

## CONCEPT

QORE PM is a novel, all-natural sleep aid designed to address the biological problems underlying poor sleep quality. Insomnia and low-quality sleep affect millions of individuals, resulting in lost productivity, poor quality of life, and health complications. Evidence from cutting-edge neurobiology and biopsychology research suggests that changes in endocrine system functioning and the production of brain neurotransmitters disrupt sleep quality. QORE PM corrects these biochemical imbalances, restoring biological equilibrium and improving quality of sleep. Unlike pharmaceutical sleep aids and many other all-natural sleep products, which often produce grogginess or drowsiness upon waking, QORE PM is designed to promote feelings of renewal and freshness. QORE PM achieves this by correcting abnormal sleep cycles and supporting other biological systems related to good health.

## PUBLIC HEALTH RELEVANCE

ALiving in an increasingly fast-paced environment means that many people do not get the high-quality sleep they need to function effectively. According to the Centers for Disease Control and Prevention (CDC), between 50 and 70 million Americans suffer from sleep or wakefulness disorders. Inability to sustain a full night of sleep is associated with numerous health and lifestyle risks.

Contrary to public opinion, there is no “magic number” of hours of sleep that holds for all individuals. Age, sex, lifestyle factors, and genetics determine the optimal amount of sleep a person needs to feel well-rested and refreshed. The National Sleep Foundation reports that most adults require between seven and nine hours of sleep each night, while teenagers need 8.5 to 9.25 hours. In a study conducted by the CDC, 35.3% of adults reported getting less than the recommended seven hours of sleep each night. In addition to receiving an appropriate quantity of sleep, scientific research suggests that sleep quality is equally important. Failing to receive high-quality sleep -- even if overall sleep quantity is sufficient -- results in mood imbalances, lower life satisfaction, and poorer health outcomes.

Individuals who fail to receive enough sleep or who report poor sleep quality experience a variety of psychosocial and health problems. According to the CDC, the most commonly reported sleep-related problems include difficulty concentrating, inability to remember important information, problems focusing on hobbies, difficulty driving or taking public transportation, challenges managing finances, and inability to perform adequately at work. These problems with concentration and memory frequently lead to motor vehicle accidents, industrial disasters, medical errors, or occupational hazards that may be debilitating or even fatal. Less serious consequences include poor performance at work, relationship issues, and difficulty performing tasks of everyday living.

Numerous scientific studies have found an association between poor sleep quality and physical health problems. Failing to get enough sleep is significantly correlated with increased risk of obesity. Sleep is physiologically important because it allows the body to secrete hormones that regulate metabolism, control appetite, and facilitate efficient processing of glucose. Lack of sleep disrupts these processes, causing dysregulated metabolism, food cravings, and poor glycemic control. As a result, individuals who get insufficient sleep tend to eat high-fat and high-calorie foods, have difficulty sticking with diet plans, and gain weight because of slowed energy metabolism. With obesity-related costs totaling over \$147 billion in 2008 according to CDC estimates, poor sleep contributing to weight gain represents a significant public health challenge.

Insufficient sleep is also associated with cardiovascular risk factors, type 2 diabetes, hypertension, and cancer. Although the biological processes underlying these relationships remain unclear, some scientists believe that sleep gives the body a chance to fight diseases and restore biological equilibrium. Failing to get sufficient sleep disrupts these health-promoting processes, leading to disease. Chronic diseases associated with insufficient sleep negatively affect quality of life, productivity, and mortality. In addition to

these physical health issues, poor sleep quality is associated with major depressive disorder, anxiety, and other mental health problems. Failing to get enough sleep may also increase risk of alcoholism and other substance abuse problems. Because of this diverse array of physical and mental health consequences, sleep insufficiency leads to billions of dollars of medical costs each year.

