



Health Hunters Newsletter

A service of the Riordan Clinic, cofounded in 1975 by Olive W. Garvey and Hugh D. Riordan. The Riordan Clinic is a not-for-profit 501(c)(3) corporation. Go to www.riordanclinic.org to make your tax deductible donation today or visit us at 3100 N. Hillside, Wichita, KS 67219.



Inside This Issue

How The Circadian Rhythm Affects Sleep, Wakefulness, and Overall Health	1-4
Letter from the Editor	2
Vitamin Special	5
Know Your Nutrients	5
Essential Oils	5-6
Chiropractic Care for the Whole Family	7
Lunch and Lecture Series	8



How the Circadian Rhythm Affects Sleep, Wakefulness, and Overall Health

by Dr. Nina Mikirova, Director of Research

Life on earth has evolved under the daily rhythm of light and dark. Metabolic, physiological and behavioral processes exhibit 24-hour rhythms in most organisms, including humans. Light is one of the most potent environmental cues that enable the organisms to adapt to the 24-hour environmental LD cycle. Photic signals are delivered from the eye to the suprachiasmatic nucleus (SCN) via the retinohypothalamic tract, thereby mediating the entrainment of the circadian clock system.

This regulation is driven by a small region in the anterior hypothalamus of the brain, termed as the "circadian clock." This clock spontaneously synchronizes with the environmental light-dark cycle, thus enabling all organisms to adapt to and anticipate environmental changes. As a result, the circadian clock actively gates sleep and wakefulness to occur in synchrony with the light-dark cycles. Indeed, our internal clock is our best morning alarm clock, since it shuts off melatonin production and boosts cortisol secretion and heart rate 2-3 hours prior awakening.

The internal circadian clock and sleep-wake homeostasis regulate and organize human brain function, physiology and behavior so that wakefulness and its associated functions are optimal during the solar day and that sleep and its related functions are optimal at night. The maintenance of a normal phase relationship between the internal circadian



Letter from the Editor:

by Amanda Hawkinson

If you are like most Americans, you probably don't get enough sleep. This is greatly influenced by our environment, light playing a key role in our body's circadian rhythms. Circadian rhythms are physical, mental and behavioral changes that follow a roughly 24-hour cycle, responding primarily to light and darkness in an organism's environment. Controlled by our "master clock," circadian rhythms can change sleep-wake cycles, hormone release, body temperature and other important bodily functions.

This issue of the *Health Hunters Newsletter* is focused on understanding our circadian rhythms, which in-turn may help us understand sleep issues such as insomnia and disrupted sleep-wake cycles. Abnormal circadian rhythms have also been associated with depression, bipolar disorder and seasonal affective disorder.

Here's to better sleep!

Thank you for reading.

Amanda Hawkinson
Editor
newseditor@riordanclinic.org

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clock, sleep-wake homeostasis and the light-dark cycle is crucial for nominal neurobehavioral and physiological function in humans. The circadian timing system influences food intake behavior, activity of the gastrointestinal system, and several aspects of glucose and lipid metabolism.

In fact, the internal biological timekeeping and the sleep-wake systems are important regulators of neuroendocrine, metabolic, renal, cardiovascular, and neurobehavioral function. Disturbed circadian rhythms are known to be closely related to many diseases, including sleep disorders. The circadian clock system regulates daily rhythms of physiology and behavior, such as the sleep-wake cycle and hormonal secretion, body temperature and mood.

