can exacerbate cardiovascular disease and increase post-operative mortality. As a joint study by Taiwanese medical research groups on psychosocial risk factors and cardiovascular disease noted:

Acute psychological stressors, such as anger lasting less than an hour, can immediately trigger a cascade of physiological responses that affect the heart. For instance, anger can elevate catecholamine levels, heart rate, and blood pressure, leading to electrolyte imbalances and increased cardiac workload. In individuals prone to anger, these cardiac effects may further contribute to pathological consequences, including arrhythmias, myocardial ischemia, plaque formation, and platelet rupture.⁵

This suggests that the emotional state of anger, especially when it is chronic and recurrent, is a significant psychosocial risk factor for cardiovascular disease. Moreover, this paper states:

Empirical research has shown that hostility is a risk factor that influences the occurrence and prognosis of cardiovascular disease. The so-called hostile personality is characterized by a long-term and persistent negative attitude or cognition towards others, accompanied by angry emotional states. This includes a range of feelings, from mild annoyance to intense anger, as well as aggressive

[立卫生研究院 \(NIH\)](#). Accessed May 15, 2024.

⁴ American Heart Association. "Anger May Start in Arteries for People at Risk of Heart Attack." [愤怒在心脏病发作风险中的作用可能始于动脉 | 美国心脏协会 \(heart.org\)](#). Accessed May 15, 2024.

⁵ Taiwanese Medical Research Team. "Psychosocial Risk Factors and Cardiovascular Disease." *Taiwan Journal of Medicine*, vol. 26, no. 1, 2002, pp. 1-10. <http://www.tsim.org.tw/journal/jour26-1/01.PDF>. Accessed May 15, 2024.

and unfriendly interpersonal interactions. Overall risk ratio analysis found that, in healthy adults, anger and hostility were associated with a higher incidence of coronary heart disease events; in patients with coronary heart disease, anger and hostility were also significantly associated with poorer prognosis.⁶

Anger and hostility, manifestations of the emotion of "chen," not only exacerbate cardiovascular disease but also decrease the likelihood of survival. This paper also argues that anxiety and depression are associated with cardiovascular disease in a similar manner. For example, anxious characteristics in postoperative patients slightly increase the risk of death and cardiac events; myocardial infarction patients with higher levels of depression have a lower rate of post-operative survival. This indicates that anger, hostility, irritability, anxiety, and depression can aggravate cardiovascular disease.

Furthermore, another medical article reports that frequent anger can increase the risk of cardiovascular disease by five times:

Dr. Redford Williams of Duke University's Center for Behavioral Medicine Research, who specializes in the study of anger and disease, published a study in late 2003 indicating that long-term anger can rapidly accumulate harmful cholesterol in the cardiovascular system, increasing the risk of fatal cardiovascular disease fivefold in otherwise healthy individuals compared to those who are calm. Moreover, individuals who struggle to control their anger are more likely to develop cancer, arthritis, diabetes, various allergies, and asthma.⁷

⁶ Same as note 5.

⁷ Medical Inspire. "【怒氣攻心】憤怒情緒會如何影響健康？常動氣會令心血管疾病風險提高 5 倍。" Medical Inspire,

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May 15, 2024.

Numerous studies have confirmed the devastating effects of anger on cardiovascular disease. There are also many concrete examples in real life. For instance, a news report highlighted the case of a 34-year-old mother who suffered a myocardial infarction. Doctors revealed that her frequent anger was the primary cause.⁸ This young mother was rushed to the emergency room due to chest tightness and was diagnosed with a myocardial infarction. Despite lacking any other risk factors, a thorough examination revealed that her frequent anger had caused her heart problems.