## PHYSIOLOGY OF SLEEP CONDITIONS

### Common Sleep Problems

Many individuals who suffer from sleep problems are surprised to learn that poor sleep is a heterogeneous condition. There are many underlying physiological processes that can go awry, leading to distinct sleep issues. There are five separate problems that contribute to insufficient sleep; people may have one, several, or all of these problems. They include:

1. **SLEEP LATENCY:** *the amount of time it takes to fall asleep.*
2. **SLEEP DURATION:** *how long an individual sleeps without waking.*
3. **SLEEP REINITIATION:** *the ability to resume sleep when it is interrupted.*
4. **SLEEP DISTURBANCES:** *disruptive activities that occur during sleep and cause sleep interruptions.*
5. **RESTFULNESS:** *feeling restored and rejuvenated upon waking from sleep.*

Because sleep problems are so heterogeneous, it is important to address all of the underlying physiological mechanisms that lead to poor sleep. In general, these five problems are caused by difficulties cycling through the important stages of sleep, reductions in melatonin production, and underactivity of the neurotransmitter GABA.

### Healthy Sleep Cycles

Sleep seems like a fairly straightforward phenomenon, but it is actually a highly complex interplay between numerous body systems. There are five distinct stages of sleep, each of which has unique characteristics.

- **STAGE 1.** *In stage 1, individuals drift in and out of sleep, with slight opening and closing of the eyes. This stage is characterized by brain waves called alpha waves, which are slightly slower than those that occur during wakefulness.*
- **STAGE 2.** *Stage 2 sleep is characterized by a type of brain activity called theta waves. It is more difficult to wake someone from stage 2 sleep, and eye movements stop.*
- **STAGES 3 AND 4.** *Stages 3 and 4 are called slow-wave sleep, or deep sleep. The brain produces large, slow waves, and muscle activity ceases. When a person is in slow-wave sleep, he or she is unresponsive to the environment. Being awoken during slow-wave sleep leads to grogginess and confusion.*
- **REM.** *REM, or rapid eye movement, sleep is characterized by rapid, shallow breathing and fast movements of the eyes. Although the brain produces high-frequency waves similar to wakefulness, it is very difficult to arouse a person from sleep during this stage. During REM sleep, muscles become temporarily paralyzed, heart rate increases, blood pressure goes up, and dreams occur.*

Healthy adults cycle through these sleep stages throughout the night. The first REM period occurs approximately 70 to 90 minutes after falling asleep. The first sleep cycle of the night contains longer periods of deep sleep, with relatively short episodes of REM sleep. As the night continues, however, REM sleep periods increase in length.

## ***Sleep Cycle Disruptions***

Some sleep problems can be traced to changes in the way a person progresses through the distinct stages of sleep. As the body grows older, it becomes harder to attain sleep, increasing the amount of time spent in the stage 1 stage of intermittent sleep and wakefulness. Furthermore, time spent in deep sleep and REM sleep precipitously drops. These changes are detectable on brain EEGs, which document a decrease in the delta waves characteristic of deep sleep as well as a unique type of sleep wave called sleep spindles.

These sleep cycle changes are associated with aging, chronic stress, low levels of exercise, poor eating habits, coffee consumption, nicotine use, drinking alcohol, and certain prescription drugs. These factors can actually change the release of hormones associated with high-quality sleep. Changes in brain neurotransmitters may also contribute to poor sleep.

## ***Neurochemistry of Sleep***

Sleep occurs because of a complex interplay between hormones, neurotransmitters, and other body systems. There are two processes governing sleep-related activities: circadian rhythms and homeostatic processes. Circadian rhythms set the sleep cycle by regulating the body's awareness of day and night. Homeostatic processes, on the other hand, restore internal balance if the sleep system is disrupted by too little or too much sleep.

A circadian rhythm is a biological process that oscillates and follows a roughly 24-hour pattern. Also known as a biological clock, circadian rhythms arise from activity in the suprachiasmatic nucleus, a bundle of cells located in the hypothalamus in the brain. The hypothalamus connects the nervous system with endocrine functions, making it an important relay center for biological information. The suprachiasmatic nucleus receives information from light receptors and uses it to interpret the length of day and night. It then communicates

with the pineal gland, which secretes hormones that govern sleep/wake cycles. If the body's natural circadian rhythm is disrupted, one result is fragmented or poor quality sleep.