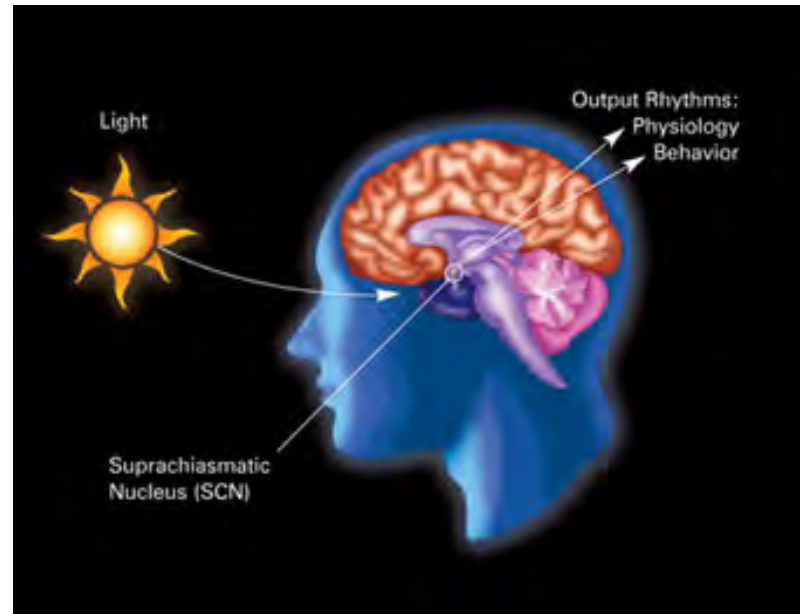
Sleep disorders include chronic insomnias associated with an endogenous clock which runs slower or faster than the norm sleep phase syndrome, periodic insomnias due to disturbances in light perception (non-24-hour sleep-wake syndrome and sleep disturbances in blind individuals) and temporary insomnias due to social circumstances (jet lag and shift-work sleep disorder).



According to the Centers for Disease Control and Prevention and the Institute of Medicine of the National Academies, insufficient sleep has become a public health epidemic. Approximately 50–70 million adults (20 years or older) suffer from some disorder of sleep and wakefulness, hindering daily functioning and adversely affecting health and longevity.

Treatment of circadian rhythm disorders, whether precipitated by intrinsic factors (e.g., sleep disorders, blindness, mental disorders, aging) or by extrinsic factors (e.g., shift work, jet-lag) has led to the development of a new type of agents called 'chronobiotics', among which melatonin is the prototype. The term 'chronobiotic' defines as a substance capable of shifting the phase of the circadian time system thus re-entraining circadian rhythms. Melatonin administration synchronizes the sleep-wake cycle in blind people and in individuals suffering from delayed sleep phase syndrome or jet lag, as well in shift-workers.

Melatonin is synthesized from tryptophan and is intensively secreted into the blood only in darkness (nighttime) by the pineal gland. Melatonin is not only the most reliable marker of internal circadian phase but also a potent sleep-promoting and circadian phase regulatory agent in humans. The hormone melatonin is commonly used as a marker of internal biological time representing the phase of the master circadian clock located in the suprachiasmatic nucleus (SCN) of the hypothalamus in mammals. Humans typically initiate sleep shortly after the circadian rise in plasma melatonin levels and



awaken shortly after the circadian fall in plasma melatonin levels. In humans, sleep efficiency is best during the biological night when melatonin levels are high.

The effect of melatonin on sleep is probably the consequence of increasing sleep propensity (by inducing a fall in body temperature) and of a synchronizing effect on the circadian clock (chronobiotic effect). Several studies successfully employed the timely use of three factors (melatonin treatment, exposure to light, physical exercise) to hasten the resynchronization after transmeridian flights comprising 12–13 time zones, from an average of 8–10 days to about 2 days.

Daily melatonin production decreases with age, and in several pathologies, attaining its lowest values in Alzheimer's dementia patients. Due to decreased melatonin production, about 45% of dementia patients have severe disruptions in their sleep-wakefulness cycle.

Cardiac rhythm, melatonin and cancer risk: does light at night compromise physiologic cancer protection by lowering serum melatonin levels?

Light is the primary stimulus to the disruption and resetting of pacemaker, which is expressed in changing melatonin rhythms. Melatonin production in humans decreases when people are exposed to light at night. Since melatonin shows potential oncostatic action in a variety of tumors, it is possible that lowered serum melatonin levels caused by exposure to light at night enhance the general tumor development.

It has been estimated that about 20% of working people work in the shift system. This estimate concerns health service employees and policemen among others. The shift work causes permanent conflict "of the biological clock" with required working hours. The work in the night hours is less effective and triggering the increased tiredness.

Cancer is the second leading cause of death in industrialized countries like the United States, where a significant proportion of workers engage in shift work, making a hypothesized relation between light exposure at night and cancer risk.

