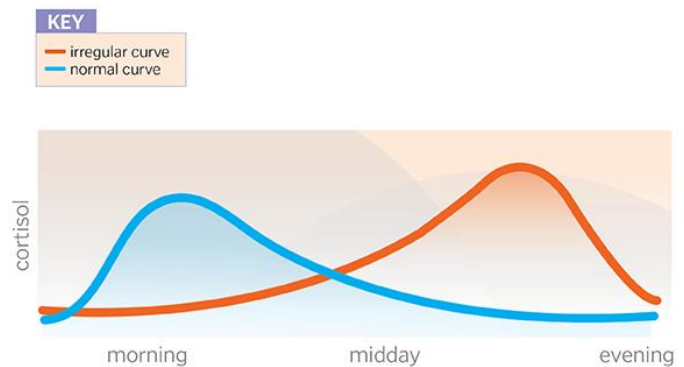


Insomnia is a sleep disorder causing difficulty falling asleep or inability to sleep throughout the night leading to insufficient sleep. Symptoms of insomnia include sleepiness during the day, fatigue, low energy, diminished mental alertness, and issues with concentration. Insomnia can be acute, lasting 1 night to a few weeks, or chronic, lasting 3 nights a week for 3 months or more. There are two main types of insomnia, primary and secondary. Primary insomnia is classified as sleep problems that are not linked to another health condition. Causes of primary insomnia include noise, temperature, or changes in sleep schedule such as jet lag. Secondary insomnia is usually more chronic and is due to a health condition.

Liver Deficiency

In Traditional Chinese Medicine (TCM), imbalances of the inner organs can cause deficiencies which can lead to insomnia. The most common cause of difficulty falling asleep is hepatic insufficiency or liver Yin deficiency in TCM. Important hormones that regulate the sleep-wake cycle are metabolized and cleared by the liver. This includes both melatonin and cortisol. In patients with hepatic insufficiency, melatonin clearance is slow and the levels of melatonin is high during the daytime. This causes the modification of melatonin secretion patterns with the peak of secretion being delayed and therefore the sleep onset is delayed as well.¹ Patients may experience bouts of daytime fatigue or drowsiness followed by night-time alertness when the liver finally breaks down the melatonin circulating in the blood.

The circadian rhythm of cortisol secretion has a waveform pattern with the nadir for cortisol occurring at about midnight. Low cortisol levels are necessary for falling asleep. Cortisol begins its rapid rise after the first morning awakening and continues for about 60 minutes. This is called the awakening response. Cortisol in the blood is supposed to be cleared by the liver during the day so that its levels are low by nighttime. Elevated cortisol levels at night can cause difficulty falling asleep. Stress, diet, and obesity can upset the liver leading to a liver deficiency. Poor liver function from a liver deficiency due to stress and anxiety can compromise the cortisol clearance and lead to an increase in cortisol levels in the body. Chronic stress or anxiety can continually overwhelm the liver leading to excess cortisol staying in the bloodstream for longer, making it difficult to fall asleep, causing chronic insomnia.



Stress can also deplete the liver's storage of glycogen. Eventually, the liver becomes fatigued from producing abnormal amounts of glycogen which leads to high blood sugar levels, upsetting the sleep pattern. Diet can also affect the liver since it is the organ that breaks down fats. If the liver is deficient, it can't break down fats properly which can lead to digestion issues such as diarrhea or constipation, both of which can affect your sleep pattern. Unfortunately, sleep deprivation can also impact digestion, so a vicious cycle can occur.

On top of the insomnia symptoms, a liver Yin deficiency also includes symptoms of irritability, timidity, and frequent fearful awakening. A common symptom among liver cirrhosis patients includes difficulty falling asleep. Many studies have been done and recent findings indicate that delayed sleep onset and circadian variations may also have to do with the core body temperature.¹ Heat loss through vasodilation is essential for sleep onset. Cirrhotic patients are unable to decrease their distal temperatures at the end of the day leading to impaired sleep.¹ Although serious health conditions such as fatty liver disease and cirrhosis are linked to sleep disturbances, minor upsets can also bring about a noticeable change in sleep patterns.

