

# Exploring the Treatment of Dementia by Restoring the Lesions of the Nine Orifices

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**Abstract:** The article discusses the inseparable relationship between the nine orifices and the brain orifices in terms of physiology and pathology; Abnormal nasal function can lead to lung dysfunction, gradually leading to dementia; Abnormal oral function can lead to spleen dysfunction, gradually leading to dementia; Abnormal tongue function can lead to heart dysfunction, gradually leading to dementia; Abnormal eye function can lead to liver dysfunction, gradually leading to dementia; Ear dysfunction can lead to kidney dysfunction, gradually leading to dementia; two lower orifices dysfunction can lead to renal dysfunction, gradually leading to dementia. And methods for treating dementia by restoring the pathological changes of the nine orifices. Therefore, the recovery of lesions in the nine orifices is taken as the starting point for clinical treatment of dementia, in order to provide reference for clinical prevention and treatment of dementia.

**Keywords:** Pathological changes in the nine orifices; Five Organs Dysfunction; Dementia

## 1. Introduction

Dementia is a slowly progressive neurodegenerative disease. With the increasing aging of the global population, it has become a challenge in human medicine. The family and social burdens caused by dementia are constantly increasing, therefore, the prevention and treatment of dementia is extremely important. Traditional Chinese medicine has unique advantages in promoting intelligence and alleviating aging. And there are various treatment methods with significant therapeutic effects<sup>[1]</sup>. This article discusses the physiological and pathological relationship between the nine orifices and the brain orifices; The pathological changes in the nine orifices lead to dysfunction of the organs, gradually leading to dementia; And the clinical application of restoring the pathological changes of the nine orifices to treat dementia is discussed in three aspects, in order to provide reference for clinical prevention and treatment of dementia.

## 2. The relationship between the "nine orifices" and the brain orifices

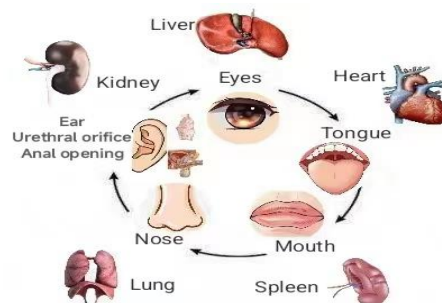


Figure 1: The relationship between the nine orifices and the five internal organs

The "nine orifices" include the seven orifices of the eyes, ears, mouth, nose, and the two yin points before and after. The seven orifices are the combination of the head, face, eyes, ears, nose, mouth, and tongue. Also known as Shangqiao or Qingqiao. There are two yin orifices, referring to the two yin

points before and after. Also known as the lower orifice. There are two types of brain orifices: tangible orifices and intangible orifices. The conceptual category that can be attributed to the nine orifices. The two are closely related and inseparable in physiology. Pathological changes in the nine orifices can cause the brain to lose nutrients; The loss of nutrition or blockage of the brain can also lead to pathological changes in the nine orifices, which share a wide range of physiological and pathological similarities with the brain orifices( as shown in fig.1).

### 3. Abnormal function of the nine orifices and dementia

The normal function of the five organs can be demonstrated through the seven orifices. Therefore, Whether the lung function is normal can be displayed through the nostrils, and if the lung function is normal, the nostrils can smell the fragrance and stink; Whether the heart function is normal can be observed and displayed through the tongue. If the heart function is normal, the tongue can perceive acidity, bitterness, sweetness, bitterness, and saltiness; Whether the liver function is normal can be displayed through the eyes, and if the liver function is normal, the eyes can distinguish colors; Whether the spleen function is normal can be manifested through the mouth, and if the spleen function is normal, food can be perceived in the mouth; Whether the renal function is normal can be displayed through the ears, and if the renal function is normal, the ears can hear sound; Dysfunction of the five organs can cause lesions in the seven orifices. The pathological changes of the seven orifices are often an external manifestation of visceral diseases<sup>[2]</sup>. If the nine orifices undergo pathological changes, the five visceral functions become dysfunctional, leading to cerebral obstruction or malnutrition. Prolonged illness can lead to forgetfulness, delayed thinking, decreased intelligence, and ultimately dementia.