Observational studies support an association between night work and cancer risk. The potential primary culprit for this observed association is the lack of melatonin, a cancer-protective agent whose production is severely diminished in people exposed to light at night.



Previously, humans tended to conduct their daily activities according to the sun's cycle: rising at sunrise and going to bed at sunset. Such sleep rhythms appear not only to be more natural, but also to be essential for a variety of physiologic functions in humans, such as body temperature, excretion, and the production of hormones.

Melatonin, for example, follows a very distinct pattern of production, which is very closely linked to the individual's circadian rhythm, following light exposure.

Environmental lighting powerfully alters physiologic release of melatonin, which typically peaks in the middle of the night: a profound melatonin reduction was observed in humans after 2 weeks of intermittent nightly exposure to light.

Thus, novel hypotheses were generated, proposing that the diminished function of the pineal gland might promote the development of breast cancer in humans. One of the initial theories supporting that a diminished function of the pineal gland might promote the development of cancer hypothesized that melatonin suppression may lead to an increase in levels of reproductive hormones, particularly estradiol, thereby increasing the growth and proliferation of hormone-sensitive cells in the breast.

Observational studies have supported that theory, indicating that women in occupations that expose them to light at night do experience a higher risk of breast cancer. Interestingly, blind women, who do not have the ability to experience lower melatonin levels because of their supposed lack of receptivity to light, have a lower incidence of breast cancer.

Studies fairly consistently report meaningful increases in breast cancer risk among postmenopausal women exposed to shift work. Two retrospective studies of flight attendants with occupational exposure to light at night linked the employment time to an increased risk of breast cancer.

Two nationwide record linkage studies and a retrospective case-control study associated night work with an approximately 50% higher risk of breast cancer.

Finally, the Nurses' Health Study, the only prospective study published that evaluated the association, observed a positive association of extended periods of rotating night work and breast cancer risk (more than 30 years of rotating night work).



In this study, night work was defined as the total number of years during which the nurses had worked rotating night shifts with at least three nights per month, in addition to days and evenings in that month. During 10 years of follow-up, 2441 incident cases of breast cancer were documented among 78,562 women.

A positive association

between the number of years a woman had worked on rotating night shifts and breast cancer risk was observed.

Among postmenopausal women, the relative risk for breast cancer, controlling for all the major risk factors for breast cancer, was moderately increased after 1–14 and 15–29 years of rotating night shift work, and was further increased for those nurses who worked the night shift for 30 or more years, with similar risks for premenopausal women. Thus, in sum, observational studies seem to support the hypothesis that night work increases the risk for breast cancer.

Light at night and other cancers

Only few observational studies have addressed the relationship between shift work and cancers, other than breast cancer. Early suggestions for an increased cancer risk related to shift work arose from two mortality studies that were conducted among female shift workers to assess the influence of shift work upon total and cause-specific mortality, with suggestions for an increased cancer mortality related to shift work. One study reported an increased risk of colon and rectum cancer in the cohort of female radio and telegraph workers. Another study did not report the risks for colorectal cancer among the female Icelandic flight attendants, but describe an elevated risk for tumors of the lymphatic system.

The Nurses' Health Study Cohort was used to explore the association between night work and colorectal cancer; 602 women were diagnosed with incident of colorectal cancer during the 10 years of follow-up. In these analyses, women who worked 15 or more years on rotating night shifts were at a higher risk of colorectal cancer than were women who never worked rotating night shifts.

Cancer-protective effects of melatonin

In recent years, an overwhelming amount of research has been devoted to exploring the cancer-protective properties of the hormone melatonin. Today, many of the oncostatic properties of melatonin have been fairly well described, and evidence from experimental studies strongly suggests a link between melatonin and tumor suppression.

In vitro studies, although not entirely consistent, give support to a reduction in the growth of malignant cells of the breast and other tumor sites by both pharmacological and physiologic doses of melatonin. In rodent models, exogenous melatonin administration exerts anti-initiating and oncostatic in various chemically induced cancers. Melatonin is believed to have antimetabolic activity by its direct effect on hormone-dependent proliferation through interaction with nuclear receptors. Another explanation is that melatonin increases the expression of the tumor-suppressor gene p53. Cells lacking p53 have been shown to be genetically unstable and thus more prone to tumors.

