Melatonin is an important neuroendocrine hormonal regulator that plays a significant role in reproductive health, sleep-wake cycles, mood, and body temperature. Melatonin is also a potent antioxidant that plays a critical role in free radical scavenging.

**Why is this test important?**

- Melatonin is an important neuroendocrine hormonal regulator that plays a significant role in reproductive health, sleep-wake cycles, mood, and body temperature.
- Melatonin is also a potent antioxidant that plays a critical role in free radical scavenging.

**What does this test involve?**

- Three saliva samples are collected at specific times of the day.
- The report includes a quantitative value of each specimen, and a circadian analysis of melatonin activity.

**What are the consequences of abnormal melatonin levels?**

- High levels may bring about inhibition of ovulation, mood disorders, and/or a decreased body temperature.
- Low levels may contribute to insomnia, sleep/wake disorders, mood disorders, increased risk of cardiovascular disease, immune disorders, and cancer.
Suspect:

1) An extended nocturnal dark phase, which may increase the duration of melatonin secretion, and precipitate a phase shift in the onset of melatonin production
2) Melatonin supplementation, or supplementation of its precursor, tryptophan
3) Other substances that may increase melatonin:
   - DRUGS which may stimulate melatonin production
     Fluvoxamine
     Desipramine
     Most MAO inhibitors
   - HERBS which may raise melatonin levels
     Hypericum perforatum (an MAO inhibitor)
     Cannabis sativa (marijuana)
   - FOODS high in melatonin: Oats, sweet corn, rice, Japanese radish, ginger, tomatoes, bananas, barley
   - FOODS high in tryptophan (melatonin precursor): Spirulina seaweed, soybean, cottage cheese, chicken liver, pumpkin seeds, turkey, chicken, watermelon seeds, almonds, peanuts, brewer’s yeast, malted milk, milk, ice cream, yogurt
4) Decreased metabolism of melatonin by the liver
   (6-hydroxylation followed by sulfate or glucuronide conjugation)
5) Increased risk for mood disorders, such as Seasonal Affective Disorder (SAD) and mania

Consider the following actions:

1) Increase morning exposure to bright light, to lower melatonin production
2) Reduce or avoid melatonin and/or tryptophan supplements
3) Re-evaluate use of medications, herbs and dietary intake of melatonin-enhancing foods
4) Modify exercise routine if induced melatonin levels are not desired (daytime exercise can increase melatonin levels)
5) Evaluate liver metabolism for inadequate sulfation and/or glucuronidation using the Detoxification Profile
6) In cases of depression and other mood disorders, rule out other possible causes

Suspect:

1) An extended light phase of the day which may decrease the duration of melatonin secretion and/or exposure to light-at-night or electromagnetic fields
2) Drugs and other substances that may decrease melatonin levels:
   - NSAIDS, anti-anxiety drugs and antidepressants
     (SSRIs and benzodiazepines), antihypertensives
     (beta-blockers, adrenergics, and calcium channel blockers), and steroids.
   - Caffeine, tobacco, alcohol
   - High doses of vitamin B12 (3 mg a day)
3) Evening exercise, which can decrease melatonin levels up to three hours after the end of exercise
4) Increased risk for mood disorders, such as some forms of depression
5) Increased metabolism of melatonin by the liver
6) Decreased production of melatonin by the pineal gland

Consider the following actions:

1) Avoid bright light at night and reduce exposure to electromagnetic fields, to prevent melatonin depletion
2) Re-evaluate the scheduled time of taking required medications
   If possible, avoid use of melatonin-lowering substances at times of recorded low melatonin
3) Modify exercise routine if reduced melatonin levels are not desired
4) In cases of depression and other mood disorders rule out other possible causes
5) Consider single or divided low dose melatonin supplementation*
   - Dosing should be individualized to fit the clinical presentation
   - Goal should be to resynchronize the circadian rhythm of melatonin
   - (*Use with caution in pregnancy or with corticosteroids taken for immuno-suppressive purposes)
6) Consider ingestion of foods high in melatonin or melatonin precursor during time when recorded melatonin is low:
   - See list of foods high in melatonin and tryptophan in left column above
7) Consider enhancing the production of melatonin with nutrient supplements during recorded times of low melatonin
   - Niacinamide, vitamin B6, calcium, and magnesium
8) Avoid large doses of vitamin B-12 (3 mg a day), which may cause a significant decrease in melatonin levels

This information is for the sole use of a licensed health care practitioner and is for educational purposes only. It is not meant for use as diagnostic information. All claims submitted to Medicare/Medicaid for GSDL laboratory services must be for tests that are medically necessary. “Medically necessary” is defined as a test or procedure that is reasonable and necessary for the diagnosis or treatment of illness or injury or to improve the functioning of a malformed body member. Consequently, tests performed for screening purposes will not be reimbursed by the Medicare program.