#### 3.1 Abnormal nasal function can lead to lung dysfunction, gradually leading to dementia

The nose must rely on the coordination of lung qi to exert its ventilation and olfactory functions. The normal function of the lungs can be demonstrated through the nasal cavity, while if the lungs are diseased, the nasal cavity is blocked. The inability to smell a fragrance or foul smell through the nose, stuffiness, and malfunction of the sense of smell are external manifestations of pulmonary dysfunction. The lungs control breathing. By promoting and subduing, exhaling old and absorbing new, inhaling clear qi, expelling turbid qi, promoting human metabolism, and providing the brain with the necessary oxygen. If the lung function is abnormal and the clearing qi is insufficient, it cannot be replenished to the brain. Or if turbid qi does not decrease, blood stasis obstructs the brain meridians. Over time, it can cause inattention, confusion, and apathy, leading to dementia. Modern research has found that cognitive decline may be related to olfactory dysfunction<sup>[3]</sup>. And it is pointed out that odor recognition deficiency is a characteristic of Alzheimer's disease and other dementia<sup>[4]</sup>, and olfactory function evaluation can be used as a clinical indicator for diagnosing AD and early AD<sup>[5,6]</sup>. ( as shown in fig.2).

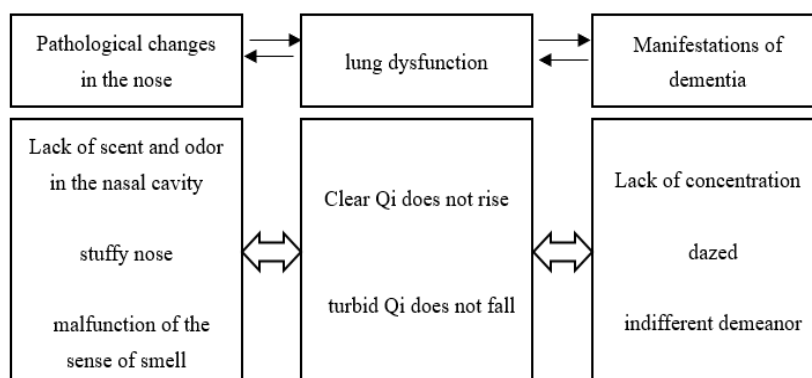


Figure 2: Relationship between nose, lung, and dementia

#### 3.2 Abnormal oral function can lead to spleen dysfunction, gradually leading to dementia

The function of the mouth and lips in eating is inseparable from the healthy movement of the spleen and the filling of spleen blood. Splenic dysfunction can be manifested through the oral cavity, while if the spleen is diseased, the oral cavity is blocked. The inability of the oral cavity to perceive and distinguish food, reluctance to eat, etc. can reflect spleen dysfunction. The spleen can generate the

nutrients needed by the human body, promote the generation of qi and blood, and nourish the brain. If the spleen is diseased, the circulation of qi and blood is not smooth, qi stagnation and blood stasis are not sufficient, and the internal obstruction of dampness and turbidity leads to the accumulation of dampness and phlegm, and the accumulation of phlegm and blood stasis leads to obstruction of the brain. Over time, symptoms such as forgetfulness, intellectual decline, and delayed thinking can occur, leading to dementia<sup>[7]</sup>. Modern research has shown that diet plays a role in cognitive decline<sup>[8]</sup>, and dementia patients often experience varying degrees of autonomic dysfunction and gastrointestinal symptoms before and after onset, such as poor appetite and constipation<sup>[9]</sup>.

**3.3 Abnormal tongue function can lead to heart dysfunction, gradually leading to dementia**

The tongue can play a crucial role in distinguishing taste, while the heart yin and blood play a crucial role. Whether the heart function is normal can be demonstrated by the tongue, while if the heart is diseased, the tongue is blocked. The inability of the tongue to distinguish taste, abdominal distension and discomfort, and abnormal taste are external manifestations of abnormal heart function. The heart governs the blood vessels and the mind. Heart qi is sufficient, heart blood runs normally, and the upward flow fills the brain. Regulate the physiological functions of the brain to ensure coordination and order. Abnormal cardiac function, insufficient blood flow, inability to replenish the brain, mental disorders, and confusion in the brain. Over time, symptoms such as confusion and delayed response can lead to dementia<sup>[10]</sup>. Modern research has confirmed a potential connection between changes in taste recognition and the onset and development of dementia<sup>[11]</sup> (as shown in fig.3).