There are numerous hormones and neurotransmitters involved in stimulating sleep and wakefulness, but a few are especially important. Melatonin and GABA are two brain chemicals essential to sleep processes. Disruptions in these neurochemical systems may lead to difficulty falling asleep, inability to stay asleep, or poor quality sleep.

## ***Melatonin***

Melatonin, or N-acetyl-5-methoxytryptamine, is a chemical compound that is produced by the pineal gland and naturally occurs in some food products. The pineal gland, which is an important part of the circuitry underlying circadian rhythms, is located in the brain, but is outside of the blood-brain barrier that prevents certain chemicals from entering or leaving the brain. This positioning allows the pineal gland to release hormones that travel throughout the body to affect diverse physiological systems.

When the suprachiasmatic nucleus receives light signals from the eye, indicating that it is daytime, the pineal gland remains inactive. As the sun goes down and darkness increases, the suprachiasmatic nucleus stimulates the pineal gland to produce melatonin. Melatonin production typically occurs around 9:00 p.m., spiking sharply as darkness falls. Production of melatonin remains high throughout the night, with levels of the hormone staying elevated for approximately 12 hours. As the suprachiasmatic nucleus begins to receive light signals in the morning hours, its stimulation of the pineal gland stops. This causes melatonin production to sharply decrease by approximately 9:00 a.m. During the daytime, levels of melatonin are near zero. The melatonin circulating throughout the bloodstream during the night is efficiently cleared from the body by the liver.

Melatonin is one of the primary neurochemicals that causes feelings of sleepiness. As melatonin levels spike, the chemical causes drowsiness. Providing individuals with a melatonin supplement increases feelings of sleepiness and lengthens the duration of sleep. Scientific studies have also reported that administering melatonin improves sleep quality, reducing the number of nighttime waking incidents and increasing feelings of restedness upon waking. Some evidence suggests that melatonin may also increase the duration and quality of REM sleep.

Certain groups of people are particularly prone to dysregulation of the melatonin-producing system. Growing older is associated with significantly lower melatonin production, which may contribute to sleep problems. Individuals with autism spectrum disorders, adolescents with insomnia, individuals taking certain medications such as beta-blockers for hypertension, and people who work the night shift also produce less melatonin than their peers.

Chronically low levels of melatonin may contribute to more problems than just poor sleep. Some researchers hypothesize that melatonin may have anti-aging effects. A study that administered melatonin to older rats found that the hormone reversed the expression of 13 of 25 genes altered with age. In humans, deficits in melatonin are associated with Alzheimer's disease, pain, increased cardiovascular risk, certain types of cancer, endocrine disorders, type 2 diabetes, and other neurological conditions. Increasing melatonin levels through supplementation may improve sleep quality as well as reduce the risk of these health conditions.

## QORE PM FEATURES

QORE PM is an all-natural sleep aid designed to improve the quality and quantity of sleep. This sophisticated formula targets the underlying causes of poor sleep at the biological and neurochemical level. QORE PM is designed to address five distinct problems that can contribute to poor sleep:

1. **SLEEP LATENCY:** *the amount of time it takes to fall asleep.*
2. **SLEEP DURATION:** *how long an individual sleeps without waking.*
3. **SLEEP REINITIATION:** *the ability to resume sleep when it is interrupted.*
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5. **RESTFULNESS:** *feeling restored and rejuvenated upon waking from sleep.*

Many other pharmaceutical or natural sleep aids target only one or two of these sleep problems, leading to dissatisfaction and suboptimal sleep quality. Only QORE PM addresses the numerous underlying causes of sleep issues, restoring a natural balance of sleep-promoting hormones and neurotransmitters.