Another case exemplifies the cardiac complications induced by emotional factors, specifically cardiovascular spasm:

A 50-year-old woman who experienced cardiovascular spasms triggered by emotional distress. Despite generally good health, she developed chest discomfort after an argument with her family. She sought medical attention, and initial symptoms suggested an acute myocardial infarction. The hospital immediately arranged for a catheterization and prepared to perform angioplasty. However, the catheterization revealed a narrowing of her blood vessels. The doctor administered vasodilators, which immediately improved the narrowing, and she was ultimately diagnosed with cardiovascular spasms induced by sudden emotional excitement and increased stress.⁹

Cardiologist Dr. Liang Shi-yu diagnosed that patients with this condition may not have cholesterol plaques accumulating in their blood vessels, and

⁸ Sanlih News Network. "34-Year-Old Suffers Myocardial Infarction: Doctor Reveals Frequent Anger as Main Cause." Sanlih News Network, <https://tw.news.yahoo.com/%E5%A5%B934%E6%AD%B2%E5%BF%83%E8%82%8C%E6%A2%97%E5%A1%9E-%E9%86%AB%E6%9B%9D%E6%84%9B%E7%94%9F%E6%B0%A3%E6%98%AF%E4%B8%BB%E5%9B%A0-085026336.html>. Accessed May 15, 2024.

⁹ Dr. Liang Shi-chau. "Relationship Between Emotional Disorders and Heart-Related Diseases." Hong Kong Cardiac Centre, <https://www.hkcardiaccentre.com/article/426>, Accessed May 29, 2024.

their vascular endothelium may appear normal. However, emotional problems can cause the blood vessels to spasm.

This suggests that "chen" not only can lead to cardiovascular diseases but can also exacerbate existing conditions.

ii. Analysis of the Relationship between Anger and Immunological Dysfunction

Next, we will analyze the relationship between anger and impaired immune system function. From a medical perspective, emotional fluctuations, particularly anger, can indeed affect the human immune system. Studies have shown that when people feel angry, the level of stress hormones in the body, such as cortisol, increases. Elevated cortisol levels suppress the immune system, reducing the number of certain immune cells, thereby decreasing the body's resistance to disease. This may lead to impaired immune function and make the body more susceptible to infection. In a medical article titled "Understanding the Harms of Anger in One Image," it is stated:

Anger causes an increase in the level of the stress hormone cortisol in the body. When there is too much cortisol in the body, it can affect the functioning of the immune system, potentially causing the immune system to attack normal cells in the body, leading to immune dysregulation. An increase in cortisol can also lead to a decrease in two types of immune cells that are closely related to tissue repair in the human body, resulting in poorer self-repair ability and slower wound healing. It can also lead to stress-related gastrointestinal diseases and weaken brain cells, increasing the pressure on cerebral blood vessels.¹⁰

¹⁰ Heho Health. "Understanding the Harms of Anger in One Image." Heho Health, [一張圖看懂，愛生氣對身體有多傷 - Heho 健康](#), Accessed May 15, 2024.

It is evident that anger can lead to immune dysregulation and various other diseases. Chronic emotional stress and anger can also lead to chronic inflammation, which is linked to a multitude of diseases, including cardiovascular disease, diabetes, and even certain types of cancer. Additionally, emotional fluctuations can cause autonomic nervous system dysfunction, which can affect sleep, the immune system, and the metabolic system, thereby impacting overall health.

As reported in the article "Cultivating a Habit of Anger Fosters a Disease-Prone Constitution: Three Time Slots a Day to Avoid Anger and Accumulate 'Blessings' for Health," medical expert Dr. Losang Gyaltsen believes that:

When emotional instability occurs, it first impacts "sleep," followed by the "immune system," and lastly, the "metabolic system." Consequently, individuals experiencing significant emotional fluctuations often develop symptoms such as constipation, irritable bowel syndrome, and hyperventilation, which are collectively known as autonomic nervous system dysfunction. Over time, chronic hyperacidity can lead to chronic gastritis or even gastric cancer. Prolonged metabolic abnormalities may result in intestinal diseases or colon cancer. Chronic immune system dysregulation can cause blood pressure and blood sugar to spike, leading to a vicious cycle throughout the body.¹¹

Dr. Losang Gyaltzen's perspective further substantiates the notion that "chen" (anger) can impair the immune system and pose significant health risks. Since these detrimental effects accumulate over time, they are often overlooked.

¹¹ Early Bird Health. "Cultivating a Habit of Anger Fosters a Disease-Prone Constitution: Three Time Slots a Day to Avoid Anger and Accumulate 'Blessings' for Health." Early Bird Health, [嗔恨習氣養出易生病體質！一天3個時段不生氣，為健康積「福報」 \(edh.tw\)](#), Accessed May 15, 2024.