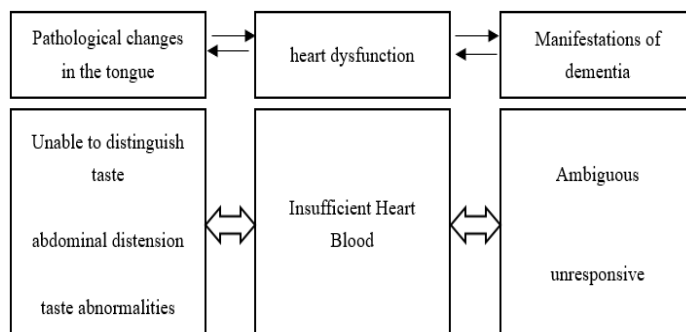


Figure 3: Relationship between tongue, heart, and dementia

**3.4 Abnormal eye function can lead to liver dysfunction, gradually leading to dementia**

Both eyes need to have the function of seeing objects and distinguishing colors, which requires the nourishment of liver blood and the normal release of liver qi. Abnormal liver function can be manifested through both eyes, while liver disease results in abnormal eye function. The inability of the eyes to distinguish colors, decreased visual acuity, and visual impairments are often external manifestations of liver dysfunction. The liver can dredge and store blood. Liver blood depletion, inability to generate qi and blood, and loss of nourishment in the brain and spinal cord; Difficulty in relieving symptoms, emotional depression, easy stasis, phlegm generation, and obstruction of clearing the orifices. Over time, they remain silent and have an indifferent expression, leading to dementia. Modern research evidence suggests that eye changes may be used as predictive values or diagnostic tools for AD assessment<sup>[12]</sup> (as shown in fig.4).

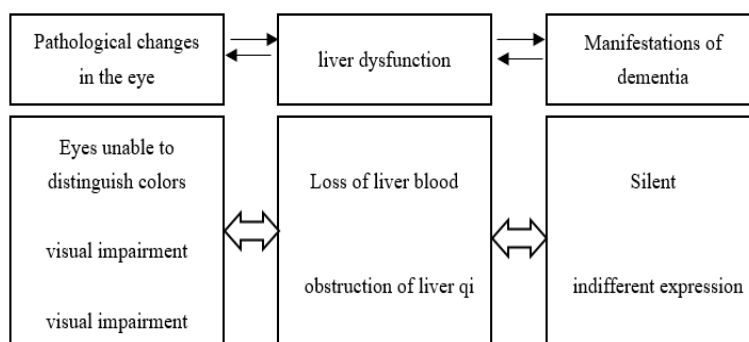


Figure 4: Relationship between eye, liver, and dementia

### 3.5 Ear dysfunction can lead to kidney dysfunction, gradually leading to dementia

The sound that can be heard in both ears is inseparable from the nourishment of the essence in the kidneys. Renal dysfunction can be manifested through both ears. Kidney disease results in abnormal ear function. The inability of the ear to distinguish sound, tinnitus, deafness, and hearing abnormalities are external manifestations of renal dysfunction. Kidney essence is the foundation of life, serving as the material foundation for the growth, development, and various functional activities of the human body. Kidney essence transforms qi into marrow, which provides the material foundation for the brain. Kidney disease, insufficient generation of kidney essence, decreased marrow and brain, loss of nourishment in the brain, and initial symptoms such as good or wrong speech, forgetting after speech, and delayed thinking<sup>[13]</sup>. Gradually developing dementia. Modern research suggests that hearing loss is a risk factor for dementia<sup>[14]</sup>, or a precursor to dementia, and the two may interact and cause each other<sup>[15]</sup> (as shown in fig.5).

