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ON THE BORDER

Info & insights from the interface between energy healing & science

December 2015

Welcome to the last edition of 'On the Border' for this year. How time flies!

To celebrate Christmas we have a **real Freebie** this month in the form of **a free childrens' book** (in Dutch). A perfect Christmas present!

There are still a few places available in the **new Intermediate Healing course** (***'Heal jezelf verder op zondag'***) due to start on **24th January 2016**! This is for all of you who have previous healing experience and want to refresh and extend it further. See below for more details.

For those of you new to 'On the Border', this is Jayne's monthly Ezine newsletter about the latest information and insights into energy fields, healing and science. Each month I share with you some of the latest research and how it applies to healing, energy work & (daily) life. There is also a 'Freebie' section where you get something for nothing, gratis.

Out of Synch: How Our Digital Lifestyles Are Upsetting Our Body's Natural Rhythms

Are you one of those people who falls asleep minutes after their head hits the pillow and awakens cheery and refreshed when the sunlight filters through the window?
If you are, then count your blessings! Your reliable inner clock may also deserve some credit for other aspects your health: good blood pressure, metabolism, digestion, and more.

Millions of people across the world —including nurses, firemen, airline crews, truck drivers and factory workers—have irregular work schedules that may cause a disconnect from the basic time-based patterns of daily life. Our internal organs operate in patterns called circadian rhythms that repeat over the course of each 24-hour day. And research is revealing that when these physiological rhythms are out of sync— a state known as circadian misalignment—the health impacts can be vast, from diabetes and obesity to cancer, heart problems, infertility, mood disorders and mental decline. "Your body is optimised to work

with a certain relationship to the natural world. Good health follows from that," explains Martha Gillette, a neuroscientist and circadian expert at the University of Illinois at Urbana-Champaign. "In modern life, we've taken the world and done with it what we wish."

Because modern routines clash with natural rhythms, scientists are beginning to suspect that virtually everyone is affected to some degree. Staying up late to work or have fun, using laptops, mobiles and other screens before bed or to quell insomnia in the middle of the night, indulging in midnight snacks—all these apparently innocuous activities can subtly throw the body off-kilter. The body clock is an ancient system, common to all life on earth, that relies on sunlight and darkness, periods of activity and periods of rest to calibrate itself. Today's society, with its electric lights, 24-hour convenience stores, proliferating digital devices, global economy and "always on" mentality, has scrambled our inner timing systems.
In short, we are living in an age of circadian dysfunction.

Anyone who has flown across time zones knows what it feels like to have a body clock that is out of whack—fatigue, insomnia, digestive problems, headache, dizziness, nausea, among other symptoms. Jet lag is a classic example of circadian misalignment. The body typically adjusts within a week or so. But we are increasingly subjecting ourselves to the equivalent of permanent jet lag.

The science is so new that no one knows how many of us are affected, but people may experience mild circadian misalignment in a variety of ways without realising the root cause. It could present as stomach upset, unexplained insomnia or, more ominously, the shifts in blood pressure, inflammatory markers, insulin resistance and other metrics that signal the implacable onset of heart disease, diabetes or cancer. Happily, research reveals inexpensive and straightforward solutions that will allow most people to reset their inner clock.

Timing Is Everything

Almost every living thing, from cyanobacteria to lemurs, is attuned to the earth's daily rotation. Evolution has smiled on creatures that capitalise on the planet's day-night schedule, matching their internal workings to the shifting conditions of the outside world.

These are the fluctuations known as circadian rhythms (the word "circadian" comes from the Latin for "about a day"). In many animals they dictate the timing of hibernation, courtship and reproduction. Even in plants, circadian rhythms are crucial to survival. In June scientists at the University of Washington found that it is thanks to a circadian gene that the common garden petunia waits until night to release its fragrance, which attracts nocturnal pollinators.

Circadian rhythms also create the ebb and flow of human physiology. They explain why fevers run highest at night, why a late meal can make it hard to sleep, why teenagers are late risers and many other familiar aspects of daily life. And they are grounded in the daily planetary shift between light and darkness.