Heart Qi and Kidney Yin Deficiency

The heart and kidneys are aligned in TCM. The heart is a fire organ in TCM while the kidneys represent water in TCM. The theory comes from the idea that water ascends while fire descends. Harmony between the heart and kidney comes from this dynamic relationship of descending and ascending movement of Yin and Yang in the heart and kidney. The heart Yang Qi descends to strengthen the kidneys while the kidney ascends to help the heart Yin fluid, to prevent heart Heat. If the heart-kidney balance is disturbed, it can cause a condition called "Xin Shen Bu Jiao" in TCM, which means the heart and kidney are disconnected. This can lead to heart palpitation or missing heart beats and even arrhythmia in severe case with symptoms including dream-disturbed sleep, night sweats, and insomnia.

Kidney Yang Deficiency

Kidney disorders due to Kidney Yang deficiency have been associated with a variety of sleep-related conditions. The most common problem caused by poor kidney function is trouble staying asleep. Patients usually experience difficulty falling back to sleep after waking up during the night. Kidney dysfunction strongly affects physiological functions that can cause disturbances in normal homeostasis, therefore, affecting sleep. Ineffective glomerular filtration leads to an inability to maintain homeostasis with respect to various metabolic products such as bioelements and proteins.

Brain Heat

Chemical imbalances in the brain can also cause insomnia. Glutamate excitotoxicity and the resulting increased free radical levels in the brain in combination with reduced GABA, an inhibitory transmitter, can cause insomnia because our brain is an "excited" mode. A recent study was performed on individuals with chronic insomnia that described the brains of individuals with chronic insomnia have lower levels of GABA in the brain. If levels of GABA are low, then individuals have a hard time "shutting off" their brains at night time. An overactive mind is a key feature of psychophysiological insomnia. Patients who suffer from Brain Heat also typically have symptoms of restless leg syndrome and numbness in certain parts of the body.

Heart Heat

Heart Heat can cause hyperactivity of the HPA axis. The initiation of sleep occurs when HPA axis activity is at its lowest, and sleep deprivation is associated with HPA activation. Heart Heat or Heat Fire can cause restricted blood circulation to the extremities including the brain affecting sleep and causing insomnia. Heart Heat can also trigger liver yang rising and cause heart-mind restlessness syndrome which leads to HPA axis hyperactivity, racing thoughts and insomnia.

Wellness Recommendation

The recommendation for insomnia depends upon the condition or factors that are causing insomnia.

Liver Deficiency

For patients who suffer from insomnia especially with difficulty falling asleep due to a liver deficiency, the wellness recommendation includes Brown and LC Balancer. Brown helps improve overall liver health and repairs liver damage. By improving liver function, the melatonin can be cleared before the day starts and the cortisol can be cleared before the night starts. This will help resume the circadian rhythm to a healthy level to help with difficulty falling asleep. Herbal ingredients in Brown have been shown to improve general wellbeing and immune functions to help combat chronic stress and anxiety. Brown also helps to address diet-related insomnia by improving liver function and allowing the liver to break down fats more appropriately. This leads to improved digestion and a better night's sleep. LC Balancer helps enhance microcirculation by improving microcapillary structure which improves overall blood flow and nutrient absorption. It helps diminish symptoms of fatigue and tiredness as well as circulate excess cortisol from the blood. American ginseng, one of the main ingredients in LC Balancer, has been shown to many effects on the nervous system including increasing hippocampal excitability which helps reverse impairment from stress. Through utilizing both Brown and LC Balancer, melatonin and cortisol can be regulated to normal levels. Patients can experience symptoms relief in a couple of days and two to three weeks is recommended for significant results.

For patients that have fatty liver disease or cirrhosis, please see the respective protocols for the full recommendation.