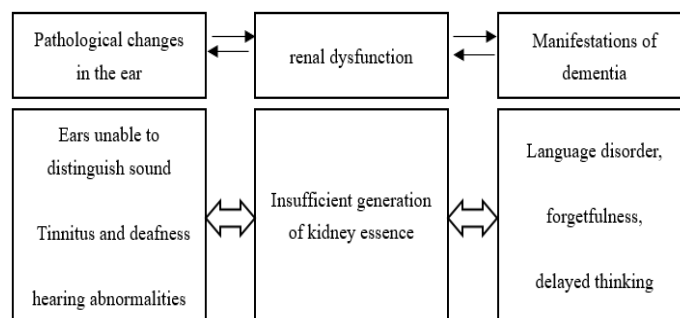


Figure 5: Relationship between ear, renal, and dementia

### 3.6 Two lower orifices dysfunction can lead to renal dysfunction, gradually leading to dementia

Two lower orifices Two Yin refers to the anterior and posterior genitalia, and the anterior genitalia is the general term for the urethra and external genitalia. The excretion of urine, frequency of urination, and oliguria are all affected by renal function. The posterior yin is the channel for excreting feces, and the excretion of feces is closely related to kidney function. Renal dysfunction can lead to constipation or diarrhea. Abnormal opening and closing of the two yin, as well as obstructed urination and defecation, are external manifestations of renal dysfunction. Dysfunction of the kidney, deficiency of kidney yang, deficiency of kidney yin, insufficient generation of kidney essence, inability to transform marrow and fill the brain, inability to expel turbid fluid from the bladder, imbalance of water metabolism, and accumulation of dampness into phlegm and obstruction of the orifices; Over time, symptoms such as forgetfulness, intellectual disability, and delayed thinking can lead to dementia. Modern research has found that gastrointestinal symptoms such as constipation may be early markers of cognitive impairment in Parkinson's disease<sup>[16]</sup>.

## 4. Clinical Application of Chinese Medicine Treatment

### 4.1 Single drug treatment

Single traditional Chinese medicines that improve cognitive function in dementia patients by restoring lesions in the nine orifices include *Acorus tatarinowii*, *Polygala tenuifolia*, *Mutong*, *radix scrophulariae*, etc. *Acorus tatarinowii*, also known as *Jiujie Acorus tatarinowii*, belongs to the category of opening orifices. Play an important role in the treatment of dementia<sup>[17]</sup>. *Acorus tatarinowii*, is fragrant and warm, capable of dispelling cold and removing dampness. Its fragrance can dissolve dampness and turbidity, assist the spleen in activating qi, and clear the mouth and orifices. It can also stimulate the circulation of qi, regulate the qi flow, increase the level of clear yang, decrease the level of turbid yin, facilitate the airway, and improve the eyesight and ears. At the same time, the fragrance of *Acorus tatarinowii* is light and refreshing, with more energy than taste, and the pungent and horizontal movement, dispersing the heart and making it pleasant<sup>[18]</sup>. By opening the nine orifices externally and nourishing the five internal organs internally, the brain becomes clear and the marrow is nourished to treat forgetfulness. Modern pharmacological research shows that *Acorus tatarinowii* can treat dementia by preventing the activation of microglia, inhibiting neuronal apoptosis, protecting dopaminergic neurons, etc.<sup>[19]</sup>.

*Polygala tenuifolia* can play a role in various types of dementia<sup>[20]</sup>. *Polygala tenuifolia* can dissolve phlegm and promote qi, eliminate evil energy, supplement deficiencies, and benefit the nine orifices. The nine orifices function normally, dispelling pathogenic factors, tonifying deficiency, and calming the nerves. Therefore, it can improve hearing and vision, enhance intelligence, enhance memory, and alleviate dementia symptoms. Modern pharmacological research shows that *Polygala* can effectively combat neuroinflammation, cell oxidative damage, and neuronal apoptosis in the treatment of dementia<sup>[20]</sup>.

Mutong has a spicy and flat taste. Mutong can be clinically used to treat amnesia<sup>[21]</sup>, which can enter the lung meridian, induce heat to descend, and facilitate urination; Its nature is beneficial, good at promoting yin and yang, internally promoting the nine orifices, and externally promoting blood circulation. Nine orifices are unblocked, qi and blood are replenished, the brain is cleared of marrow and feet, thereby improving dementia symptoms. Modern research shows that Aktoside D can protect hippocampal neurogenesis from microglia mediated inflammation, and improve cognitive impairment through PI3K - Akt pathway<sup>[22]</sup>.

*Radix scrophulariae*, with a dark color and salty taste, is essential for tonifying the kidney meridian. *radix scrophulariae* can tonify deficiency, benefit essence, nourish yin, and open the mind. Brighten the eyes and replenish the brain, improve cognitive impairment, and alleviate dementia symptoms. Modern research shows that the component geniposide in *Scrophulariae* can inhibit A  $\beta$  The accumulation of AD may play a protective role in the nervous system and may prevent and inhibit the progression of AD<sup>[23]</sup>.