To align the body with what's going on in the outside world, the suprachiasmatic nucleus, which serves as the brain's master clock and is located deep within the hypothalamus, constantly monitors the intensity of ambient light. Bright light in the morning sets the body clock for the day, and evening darkness nudges organs into their night- time mode. For example, the drowsiness-inducing hormone melatonin flows, preparing the body for rest. The bladder expands to hold more urine, making it possible to sleep through the night. And the liver makes extra glucose to keep the brain nourished throughout the overnight fast.

But if the master clock encounters bright light at night, it sends "start the day" messages at the time when organs are settling down for the evening. Circadian rhythms get scrambled. This can happen when flying across time zones (and explains why jet lag is worse when traveling east); when people use an iPad, cell phone or laptop at night (because digital screens emit the same blue wavelengths found in morning sunlight); and when people work the wee hours in a brightly lit space or fall asleep with the television on.

Scientists have been investigating circadian rhythms for decades, but until very recently they did not appreciate how critically important these rhythms are to the regulation of nearly every bodily system. In the last 10 years or so, work on circadian rhythms and human health has really just exploded.
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One of the discoveries: by banishing darkness, modern society has ushered in a host of potential health problems. We are all so used to nighttime light exposure that when you tell people it's unnatural, they often reply, 'What? Light?' People don't think of light exposure the same way they think of something like a drug or a dietary intervention, but really it does have these very profound effects on our physiology.

An even newer revelation: mealtimes may also be critically important to keeping circadian rhythms in balance. Mounting evidence suggests that the body relies not only on light exposure but also on behavioural cues to orient itself in time—sleep, exercise, social interactions and, perhaps most significant, eating.

The latest research suggests that the body is designed to take in food during the day and fast at night. Breakfast, like sunlight, seems to serve as a timing cue, alerting the body clock that it is morning. So snacking long after dark may be as disruptive to natural rhythms as staying up late bathed in the illumination of a digital screen.

Off the Clock

Scientists are learning that there is a genetic basis to people's natural sleep inclinations. About half the population is predisposed to be either early birds or night owls, and the other half fall somewhere in between. These inherited patterns are known as chrono-types. Extreme chronotypes are rare: delayed sleep phase syndrome, for example, affects three in 2,000 people.

Misalignment Made Flesh

Disconnecting from daily rhythms strikes the body at the most basic level: the cell. In 2014 a team led by geneticist John Hogenesch of the University of Pennsylvania made an astounding discovery: Nearly half of all gene activity in mammals is timing-related. Previous estimates had been closer to 15 percent.This means the circadian clock could be influencing most, if not all, of our physiology and many of our behaviours.

Over the course of two days Hogenesch's team removed 12 organs, including the heart, lungs and liver, from a different group of mice every two hours, then analysed the RNA from those tissue samples to figure out which genes were active in which organs at every hour of day and night. The team learned that organs do not chug along at a steady pace. Instead they are alternately active and quiescent, attending to certain tasks during the day and others at night, with "rush hours" of activity at dawn and dusk.

Another groundbreaking study, published a year earlier, detected the same telltale signs of rhythmic gene activity—in the brain. The work, conducted by the Pritzker Neuropsychiatric Disorders Research Consortium, involved 89 brains taken from people who had donated their bodies to science. Some of the donors had suffered from major depression, others had not. In the healthy brains, as in Hogenesch's mice, hundreds of genes ramped up and slowed down at specific times of day, forming daily patterns so clear and predictable that they could be used to pinpoint time of death for an unmarked sample of brain tissue.

But the brains of depressed people were different. Their gene activity was haphazard and disorganised, lacking these daily patterns. Psychiatrists have long noticed that people with mood disorders tend to have sleep problems and other signs of circadian misalignment. Now here was physical proof that the circadian rhythms of depressed people are weak or nonexistent—circadian misalignment made flesh.

Flipping a Biological Switch

In some people the master clock gets broken. Their bodies adopt a 'non-24' sleep pattern with, for example, bedtime shifting an hour later each day.

Non-24 is a common side effect of blindness because damaged eyes do not transmit the necessary light signals to the master clock. But in the rare instances when non-24 affects sighted people, no one knows the cause.