Heart Qi and Kidney Yin Deficiencies

For patients who suffer from insomnia especially with dream-disturbed sleep due to Heart Qi and Kidney Yin deficiencies, the wellness recommendation includes PaceKeeping. PaceKeeping helps enhance heart Qi and calms the mind. Herbal ingredients in Pacekeeping work to help the heart muscles contract accordingly and address the symptoms of heart palpitation or missing heart beats and arrhythmia. PaceKeeping also helps nurture Kidney Yin and connect the Heart with the Kidney to resolve the condition of “Xin Shen Bu Jiao”. Patients can experience symptoms relief in a couple of days and two to three weeks is recommended for significant results.

Kidney Yang Deficiency

For patients who suffer from insomnia especially with difficulty staying asleep due to a Kidney Yang deficiency, the wellness recommendation includes Xcel and LC Balancer. Xcel improves kidney function to enhance the filtration and balancing of minerals. Herbal ingredients in Xcel have been shown to increase the number of glomerular endothelial and mesangial cells to enhance the kidneys ability to filter waste from the blood and improve sleep quality. LC Balancer improves systemic microcirculation to help reestablish homeostasis and improve blood mineral levels. Patients can experience symptom improvement in a couple of days and two to three weeks of treatment is recommended for significant improvement.

For patients who suffer from CKD, please see the Chronic Kidney Disease protocol for the full recommendation.

Brain Heat

For patients who suffer from insomnia due to Brain Heat, the wellness recommendation includes Calm or Platinum. If the patients’ onset of insomnia has just occurred, Calm helps relax, reset, renew and unwind the brain by increasing inhibiting neural activity, decreasing the excitatory neural activity, reducing free radical levels and brain inflammation and stabilizing the brain blood barrier. Green tea extract in Calm helps to achieve the desired effects by improving psychopathological symptoms, cognitive, and brain function.²

If patients’ insomnia has become a chronic condition, Platinum is recommended to help remove the Brain Heat and calm down the activity caused by the excessive exciting neurotransmitters. Herbal ingredients in Platinum help to reduce brain inflammation and clear toxic molecules such as chemokines from the brain to bring the activated microglia to its normal baseline. This will help to calm the mind and allow patients a better night’s sleep. Patients can experience symptom improvement in a couple of days and two to three weeks of treatment is recommended for significant improvement.

Heart Heat

For patients who suffer from insomnia due to Heart Heat, the wellness recommendation includes Z capsule. Z capsule helps remove heat from the heart and calm down the HPA axis. Herbal ingredients in Z Capsule helps clear liver and heart fire, inducing sedation and tranquilization by entering the heart and liver meridians. Patients can experience symptom improvement in a couple of days and two to three weeks of treatment is recommended for significant improvement.

Product Recommendation Summary

Cause	Associated Symptom	Recommended Products
Liver Deficiency	Difficulty falling asleep	Brown, LC Balancer
Heart Qi & Kidney Yin Deficiency	Dream-disturbed sleep	Pacekeeping
Kidney Yang Deficiency	Difficulty staying asleep	Xcel, LC Balancer
Brain Heat	Increased bedtime brain activity	Calm or Platinum
Heart Heat	Racing thoughts	Z Capsule

Selected Case Study

Case: Liver Cirrhosis & Insomnia

Jack Kucheran, DC, CN

A 36-year-old male patient had liver failure resulting from cirrhosis, psoriasis and very poor liver function due to genetic deficiency. He presented with many liver deficiency related symptoms such as irritability, feelings of anxiety and depression, and insomnia.

The patient began a protocol of herbal formulas from Wei Labs including Brown, LC Balancer, and Xcel Capsules.

After three months of the protocol, the patient saw great improvement in overall well-being as well as less irritability, stress, insomnia and depression. Liver and blood work were done and the liver results came back as normal.

References:

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2. Mancini, E., Beglinger, C., Drewe, J., Zanchi, D., Lang, U. E., & Borgwardt, S. (2017). Green tea effects on cognition, mood and human brain function: A systematic review. *Phytomedicine*, 34, 26–37. doi: 10.1016/j.phymed.2017.07.008