In vitro studies do support not only an effect of melatonin on breast cancer, but also on other tumors. In fact, to date, melatonin has been shown to be oncostatic for a variety of tumor cells in experimental carcinogenesis.

Reports show that melatonin exhibits a growth-inhibitory effect on endometrial and ovarian carcinoma cell lines, Lewis lung carcinoma, prostate tumor cells, and intestinal tumors.

Furthermore, today, several clinical trials confirm the potential of melatonin, either alone or in combination with standard therapy regimens, to generate a favorable response in the treatment of human cancers.

Given the evidence from experimental studies supporting the general oncostatic property of melatonin, we therefore speculate that exposure to light at night not only has an impact



on breast cancer risk, but also may increase the risk of other cancers, primarily through the melatonin pathway. This has been posed previously without much further attention from the scientific community, but most recent evidence from observational studies supports such a link.

Vitamin Special 15% off

Sleep & Stress Supplements



Melatonin 1 mg Reg \$7.24
SALE \$6.15



Melatonin 3 mg Reg \$7.48
SALE \$6.36



Melatonin 10 mg Reg \$13.59
SALE \$11.55



RediSorb Melatonin Spray
Reg \$17.00
SALE \$14.45



Sleep Factors Reg \$33.15
SALE \$28.18



RejuvaSleep Reg \$30.52
SALE \$25.94



5HTP Reg \$19.06
SALE \$16.20



Gaba Reg \$18.55
SALE \$15.77



L-Tryptophan Reg \$28.05
SALE \$23.84

Know Your Nutrients: Melatonin

by Amanda Hawkinson



What is Melatonin? Melatonin is a hormone made by the pineal gland, a small gland in the brain. It helps control your sleep and wake cycles. Minute amounts of it can be found in foods such as meats, grains, fruits, and vegetables.

The amount of melatonin your body makes is carefully regulated by your body's "master clock." Normally, melatonin levels begin to rise in the mid-to late evening, remain high for most of the night, and then drop in the early morning hours.

Light affects how much melatonin your body produces. During the shorter days of the winter months, your body may produce melatonin either earlier or later in the day than usual. This change can lead to symptoms of seasonal affective disorder (SAD), or winter depression.

Unfortunately, natural melatonin levels slowly drop with age. Some older adults make very small amounts of it or none at all.

Currently, supplemental melatonin is used to treat jet lag or sleep problems, such as insomnia. Scientists are also looking at other good uses, such as:

- Treating seasonal affective disorder (SAD).
- Helping to control sleep patterns for people who work night shifts.
- Preventing or reducing problems with sleeping and confusion after surgery.
- Reducing chronic cluster headaches.

It has been suggested that, when taken as a supplement, melatonin can stop or slow the spread of cancer, make the immune system stronger, or slow down the aging process. However, more research is needed to verify these claims.

Melatonin is considered safe in low doses for short and long-term use. Children and pregnant or nursing women should not take melatonin without talking to a doctor first.

Side effects may include:

- Sleepiness.
- Lower body temperature.
- Vivid dreams.
- Morning grogginess.
- Small changes in blood pressure.

Important notes: If melatonin makes you feel drowsy, do not drive or operate machinery when you are taking it. During health exams, tell your doctor if you are taking melatonin. And tell your doctor if you are having trouble sleeping (insomnia), because it may be related to a medical problem.

Source: WebMD

Essential Oils to Stabilize Your Circadian Rhythm

by Laurie S. Roth-Donnell, Master Herbalist, Holistic Health Practitioner

Circadian rhythms are a physiological cycle built into every living species broken down into blocks of twenty-four hours, prevalent in animals, plants, fungi, cyanobacteria and all living beings. The scope of modulation is determined by external factors such as temperature, time zone change experienced when traveling and sunlight. These rhythms play a key role in determining the feeding and more importantly the sleeping patterns in animals and human beings alike. Circadian rhythm demonstrates a clear behavior of brain wave



Essential Oils continues on page 6...

