Sleep is an essential part of life. This should come as no surprise since humans spend about a third of their life in the state of sleep. However, it has only been over the past several decades that we as physicians are finally realizing how important sleep is. The first medical sleep centers opened in the 1970s. Sleep medicine only became a board-certified subspecialty through the American Board of Medical Specialties in 2007.

Sleep influences almost all aspects of our health and society. Epidemiological data demonstrate increased mortality in patients who report on average either very short or very long sleep times. Acute sleep deprivation results in problems with concentration, increased accident risk, metabolic dysregulation including decreased leptin and increased ghrelin levels which have been proposed to result in weight gain and obesity. REM behavioral disorder, a disease in which patients act out their dreams, can be a precursor to the eventual development of neurodegenerative processes such as Parkinson's disease. Parasomnia behaviors are common and sleep walking defenses are now being used in the legal arena. The number of individuals who work the graveyard shift continues to increase with the demands of a global economy. Good, refreshing sleep, or lack thereof, is becoming more important than ever.

Obstructive sleep apnea (OSA), a disorder in which patients intermittently pause while breathing during sleep, is probably the most recognized sleep disorder by physicians today. There is increasing evidence of serious health consequences of untreated OSA. OSA has been associated with the worsening of multiple diseases: glycemic control in diabetes is worse, ejection fraction in heart failure is lower, daytime blood pressures are increased, inflammatory cytokine levels are elevated, progression of atherosclerotic disease is accelerated, the incidence of stroke is higher, atrial fibrillation is more common, a number of coagulation factors are activated, and mortality rates from cancer are higher. Snoring, excessive daytime sleepiness, fatigue, insomnia, observed apneic episodes, and gasping arousals are all symptoms of OSA; however, some patients complain of no symptoms at all -- especially if they have no bed partner. The gold standard treatment for OSA is noninvasive positive airway pressure ventilation, although other treatments exist such as mandibular advancement devices, positional therapies, certain surgeries, and nasal expiratory positive airway pressure devices.

A common sleep complaint presented to many physicians is insomnia. Insomnia is reported in up to 26% of individuals monthly and is estimated to cost the US economy $63 billion annually. Insomnia is a disease that is quite complex and thus can be frustrating for many physicians and patients. In many patients, insomnia is strongly associated with psychiatric disease and in fact is one of the strongest predictors of relapse of depression. Long-standing insomnia typically has strong conditioned components and maladaptive behavioral responses which propagate the disease making insomnia frequently refractory to medical treatment. To complicate matters, many medications and diseases can also cause insomnia. There are also sleep-related breathing disorders, sleep-related movement disorders, and circadian rhythm disorders which can all cause or masquerade as insomnia. Effective treatment for insomnia includes appropriate time in bed restrictions, stimulus control techniques, sleep hygiene counseling, possible screening for underlying sleep disorders, and lastly medication management. In fact, cognitive behavioral therapy for insomnia (a behavioral approach) is more effective than medications for insomnia in long-term studies.

At the other end of the spectrum, excessive daytime sleepiness (EDS) is a cause of injury and poor quality of life. EDS is increasingly becoming a problem in society today. In fact, 4 out of 5 Americans consume caffeine to compensate for sleep deprivation and caffeine is the second most traded commodity in the world behind oil. EDS has been implicated in one out of every five motor vehicle accidents in the United States. It only takes 5 seconds to drive into oncoming traffic after falling asleep at the wheel. This is a serious enough issue that governmental regulatory agencies are beginning to screen individuals with commercial driver’s licenses for sleep disorders. Almost everyone who wakes up to an alarm clock is at least partially sleep deprived. Although the most common reason for EDS is sleep deprivation, sedating medications, sleep disordered breathing, nocturnal movement disorders, central nervous system hypersomnia disorders, and circadian rhythm disorders can also cause EDS. Appropriate treatment for EDS depends greatly on identifying the cause and may involve noninvasive positive airway pressure ventilation, stimulants, medication adjustment, sleep hygiene counseling, or circadian adjustment.

The terms "night owl" and “early bird” are proof that society recognized circadian rhythm disorders long before the medical profession had names for them. One way to understand a circadian rhythm disorder is to picture your patient in a constant state of jetlag. Our circadian rhythm is genetically determined by the human periodicity and clock genes. Less recognized and quite possibly more prevalent in contemporary society is shift work sleep disorder in which individuals are working during their normal sleep period and are trying to sleep during times where they are normally awake. As expected, this can result in insomnia, hypersomnia, increased workplace error, worse quality of life and injury. There is mounting evidence that circadian rhythm disorders cause more than just insomnia and hypersomnia but are also related to other medical disorders. Experimental data indicates that a number of human metabolic pathways are strongly linked to our endogenous circadian clock. In contrast, some hormones are secreted only during certain stages of sleep. Circadian misalignment has been associated with diabetes and cardiovascular disease. Night shift workers who have worked more than 5 years have an increased risk of coronary heart disease. There is growing evidence that to stay healthy, people not only have to get a sufficient amount of restorative sleep but that they have to get it at the correct biologic time.

Sleep is essential for good health and quality of life. Physicians need to be diligent about screening patients for sleep disorders since these disorders are 1) common, 2) associated with poor quality of life, 3) complicate a number of medical and psychiatric disorders, and 4) are treatable. Getting adequate amounts of good, restorative sleep is more than just simply putting a mask on a patient to help them breathe when they sleep.

The Noran Neurological Clinic Sleep Center is more than just a sleep lab. We are an accredited sleep center staffed by fellowship trained, board-certified sleep physicians and technicians. With locations in Minneapolis and Blaine, we are easily accessible to much of the twin cities’ metropolitan area. Here at Noran, we clinically evaluate patients and decide on the appropriate sleep testing needed which includes polysomnography, electroencephalography, multiple sleep latency testing, multiple wakefulness testing, actigraphy and imaging. We sit down with patients after testing and personally review the actual studies with them to help them understand their diseases better. We then formulate comprehensive treatment strategies and follow up with them to resolve their sleep complaints and disorders. As board certified sleep physicians, we are qualified to treat patients for all sleep disorders including but not limited to OSA, insomnia, hypersomnia, and RLS. As board certified neurologists we add the extra expertise in movement disorders, nocturnal seizures, parasomnia behaviors, circadian disorders, as well as neurodegenerative and neuromuscular diseases. When you send a patient to the Noran Clinic Sleep Center you are engaging a well-trained, courteous team of professionals dedicated to helping your patient with his or her sleep needs.