The suprachiasmatic nucleus (the master clock) functions like an orchestra conductor, keeping time so that the individual rhythms of the heart, liver and other organs can coordinate—a bodily state known as entrainment. When the master clock stops working properly— whether because of a biological defect or because of frequent eating, working or socializing late into the night or at odd hours—internal organs begin operating at different tempos, like instrumentalists in a cacophonous orchestra with no maestro. Illness ensues.

Organs That Cannot Keep Time

Diabetes affects more than 29 million Americans, three times as many as a quarter of a century ago. Experts cite factors ranging from the ubiquity of cheap sugary drinks and snack foods to sedentary habits. But some scientists are starting to suspect that disrupted circadian rhythms may also underlie Americans' mass metabolic dysfunction.

For years, observational studies have shown that people who work nighttime or rotating shifts are susceptible to much higher rates of obesity and diabetes. More recently, scientists have begun to artificially induce circadian misalignment, and here, too, one of the most dramatic changes they see is an increased disposition to weight gain and metabolic problems. In 2009 Harvard scientists kept 10 healthy people in a lab, scrambling their mealtimes and sleep schedules while subjecting them to constant low light. As the participants' inner timekeepers lost track of day and night, their blood pressure, body temperature and hormone production stopped following regular patterns. Most strikingly, levels of leptin, the hormone that alerts people that they have eaten their fill, decreased. People with low leptin levels tend to over-eat. In addition, three participants became prediabetic, all in just 10 days' time.

Experiments in animals are yielding equally dramatic results. Multiple labs are finding that when mice are kept in constant light or are forced to eat during their normal resting time, they gain weight—even when they consume the same number of calories. We are apparently not as good at metabolising our food when it's not eaten at appropriate times of day.

Circadian disruption leads to cognitive as well as metabolic problems. Alertness and motor coordination decline markedly. If you look at the frequency of industrial accidents, they peak between two and four in the morning,. That is the time when people should not be doing anything that requires vigilance.

People whose jobs require them to work odd hours also have trouble making agile mental calculations. Emergency room doctors working the night shift showed short-term memory impairments in a 2012 study.

Animal experiments are confirming that the hippocampus, the part of the brain central to learning and memory, is highly sensitive to circadian disruption. For example, in studies published in 2013 found that rats with the equivalent of jet lag have trouble remembering what they have learned. Rats with longer-term circadian disruption, the kind that afflicts shift workers, have difficulty learning new tasks as well as recalling them.

Practically every month a new study spotlights circadian misalignment in some other ill. In a study published in April scientists at the University of Warwick examined uterine lining cells from 70 women and found a higher frequency of circadian disruption in women who suffer multiple miscarriages—suggesting that misalignment of daily rhythms in the womb hampers the ability of the fertilised egg to implant. Pregnancy is all about timing—an able sperm meets a fertile egg just as it is making its way through the fallopian tube—but it turns out that timing also matters at the cellular level.

For unknown reasons, rhythms shift later during adolescence, then return to normal in young adulthood. Several recent studies suggest that the disconnect between high school start times and teens' natural sleep needs compromises brain areas related to reward and self-control, making them more susceptible to getting hooked on drugs and alcohol. New studies also link circadian misalignment to greater risk of post-traumatic stress disorder, breast cancer and inflammatory bowel disease.

The Value of Repetition

Circadian rhythms are old-fashioned. They are conservative. They are your grandmother's medicine. Go to bed at a reasonable hour. Eat a good breakfast. Do not push yourself too hard. Something in our modern spirit rebels against these strictures. We will stay up until 3 a.m. binge-watching films or a favourite series if we feel like it. We will fall in love with people in faraway places and use Skype and cell-phone apps to erase the time differences.

But the need for structure and daily repetition is woven into our DNA. Sunrise and sunset bookended our ancestors' days. We evolved on a planet that has a roughly 24-hour day, and we are biologically prepared to function better if we are in a regular rhythm.

Circadian "Hygiene"

Melatonin supplements improve mood and memory in people with dementia, who suffer from disturbed sleep and other hallmarks of circadian dysfunction. Sitting near a device called a light box to get bright light in the morning is a boon for people with seasonal depression. And forward-thinking nursing home administrators are finding that when they provide varied illumination instead of keeping the lights on 24/7, elderly residents are less disoriented.