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visit our website at
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or call 1-800-447-7276

Patient Profile

by Chris Brannon RN BSN

Having trouble sleeping? This problem is one shared by one of our Riordan Clinic patients. A female patient came to the Riordan Clinic with irregular sleeping patterns. Most of the time, it was difficult for this individual to fall asleep. Once she finally did, she found herself waking every few hours. After several months of this exhaustive pattern, she came to us for help and was given supplemental melatonin to try.

A period of trial and error ensued, and a month later she was able to find the effective dose. Via a sublingual tablet or spray, she mastered getting to sleep and waking fully rested.

Regular sleeping patterns play an important long term role in eliminating certain health problems, including sleep disorders, depression, bipolar disorder, and seasonal affective disorder.

This patient's story is a great example of the exceptional care you will receive at the Riordan Clinic. To find out more or to make an appointment, call **316-682-3100** to start your journey to a healthier you.

In Gratitude...

As a not-for-profit organization, we rely on many to make our vision a reality. **So many come together to provide our patients with a place of hope, health and healing.** Here are just a few we'd like to thank.

- All individuals and groups who have donated to our cause through financial support, including:
 - S.R., *Wichita, KS*
 - M.L., *Wichita, KS* to the Patient Scholarship Fund
 - K.M., *Hot Springs Village, AR* to the Patient Scholarship Fund
 - D.G., *Wichita, KS* to the Patient Scholarship Fund
 - C.R., *Wichita, KS* in honor and memory of a former "co-learner" and friend, *Gerald Zahler*, to the Patient Scholarship Fund
- Weisner/Harvey wedding party and Crestcom International for event/meeting space rental.

activity, cell regeneration, hormone production and other natural life cycles, all part of your daily biological clock. There are several natural remedies to assist you in adjusting your circadian rhythm to maintain health and well being, so let's look into what Mother Nature has gifted us.

Essential Oils and Herbs Recommended This Fall

Fall, like spring, is a time of extreme change for many of us living in non-temperate zones. The air is drier or in some climates wetter and cooler, resulting in cold and flu symptoms. Emotional stress tends to be stronger in the fall, as we tend more toward reflection. To assist in staying healthy, there are a number of things you can do with the utilization of essential oils in your environments. You may want to consider the following essential oils for your Fall Medicine Chest.

Lavender (*Lavandula Angustifolia*) has an uplifting and mood balancing quality that may help one on both a mental and physical level. It has a fresh, sweet, floral, herbaceous aroma that is soothing and refreshing. Because it is the most versatile of all essential oils, no home should be without it. Lavender is an adaptogen, and therefore can assist the body when adapting to stress or imbalances. It is a great aid for relaxing and winding down before bedtime, yet has balancing properties that can also boost stamina and energy. Lavender is a natural pain reliever and has been proven to reduce tension headaches when breathed in as vapor or diluted and rubbed on the skin. When added to a vaporizer, lavender oil may aid in the treatment of cough and respiratory infections, commonly associated with seasonal changes.



Cinnamon (*Cinnamomum Cassia*) There are two different oils extracted from this tree. Cinnamon-leaf oil has some use in aromatherapy, but cinnamon-bark oil is a strong irritant, high in toxicity and should not be used. Cinnamon-leaf oil is extracted from the leaves and young twigs of the tree by steam distillation. Aromatherapists use cinnamon-leaf oil in massage to relieve rheumatism, and it can be beneficial in the treatment of digestive disorders. It is a stimulant

and is used to treat circulatory problems. It can also be of benefit to those who are suffering from nervous exhaustion.

Clove (*Eugenia aromatica*) This essential oil is extracted from the buds of the tree. The scent of the oil is hot spicy, sweet, and penetrating. Clove is a tropical evergreen that grows to a height of about 40-70 feet and has aromatic dark green leathery leaves and bright pink buds that bloom into yellow flowers, followed by purple berries. Heating the oil creates vapors, which open sinuses and breathing passages. This oil is uplifting and reviving, an aphrodisiac, is a mental stimulant, improves mental clarity and memory; improves digestion; reduces pain by numbing the area; a disinfectant and repels insects. Clove bud oil can irritate the skin and should either be avoided or used with extra care by people who have sensitive skin. Use small amounts carefully.