A 1995 study published in the *Journal of Advancement in Medicine* demonstrated that five minutes of anger can suppress the immune system for at least five hours. The experiment was conducted as follows:

In this experiment, volunteers who recalled negative emotional experiences for five minutes exhibited a decrease in immunoglobulin A (IgA) levels, which persisted for at least five hours. IgA is a crucial antibody in the human immune system that helps protect against invading bacteria and viruses. Conversely, another group of volunteers who focused on positive emotions (care and compassion) for five minutes experienced an increase in IgA levels, which remained elevated for at least six hours.¹²

Therefore, it can be concluded that anger reduces the body's immune system antibody capacity, making it more susceptible to bacterial and viral invasions.

In summary, anger can lead to immune dysregulation and various diseases.

Similarly, in Buddhist teachings, anger is considered a mental poison. Not only does it cause psychological distress, but it also harms physical health. Buddhist scriptures mention that anger opens up a million obstacles, including various diseases. As stated in the 49th chapter of the *Avatamsaka Sutra*:

I have not seen any fault as great as a Bodhisattva who harbors anger towards another Bodhisattva. Why is that? My sons, when a Bodhisattva harbors anger towards another Bodhisattva, a million obstacles are created. What are these million obstacles? They are: ... many diseases; ... eye obstacles; ear obstacles; nose obstacles; tongue obstacles; body obstacles; mind obstacles.¹³

¹² Same as note 7.

¹³ Dharmagupta, tr., *Avatamsaka Sutra*, vol. 49, Taisho Tripitaka, vol. 10, p. 257-258.

It is evident that anger can invite various diseases as karmic retribution. Furthermore, the *Kṣitigarbha Sutra* (Chapter 1) states, "Those who encounter slanderers will suffer from mouth sores. Those who encounter anger will suffer from ugliness and disability. ... Those who slander the Three Jewels will become blind, deaf, mute, and crippled."¹⁴ This scripture further illustrates that the karma of anger can manifest as physical ailments, including congenital disabilities.

Similarly, the *Lotus Sutra* (Chapter 2) states:

If anyone slanders this sutra, despises and hates those who read, recite, or copy it, their karmic retribution is as follows. ... If they are reborn as a human, their senses will be dull, and they will be short, deformed, lame, blind, deaf, or hunchbacked. Whatever they say, people will not believe them, and their breath will always be foul. They will be possessed by ghosts and demons. They will be poor and lowly, serving others. They will suffer from many diseases and be thin. They will have no one to rely on. Even if they befriend others, people will not care about them. Whatever they obtain, they will soon lose. If they practice medicine and treat illnesses according to prescriptions, they will only worsen the diseases or even cause death. If they themselves fall ill, no one will treat them, and even if they take good medicine, their condition will worsen.¹⁵

Furthermore, as the *Lotus Sutra* indicates, those who slander those who read, recite, or copy this sutra and harbor anger towards them will suffer from numerous illnesses. Paradoxically, the more they seek medical treatment, the worse their conditions become. This further demonstrates the devastating impact of anger on one's health.

¹⁴ Dharmagupta, tr., *Kṣitigarbha Sutra*, vol. 1, Taisho Tripitaka, vol. 13, p. 781.

¹⁵ Kumarajiva, tr., *Lotus Sutra*, vol. 2, Taisho Tripitaka, vol. 9, p. 15.

In conclusion, whether from the perspective of modern medicine or Buddhist wisdom, anger exerts a profound influence on overall health. It can not only lead to cardiovascular diseases and immune dysregulation, but also exacerbate existing conditions.

IV. Conclusion

The primary objective of this paper is to explore the correlation between anger and diseases. From both medical and Buddhist perspectives, it can be concluded that anger not only triggers various diseases but also exacerbates existing conditions. This paper demonstrates how anger might contribute to aggravating diseases by examining cardiovascular diseases and immune system dysfunction in medical contexts. This research aims to enhance public awareness of the significance of emotion management, particularly anger, in health maintenance, thereby aiding in the prevention and treatment of related diseases.

However, this paper does not delve into strategies for managing anger or preventive and therapeutic measures. Future research could potentially explore these aspects to provide greater benefits to the public.

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