QORE PM is the result of extensive scientific research about natural compounds that regulate circadian rhythms, increase the duration of deep sleep, and support regeneration. It employs traditional Chinese herbs, essential nutrients, and other natural compounds to support relaxation and renewal. By rebalancing the body's neurochemistry -- which becomes disrupted by aging, genetics, and lifestyle factors -- QORE PM's sophisticated formula ensures that sleep quality will improve, resulting in superior overall health.

## HOW QORE PM TARGETS ABNORMAL SLEEP PHYSIOLOGY

### *Sleep Cycles*

Individuals who suffer from poor sleep do not experience the same changes in sleep cycles as healthy adults. They spend relatively less time in stage 1 sleep, resulting in difficulties falling asleep. People with sleep issues also do not spend enough time in stage 3 and 4 sleep, meaning that they fail to get adequate deep sleep. This causes them to feel drowsy, groggy, and unrefreshed upon waking.

QORE PM ensures that the brain spends enough time in each sleep stage. The natural biological compounds increase the body's ability to enter stage 1 sleep. This prevents problems with insomnia and poor sleep latency. QORE PM also contains ingredients that promote deep relaxation throughout the night. These compounds increase the body's ability to enter deep sleep (stages 3 and 4), ensuring rejuvenation upon waking.

### ***Neurochemistry of Sleep***

Changes in physiology related to aging, genetics, or lifestyle factors can significantly disrupt the brain chemicals that govern sleep. Reductions in melatonin production and underactivity of GABA are the most significant neurochemical contributors to sleep issues. QORE PM's sophisticated blend of ingredients remedies the imbalances in melatonin and GABA. By providing an optimized dose of melatonin, QORE PM restores circadian rhythms. Additionally, B vitamins, honokiol extract, and passionflower extract increase the production and activity of GABA within the brain. QORE PM's special formula contains optimized doses of these key ingredients, ensuring that neurochemical balance will be restored.

## **QORE PM INGREDIENTS**

QORE PM features a cutting-edge formula designed to optimize the levels of sleep-related chemicals in the body. The ingredients work together to regulate natural circadian rhythms and restore homeostasis. Each component of QORE PM performs a special role in sleep initiation, prevention of nighttime wakefulness, enhanced sleep quality, or feelings of restedness upon waking. The ingredients in QORE PM are all-natural, comprising essential nutrients, traditional Chinese herbal medicine, or natural chemicals commonly disrupted in individuals with sleep issues.

### ***Melatonin***

Melatonin is a hormone naturally produced by the pineal gland in response to darkness. Levels of melatonin remain high throughout the night, contributing to sleepiness and preventing sleep interruption. Scientific research has shown that individuals who have sleep problems often do not produce enough melatonin.

QORE PM provides an optimized dose of melatonin designed to restore a natural balance to the body's circadian rhythms. Numerous controlled randomized studies have demonstrated that melatonin supplementation can improve the quantity and quality of sleep. In a 2012 study of the effects of melatonin administration in individuals with insomnia, researchers found that participants experienced increased total sleep time, improved sleep efficiency, reduced time to sleep onset, and greater time spent in stage 2 sleep. Another placebo-controlled study found that adolescents given melatonin reported increased nighttime sleepiness, fewer incidents of waking during the night, and less daytime drowsiness.

The melatonin in QORE PM will restore balance to the body's disrupted circadian rhythms. Most individuals experience improved sleep after just one dose of melatonin, making QORE PM a highly effective all-natural sleep aid.

### ***Vitamins B-6 and B-12***

Many people do not receive enough vitamins and minerals through dietary sources, and the body is unable to manufacture these nutrients itself. B vitamins, especially vitamin B-6 (also called pyridoxine) and vitamin B-12 (cobalamin) contribute to sleep quality. Research studies have found that deficiencies in vitamin B-6 may cause sleep disturbances and psychological distress.