Autumn Mood Lifter

Used for scenting the kitchen or any room with aromatherapy, inviting fall and settling your natural cycle.

Blend

2-4 cups of apple cider or apple juice

1 apple cut into small pieces

1 pinch of nutmeg

1 cinnamon stick

Slowly simmer on the stove and enjoy the soothing aroma that will permeate the room.

Please consult your primary care physician before embarking on any new health regime. Be happy and sleep well!

Sources: Peacefulmind.com & innovateus.net & [young living.com](http://youngliving.com)

Clinic Buildings Get a Makeover

The Riordan Clinic's pyramid and eight geodesic domes have been landmarks on the Wichita skyline since 1985. Their bright white color is shining even brighter, following recent exterior painting and needed repairs. We are grateful to both **Sherwin Williams Paint Stores Group** and **Rogers Contracting** for providing generous discounts for materials and labor, enabling the economical completion of the project.

Approximately 35,000 people come to the Riordan Clinic campus each year from many states and a number of foreign countries. They include co-learners (patients), health care professionals, student interns, tour groups, Lunch and Lecture attendees and groups who rent areas for professional or private events. The refurbished exterior of the domes and pyramid will carry us into the future with a unique look that matches our unique feel and innovative programs.

If you are interested in making a tax deductible contribution toward this Painting Project, please contact Paula Smith at the Riordan Clinic, 316-682-3100 or by e-mail psmith@riordanclinic.org.



The Riordan Clinic would like to welcome

**Anne Zauderer,
Doctor of
Chiropractic,**

to our medical team!
Dr. Zauderer is all set up and ready to see patients.

**Call now for an appointment,
682-3100.**

Chiropractic Care for the Whole Family

Dr. Anne Zauderer is excited to be back in the heartland! As a native of Wichita, Kansas, she left to pursue a B.A. in psychology from Texas Tech University and graduated with Honors. She spent a year studying naturopathic medicine in Seattle, Washington before finding her calling as a chiropractor. She graduated Magna Cum Laude from Life University in Atlanta, Georgia, as a Doctor of Chiropractic.

Dr. Anne has extensive hours of training and experience in the field of pediatrics and pregnancy through the International Chiropractic Pediatric Association (ICPA) as well as being certified in the Webster Technique (turning breech-positioned babies in utero). She specializes in specific, low force adjustments, which are great for everyone from infants to seniors. She has two children, ages 11 months and 3 years old and a wonderful husband. Dr. Anne's passion lies in working with moms and families to help raise children with a conscious and healthy lifestyle. She is also an avid marathoner, having completed 6 marathons, and enjoys working with athletes to help rehabilitate injuries and enhance their performance.

In addition to family care, Dr. Anne also has a passion for research. She worked with the organization Straighten Up America, which is an initiative of the President's Council on Physical Fitness and Sports, to design a pilot study on the effects of a daily stretching regimen on the static, upright posture of elementary school children. She is also published in the Annals of Vertebral Subluxation Research for a paper entitled, "Resolution of Depression & Quality of Life Improvements in a Patient with Major Depressive Disorder after Hemisphere Specific Stimulation: A Case Study."

Dr. Anne is excited to join the Riordan Clinic team. As the daughter of Dr. Ron Hunninghake, Chief Medical Officer at the Riordan Clinic, Dr. Anne has grown up living the vision and mission of the Riordan Clinic. She brings a fresh perspective but yet understands the core values that make the clinic so unique and innovative.

Why Should I Choose Chiropractic Care?

Chiropractic deals with the master communication system of the body: the nervous system. The nervous system includes the brain, the spinal cord and the nerves going out from the spine. If nothing is blocking this system, then the body works at its fullest potential. However, if a spinal bone moves out of alignment, it interferes with the transmission of neural impulses. Organ health is disrupted, thus creating an opportunity for illness to emerge.

A chiropractor finds the spinal bones that are not in alignment and gently moves the bone back into alignment. (Dr. Anne often uses an Activator, a simple hand-held device that lightly "taps" and adjusts the muscle or muscle group that attaches to the misaligned spinal bones.) Thus, communication both from the brain to the body and also the body back to the brain is restored. Proper communication is necessary for the body to work optimally. Therefore, the chiropractor's job is not just to make you "feel" better, but to remove any interference within the body so that it can function at 100%.