#### **4.2 Compound therapy**

Traditional Chinese medicine formulas fully utilize the advantages of traditional Chinese medicine in syndrome differentiation and treatment, and have accumulated rich experience in long-term clinical practice for complex pathogenesis and relatively determined syndromes, providing learning and reference significance for clinical prescription medication. Modern medicine shows that traditional Chinese medicine prescriptions can synergistically treat dementia at multiple levels and in all directions through multiple target and pathway mechanisms<sup>[24]</sup>. There are early records in the ancient books of the compound prescription for treating dementia by restoring the pathological changes of the nine orifices, such as the ancient formulas Kaixin Powder and Zhuangyuan Wan<sup>[25]</sup>; The current clinical formula for treating dementia is to restore the lesions of the nine orifices. For example, in the formula for nourishing the heart, tonifying qi, and promoting blood circulation, a small amount of cohosh and kudzu root are combined to enhance the qi of spleen and stomach clearing yang, clear yang, and reduce turbid yin. This can achieve the effect of brain, intelligence, and ear clarity in treating forgetfulness, improving dementia symptoms, and improving clinical efficacy<sup>[26]</sup>. The decoction is Yishen Tongbian Wan. Peach kernel and cooked rhubarb in the formula mainly have the effect of clearing the internal organs and relieving turbidity, and the symptoms of dementia are significantly alleviated<sup>[27]</sup>.

#### **4.3 Acupuncture Treatment**

Acupuncture and moxibustion treatment has a positive effect on improving patients' cognitive ability, intelligence, and living ability. Combined with years of clinical exploration, practice, and research, physicians have summarized a set of more mature acupuncture and moxibustion treatment methods<sup>[28]</sup>. Clinical studies have confirmed that "sniffing three needles" electro-acupuncture intervention can improve the memory function of mice with PDD model and enhance their learning and memory ability. The mechanism may be related to the reduction of C1q and C3 expression in the hippocampal CA1 region and the decrease of microglia phagocytosis<sup>[29]</sup>. The "Sniffing Three Needles" electro-acupuncture intervention is effective in the treatment of vascular dementia, with significant improvement in cognitive function, fewer acupuncture points and more convenient operation<sup>[30]</sup>. Electro-acupuncture in the ocular region is effective in improving cognition and daily living skills in patients with dementia, with significant efficacy and few side effects. The mechanism of action may be related to the reduction of inflammatory response and lipid peroxidation damage in brain tissue<sup>[31]</sup>.

#### **4.4 Other therapies**

The ear is closely connected to the organs and meridians, and ear acupoint pressing can improve the function of the organs, promote blood circulation and unblock the meridians, and replenish qi and brain. Modern pharmacological research has found that ear acupoint pressing can increase the blood supply to

the brain, promote blood circulation, improve the hypoxic and ischemic state of brain tissue, and play a certain protective role in cognitive function<sup>[32]</sup>. Research has shown that embedding seeds in ear acupoints can effectively improve cognitive function and enhance daily living abilities<sup>[33]</sup>. Traditional Chinese medicine exercises, such as Baduanjin and Tai Chi, are a complete and independent set of fitness techniques that regulate the balance of yin and yang through breathing, exhalation, and gentle and slow body movements, running qi and blood, and acting on the five organs and six internal organs. Research has shown that long-term Ba Duan Jin exercise can improve cognitive function<sup>[34]</sup>. Tai Chi is an aerobic exercise that requires concentration and integration of mind and body when practicing. Therefore, it is possible to concentrate and improve memory. At the same time, it can prevent the occurrence of dementia<sup>[35]</sup>.

## 5. Summary

So far, traditional Chinese medicine has a long history of treating dementia with diverse methods and obvious therapeutic effects. Cognitive impairment and memory impairment have significantly improved<sup>[36]</sup>. The "nine orifices" are closely related to the physiological and pathological changes of the brain orifices. If the nine orifices are affected, the five visceral functions will be disrupted, and the brain will be blocked or deprived of nourishment, leading to dementia. Therefore, discussing the treatment of dementia from the perspective of restoring the pathological changes of the nine orifices is intended to provide reference for the clinical prevention and treatment of dementia in traditional Chinese medicine.

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