QORE PM contains an optimized dose of vitamins B-6 and B-12. These vitamins work in conjunction with melatonin to regulate the body's circadian rhythms. The synergistic relationship between melatonin, vitamin B-6, and vitamin B-12 ensures high energy levels throughout the day and deep, restful sleep at night. Vitamin B-6 also functions as a cofactor that supports the enzymatic conversion of the neurotransmitter glutamate to GABA. Increased levels of GABA in the brain reduce overactive neural networks and facilitate sleep onset.

### ***Honokiol Extract***

Long used in traditional Asian medicine, honokiol is a compound derived from the bark of the magnolia plant. The herbal compound has many beneficial effects, including mood regulation, reduction of blood clot formation, and anti-bacterial properties. It is also an anxiolytic agent that facilitates high-quality sleep.

Numerous controlled studies of honokiol extract have found that it is an effective treatment for sleep problems. Honokiol acts by modulating the activity of GABA, exerting a calming effect on the central nervous system. The result is a decrease in anxiety that leads to sensations of deep relaxation. Honokiol extract allows the body to enter deep sleep and feel regenerated upon waking.

### **Lemon Balm Extract**

Lemon balm, or *Melissa officinalis*, has been used as a traditional herbal remedy for over 2,000 years. Lemon balm extract targets the activity of the neurotransmitter acetylcholine to achieve its sleep-promoting effects. Overactivity of the acetylcholine system leads to increased arousal, preventing the body from achieving the deep relaxation needed for sleep. A 2003 study exploring the properties of lemon balm extract found that it blocks acetylcholine receptors, lowering the amount of activity in the acetylcholine neurocircuitry. The result is decreased arousal, feelings of calmness, and sleepiness. Lemon balm extract may also regulate mood and improve memory performance, leading to improvements in everyday activity upon waking.

### **Passionflower Extract**

Passionflower, or *Passiflora incarnata*, has long been used in teas and herbal preparations as a sleep aid. Passionflower extract influences the GABA system, leading to a reduction in central nervous system activity. Numerous controlled studies have found that passionflower extract is a reliable sedative, promoting deep relaxation without causing drowsiness the next day. QORE PM contains an optimized dose of Passionflower extract designed to increase sleep quality and promote daytime calmness.

### **Traditional Chinese Regenerative Herbs**

QORE PM contains a unique blend of herbs used in traditional Chinese medicine. The following herbs are ingredients in QORE PM that contribute to its sleep-promoting properties:

- *Paeoniae alba root (Bai Shao)*
- *Polygonum multiflorum stem (He Shou Wu)*
- *Acorus gramineus rhizome (Shi Chang Pu)*

- *Albizia julibrissin bark (He Huan Pi)*
- *Nelumbo nucifera seed sprout (Lian Zi Xin)*
- *Platycladus orientalis seed (Bai Zi Ren)*
- *Salvia miltiorrhiza root (Dan Shen)*
- *Ziziphus jujube seed (Suan Zao Ren)*

These Chinese herbs complement one another, working in synchrony to support multiple body systems. Bai Shao nourishes the liver; according to traditional Chinese medicine, the liver is essential to promoting restful, regenerative sleep. He Shou Wu also supports the liver in addition to the heart, digestive system, and kidneys. The herbs Bai Zi Ren, Suan Zao Ren, He Huan Pi, and Lian Zi Xin work together to nourish the heart and calm its activity, leading to natural relaxation and calmness. Dan Shen enhances the circulatory system, which reduces inflammation and promotes tranquility. Shi Chang Pu reduces the phlegm accumulations that can contribute to brain fog; this herb boosts mental clarity and ensures strong, clear mental performance during the day.

Only QORE PM includes this restorative blend of Chinese herbal remedies, supporting key organ systems in order to address the root causes of insomnia and sleep disturbances.

## **DIRECTIONS FOR USE**

QORE PM should be taken two times per day on an empty stomach. Take one packet of QORE PM immediately upon waking in the morning, before eating or brushing teeth. Take an additional packet just before bedtime, again on an empty stomach.