A properly functioning nervous system is necessary at all ages, but especially during childhood. From birth, children are rapidly growing and developing. A child will develop 90% of the connections between the right and left hemispheres of his/her brain by the age of 5. This is before he or she even starts school! This is a vitally important time for kids to be under safe, gentle chiropractic care.

A properly functioning nervous system in children has been shown to help ear infections, colic, reflux, scoliosis, asthma, allergies, cranial malformations, and facial asymmetry.

Dr. Anne utilizes chiropractic neurology, a specialized branch of chiropractic, with children to assess for and treat neurodevelopmental disorders such as ADD/ADHD, Autism, Asperger's, OCD, and depression. This form of treatment is a drugless approach that combines biochemical assessment with specific exercises to develop weaker areas of the brain.

Chiropractic care is also great for adults because it can slow down or even stop the degenerative process within the spine. Restoring motion to the joints of the body allows for proper biomechanical movement as well as restoring appropriate nerve function. It is very effective for adults who suffer from low back pain, neck pain, headaches, arthritis, restless leg, TMJ issues, and much more.

If you are out at the Riordan Clinic, stop by Dome 4 to meet Dr. Anne! To learn more or to make an appointment, call us at 316-682-3100 or email patientcare@riordanclinic.org.



WE ARE EXPANDING!

Are you, or do you know, a like-minded physician (MD, DO) interested in fulfilling the Riordan Clinic's mission of "stimulating an epidemic of health?" Someone who sees patients as equal participants in their health?

Our current doctors are amazing, and due to recent change and tremendous growth, we are looking to add to our team. Dr. Ron Hunninghake, Chief Medical Officer, is looking forward to mentoring the next generation of nutrition minded doctors.

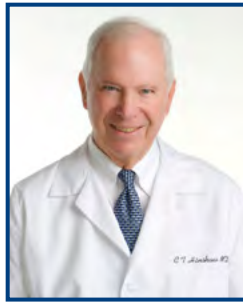
For more information about this incredible opportunity contact

Donna Kramme, COO
dkramme@riordanclinic.org
316-682-3100.

Thank you for your continuous support, believing in what we do, and for spreading the word!



Lunch & Lecture Series 2012



Lights Out: Sleep Is Still the Best Medicine

Presenter: Dr. Charles Hinshaw Jr.,

Date: Thursday, October 11, 2012

Time: 12:00 p.m. to 1:00 p.m.

Cost: \$10—Lunch is included.

Circadian rhythms are important in determining the sleeping and feeding patterns of all animals, including human beings. Circadian rhythm disorders are disruptions in a person's "internal body clock," and can be caused by many factors, including: shift work, pregnancy, time zone changes, medications, and changes in routine. Dr. Hinshaw will discuss the link between circadian rhythms and the clear patterns of biological activities linked to this daily cycle.

If you are unable to attend in person check out this lecture on our **live webcast**.

Reservations are required. Call **316-927-4723** or email us at **reservations@riordanclinic.org**



Ask the Doctors: Reviewing Your Check Your Health Results



Dr. Ron Hunninghake



Dr. Jennifer Kaumeyer



Dr. Anne Zauderer

Date: Thursday, October 25, 2012

Time: 12:00 pm to 1:00 pm

Cost: FREE—Feel free to bring your lunch.

In This Lecture:

Meet Our Doctors. Ask Questions. Review Your Laboratory Test Results.

Riordan Clinic doctors will discuss laboratory results from the September "Check Your Health" event. You can participate in the lecture in two ways:

- 1) Bring your "Check Your Health" test results to the lecture and follow along as the doctors offer an explanation for some of the key measurements.
- 2) If you didn't take part in the event but want to learn more, we will provide you sample test results to use as a learning tool during the lecture. Follow along with the doctor's comments.

"Check Your Health" laboratory tests results provide a guide to supplementation and dietary nutrition to optimize your health. Come to this lecture to learn how you can benefit.

If you are unable to attend in person check out this lecture on **live webcast**.

Reservations are required. Call **316-927-4723** or email us at **reservations@riordanclinic.org**

