This issue of the Healthy Camels Newsletter, written by Dr. John Triplett, will provide valuable information on the medical importance of sleep. Dr. Triplett is the Campbell University Community Pharmacy Resident at Kerr Drug in Sanford.

Sleep is necessary for all of us to be able to function at our best, both physically and mentally. Estimates suggest that as many as 70 million Americans suffer from a sleep related problem, which affects as much as 80% of those over age 65. According to the National Sleep Foundation 2010 Sleep in America Poll approximately one-third of Americans are not getting enough sleep to meet their needs on weekdays and/or workdays. This could lead to losses in worker productivity, compromised safety in the workplace, and a negative impact on Americans’ health and quality of life.

Too little or too much sleep can have harmful effects on a person’s health, and may even increase their risk for developing some chronic diseases. For instance, persons who sleep more or less than 7 to 8 hours a night have a higher body mass index (BMI) compared to those who do not. Persons who do not sleep enough have lower levels of appetite suppressing hormones and higher levels of the appetite stimulants. These factors can lead to weight gain and obesity, both of which are risk factors for developing diabetes and obstructive sleep apnea. A study found that persons who slept 5 hours or less per night were about 2.5 times more likely to have diabetes than those who slept 7 to 8 hours per night. Another study showed that this risk was also seen in people who slept more than 8 to 9 hours a night.

A study in Taiwan found that people who slept 9 or more hours a night were twice as likely to develop heart disease as those who slept an average of 7 hours. Too much or too little sleep is even associated with a higher risk of death. A Finnish study showed significant increases in mortality in men and women who slept less than 7 hours or more than 8 hours per night.

The social and mental impact of sleep disturbances have been observed for years. People who experience insomnia are more likely to suffer physical or mental distress, anxiety, smoke, and, in men, drink heavily. It has also been linked to the development of depression and serious anxiety disorders.

To combat the ill effects of sleep disorders about 1 in 3 Americans use a sleep aid “at least a few nights a week” to help them sleep. These sleep aids include prescription medications, over-the-counter sleep aids, herbal sleep remedies, non-drug techniques, and alcohol.
A group of prescription medications often used to treat insomnia is the benzodiazepines which reduce the time it takes to fall asleep and increase the amount of time spent asleep. However, some of these drugs may cause drowsiness and confusion the next morning because their effect lasts too long. Halcion® (triazolam) has the shortest duration of action among these agents but tolerance can develop in as little as 2 weeks requiring increased dosage to maintain the effect. Other drugs in this group include Dalmane® (flurazepam), Restoril® (temazepam), and Doral® (quazepam). In recent years a number of other non-benzodiazepine drugs became available. Ambien® (zolpidem) is another prescription sleep agent which shortens the time it takes to fall asleep and increases the amount of time spent asleep. Lunesta® (eszopiclone) works in a similar fashion. Sonata® (zaleplon), also shortens the time it takes to fall asleep, but is less helpful in maintaining sleep because of its shorter duration of action. However, this means that it is less likely to cause drowsiness or a hangover feeling the next morning. These last three medications have been implicated in a rare side effect known as “sleep driving” and includes risky behaviors that may be performed when partially awake without any memory of the event the next day. Rozerem® (ramelteon) is unique among prescription sleep aids in that it affects melatonin (see below). Ambien®, Sonata®, Lunesta®, and Rozerem® should be used with caution in persons with liver disease because they depend on the liver to remove them from the body.

Desyrel® (trazodone) is an antidepressant sometimes used to treat insomnia. Unlike the previously discussed medicines it has little risk of dependence. However, there are several different drug interactions that may be of concern. It is always a good idea to ask your doctor and pharmacist about possible drug interactions when you receive a new medicine.

Non-prescription sleep aids include diphenhydramine (Benadryl®, Compoz®, Nytol®, and many others), doxylamine (Unisom®), melatonin, and valerian. The antihistamines diphenhydramine and doxylamine are best used to treat infrequent insomnia episodes because tolerance to their effect, requiring increasing dosage, can develop if used over a long period of time. When used as a sleep aid diphenhydramine and doxylamine can help a person fall asleep, but may not maintain that sleep through the night. Melatonin is a natural hormone made by the body that may play a role in controlling the sleep cycle. This herbal supplement is usually given at night when natural melatonin levels rise just before sleep. Valerian is another common herbal sleep remedy made from the Valerian officinalis plant. Like melatonin it is taken at bedtime to help a person fall asleep. Both of these herbal supplements have little evidence to support their use in the treatment of insomnia and other sleep disorders, and are not regulated by the FDA to guarantee consistency and effectiveness. For these reasons use of melatonin, valerian, and other herbal supplements should be reserved for a trial in those instances when agents with documented effects may be inappropriate.

Although this information suggests that 7 to 8 hours of sleep a night is the best option for adults, sleep needs will vary between individuals and age groups. Use this information as a guideline for discussing your sleep needs with your doctor or pharmacist.

References available upon request.