For best results, take two packets of QORE PM each day for 90 days. This therapeutic boosting period will regulate the body's natural circadian rhythms and reverse biological imbalances. After the 90 day boosting period, continue taking QORE PM once per day for therapeutic maintenance.

## **SIDE EFFECTS**

QORE PM does not cause any known side effects that may negatively impact physical health. Discontinue use and consult a physician if taking QORE PM causes any ill effects.

## CONTRAINDICATIONS AND HEALTH WARNINGS

There are no known contraindications with prescription medications, over-the-counter medications, or herbal supplements. However, it is always recommended to consult a physician before taking a new sleep aid with existing medications. Pregnant or breastfeeding women, children under age 18, and individuals with a known medical condition should see a physician before using QORE PM.

Because QORE PM is a sleep aid, avoid driving or operating heavy machinery after taking it.

## FREQUENTLY ASKED QUESTIONS

### *1. What are the benefits of using QORE PM?*

QORE PM is an all-natural sleep aid with a unique formula designed to address all aspects of troubled sleep. Unlike most sleep aids, which only target sleep duration or the amount of time it takes to fall asleep, QORE PM addresses the root causes of sleep problems. Its sophisticated blend of essential nutrients and herbs ensure a full, uninterrupted night of sleep. QORE PM also contains special ingredients to create feelings of relaxation and refreshment upon waking.

### *2. Who can benefit from QORE PM?*

Any person who suffers from insomnia, frequent nighttime waking, early waking, daytime drowsiness, poor sleep quality, or other sleep issues can benefit from taking QORE PM. The sophisticated blend of ingredients targets the sleep problems of a diverse group of people. From adolescents who struggle to stay awake during the day to older adults suffering from frequent nighttime waking, QORE PM benefits individuals of all ages. It is appropriate for those with hypertension, type 2 diabetes, cardiovascular disease, sleep apnea, cancer, depression, anxiety disorders, and other medical conditions that contribute to sleep difficulties. QORE PM is also an excellent way for night shift workers, people with irregular schedules, and those who frequently travel to regulate their sleep.

### *3. How does QORE PM improve sleep quality?*

Aging, genetics, and lifestyle factors can create imbalances in endogenous levels of important neurotransmitters and hormones. QORE PM resets the body's natural circadian rhythms and rebalances the activity of key brain areas to address the root causes of sleep problems. By correcting sleep issues on a biological and biochemical level, QORE PM is a comprehensive solution for a variety of sleep disturbances.

### *4. What makes QORE PM unique among sleep aids?*

No other sleep aid on the market has the unique blend of ingredients that makes QORE PM so effective at restoring sleep and improving restedness upon waking. QORE PM uses a blend of traditional Chinese herbs, essential nutrients, and naturally-produced biological compounds to facilitate healthy sleep.

The ingredients work synergistically to correct imbalances in the neurochemical system underlying sleep processes. Furthermore, the traditional Chinese herbs support the functioning of the liver, digestive system, kidneys, and heart, which is essential to achieving restorative sleep. By targeting the multifaceted biological components that contribute to healthy sleep, taking QORE PM leads to deep, regenerative sleep followed by alertness and relaxation during the day.

### *5. How long does it take to see results?*

QORE PM contains all-natural components that begin working immediately to restore circadian rhythms and homeostatic balance in sleep cycles. Most people begin to experience the sleep-regulating effects of QORE PM effects after one dose. However, it may take several weeks of continuous use to experience the maximal benefits of QORE PM.

### *6. Is QORE PM habit-forming?*

No. QORE PM does not contain any habit-forming ingredients. Unlike many prescription and over-the-counter sleep aids, QORE PM does not lead to physical or psychological dependence. It is a safe, all-natural product designed to facilitate high quality sleep without leading to increased tolerance or dependence.

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\*These statements have not been evaluated by the Food and Drug Administration.  
This product is not intended to diagnose, treat, cure, or prevent any disease.