People with bipolar disorder are especially vulnerable to circadian disruption: pulling an all-nighter or traveling overseas can trigger an episode of mania or depression. Conversely, regularising routines can stabilise their moods. A therapy recently developed - interpersonal and social rhythm therapy - asks patients to record daily when they get out of bed, when they first interact with other people, when they begin their daily routine, when they have dinner and go to bed—and then to tweak those times over a period of weeks to establish a schedule they can stick to. Keeping routines very regular, seven days a week, no shifts on weekends has proved effective in two large trials.

Circadian rhythms naturally deteriorate with age—which may account for some of the sleep and memory problems of the elderly. But strengthening circadian rhythms may be a hedge against cognitive decline. In research, old hamsters with strong circadian systems outperformed misaligned younger animals on memory tasks.

Changing habits is not easy. But if more people understood the potential long-term benefits to their mood, sleep quality, cardiovascular health, weight-loss goals and mental sharpness, they might make the effort. Maybe we should

consider sleep and circadian hygiene just as important as washing our hands? It seems to be critical for good health and well-being.

There is a lesson here for us, with our overextended, brightly lit, Starbucks-fueled lives. Modernity has made it possible to stretch beyond the confines of the 24-hour day, but in the process we have become untethered from the fundamental pulse of our planet. Science is revealing that we do so at our own risk.

References:

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Heal jezelf verder op zondag

This training is open to **anybody who has previous healing experience**. This means if you have done a 'Heal' course with me before, or you have done another healing training elsewhere. **If you know these basics then you are welcome to take part:**

- Tan tien grounding & hara
- How to carry out a chelation (hands-on healing)
- Healers preparation: opening chakras ('Shirley-en'), chakra & level lift
- 6th level uplift & 7th level close (6e level verheffing & 7e level afronding)
- 1st level lines of light repairs
- 2nd level cloud clearing

If you are not sure then please contact me to check (contact@jaynejubb.com).

The dates – all on Sundays – are:
Sunday 24th January 2016
Sunday 7th February
Sunday 21st February
Sunday 6th March

Each class will take place between 10-16u in 'De Ruimte' (Weesperzijde 79A, Amsterdam) , and includes a fabulously lekkere lunch. The course will be given in Dutch and there is space for a maximum of 16 participants.
Price: €460, incl. btw and coffee/tea/lekkere dingen/lunch

The 'what will I learn?' details can be found on the course homepage at http://www.jaynejubb.com/healverder2016.htm

Although it is tempting to fill up the days until they (and you) burst from overload, the relaxed Sunday-feel is one that seems to work much deeper and effectively. In this way there is more time to pratice, experience and receive the healings and exercises. Sometimes less is more….You will still get well-fed on all levels - body, mind and spirit - but will (hopefully) not suffer from overload indigestion ;=) And my intention for this course from the start is that it is an antedote to our over-stuffed high-paced lives: **Heal! en jezelf ook – en nu gaat het verder**…

Do you want to register?
Download the aanmeldingsformulier, fill it in and email it to me.

This information, and more, is also available online at:
http://www.jaynejubb.com/healverder2016.htm

December Freebie

In this section you get the chance to get something for nothing. Helemaal gratis. Always a pleasure!

Christmas has come a little bit early for On the Border, thanks to author Jeroen van Helvort who has offered his childrens' book '**Het geheim van het zwaard van engel Michae**l' as a freebie this month.

Would you like to be the lucky winner?
All you need to do is to email me your name and email address **before Saturday 12th December 22u.**
We'll draw a name out of the hat and Jeroen will contact you on Monday 14th December to get your address details. Then you will receive the book in time for Christmas (hopefully)

If you don't win but still would like to order this book as a special present for the child (or children) in your life, then go to:
http://www.EngelBoekenVoorKinderen.nl

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Back Issues

If you have missed any of the previous issues, then the main articles and full newsletter pdf links can be found at www.jaynejubb.com/backissues.htm The Freebies each month are only valid for that month....

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