



Melatonin Hormone Profile

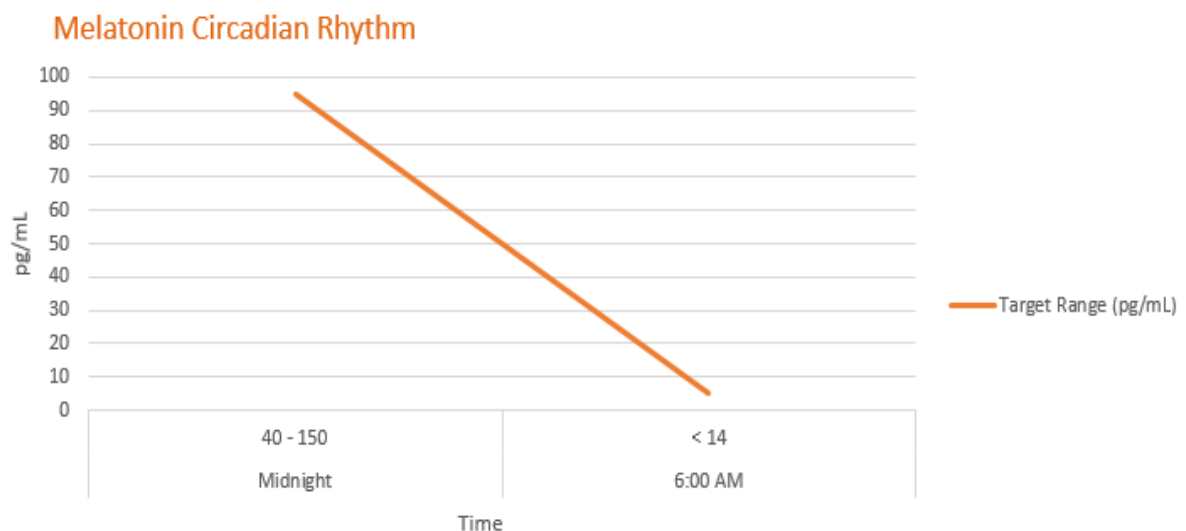
Melatonin is a neuropeptide predominantly produced by the pineal gland. Melatonin is secreted in a distinct circadian rhythm – stimulated by darkness, inhibited by light and independent of sleep. The phase of the circadian rhythm is influenced by day length (increasing in amplitude in the winter and decreasing in spring) or artificial light.

Melatonin is a potent antioxidant, immune stimulant and potential inhibitor of cancer. The levels of melatonin in the body tend to decrease with age and low levels may result in sleep disturbances such as insomnia, poor immune function, depression and other mood disorders. Due to its circadian rhythm, melatonin must be collected at midnight in the dark and again on rising (0600-0800).

Male and Female Melatonin Reference and Target Ranges

Reference ranges are based on healthy population studies and are used as a guide. Target ranges are based on clinical observation and feedback on thousands of salivary hormone reports, thus identifying the desired levels of hormone required for optimal function.

Time	Melatonin Reference Range pg/mL	Melatonin Target Range pg/mL
12 midnight	40-150	95
6:00AM	< 14	5



Low Melatonin

Possible Causes

- Increasing age
- Lack of sleep
- Prolonged light phase of the day
- Exposure to bright lights or electromagnetic fields, including regular long haul flights or night shift work
- Excessive exercise at night
- Decreased production by the pineal gland or increased metabolism by the liver
- Stress, especially if high cortisol
- Certain drugs including SSRIs, benzodiazepines, NSAIDs, anti-hypertensives, beta-blockers, adrenergics, calcium channel blockers and steroids.
- Excessive coffee, tobacco and alcohol can lower melatonin
- High dose B12 supplementation

Treatment Considerations

- Regular, adequate sleep is the major controlling factor in maintaining levels if low
- Decrease exercise, exposure to bright light and exposure to electromagnetic fields at night
- Melatonin or St John's Wort supplementation
- Increase food sources of melatonin and its precursor, tryptophan, such as turkey, chicken, oats, seaweed and bananas
- Vitamin B3, Vitamin B6, Calcium and Magnesium may support the production of melatonin
- Eating regular meals that correspond to normal patterns may help strengthen the production of melatonin levels
- Avoid stimulants such as coffee and nicotine

High Melatonin

Possible Causes

- Melatonin or tryptophan supplementation
- Extended nocturnal dark phase
- Certain drugs such as MAO inhibitors, fluvoxamine, and desipramine
- Herbs including St John's Wort and Cannabis
- Decreased metabolism by the liver – check glucuronidation or sulphation pathways
- High levels are associated with seasonal affective disorder (SAD)

Treatment Considerations

- Exposure to bright light in the morning
- Exercise in the evening is previously exercising in day
- Support Phase II detoxification especially glucuronidation and sulphation

Test Kit

Once the practitioner has given the patient their request form, the patient can order their test kit online at www.clinicallabs.com.au/shop. The test kit contains full instructions.

Specimen Requirements

- Two saliva specimens are required. The test kit provided contains everything required to complete the test. Specimens need to be collected at the following times
 1. Midnight
 2. Morning between 6:00AM and 8:00AM

Patient Preparation

- Patients must fast from 10:00PM the evening before taking the midnight saliva specimens (water may be consumed during this time)
- The midnight saliva specimen must be taken in a darkened room, with low light if necessary. Bright and/or fluorescent lights will reduce the production of melatonin
- If patient is taking melatonin orally, they must stop for 3 days prior to the test

Turnaround Time

The standard turnaround time for this test is 7-10 working days from the date the patient's specimen/s are received at our laboratory.

Test Results

Patient results will be delivered via electronic download (eResults), unless requested otherwise. However, we can also issue results via fax or hardcopy.

Companion Tests

- Baseline Hormone Profile
- Adrenal Hormone Profile

The results of the Melatonin Hormone Profile may be further supported by additional functional pathology testing. A low level of melatonin is often seen in conjunction with an imbalance of the sex and stress hormones. The Baseline Hormone Profile provides valuable information on an individual's hormonal status and the potential impact this may have on physical and emotional health.

Hormone imbalance may also be the result of prolonged stress and sympathetic nervous system dominance. The Adrenal Hormone Profile, which measures Cortisol and DHAE-S over a 24 hour period, may therefore be a useful adjunct to the Melatonin and Baseline Hormone Profile.