

# Strength & Vitality Bulletin

Volume 17 Issue 6

15th December 2020

Well with December expiring it shall bring this dramatic year to a close as well as completing this decade, and from what we can gather most people are happy to see it finally disappear. Although there appears to be some light on the horizon in connection with this current pandemic, it is far too early to tell as to whether it is going to be successful or not. The entire world has been knocked around by it, and certainly we can say that for us in N.Z the country has been greatly blessed by having such a small number contract this powerful disease. It shall be very fascinating to see how this coming year develops, and we guess most of you will make yourself available to have the vaccine as soon as it becomes available in N.Z. Should we all partake or is it best to rely upon an immune system bolstered by natural therapy and herbal supplementation? Each one will have to make a personal decision on this, and we would like to make clear that if you ask our advice on the subject we will only explain that vaccines have their place, however they are not totally free of introducing complications and the responsible authorities will do their best to produce a balanced view on the subject, allowing each citizen in N.Z. to make their own individual decision. By the time we produce our next newsletter there will be greater clarity on this subject as we see how the rest of the world copes with this pandemic. So enjoy the summer holidays and until then,

Kind regards Gordonna

## QUALITY SLEEP IMPROVES OUR OVERALL STATE OF HEALTH

Sleep deficiency can lead to physical and mental health problems.

Bob Dylan sang back in 1964 "The times they're a changing" and most of us would readily agree that this year would have to be the most momentous in recent history, perhaps even rivalling the four years of 1914 - 1918. Without a doubt multiple disturbing issues and crises have swept

Certain experiments have been conducted which has demonstrated that by interrupting our dream sequence repeatedly can bring about increased irritability, anxiety, depression and appetite, .....

the world of mankind, with the news media busier than ever. Allied with that is the subject we focus on in our last newsletter of the year, and we would like to add our personal insight into the



### THE EFFECTS OF

## SLEEP DEPRIVATION



Poor Memory & Forgetfulness



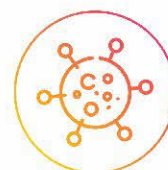
Poor Ability to Think & Concentrate



Emotional Irrationality



Weak Immunity



Risk of Cancer



Risk of Blood Pressure, Heart Attack & Stroke



Risk of Diabetes



Weight Gain & Poor Metabolism



Fertility Issue

Poor sleep affects all segments of our society, however in these stressful times in which we find ourselves, the need for quality sleep on a regular basis is becoming more crucial than ever before. New research delving into the health and wellbeing of N.Zer's has found that more than a third (35%) of Kiwis report not getting enough sleep, or that the quality of their sleep is compromised.

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An ounce of prevention equals a pound of cure



mix, that poor sleep is something we consistently run across as we conduct our business activities. We last discussed this subject at length in Newsletter 20 15th December 2007, so we consider it very appropriate to analyse this aspect of natural health care, as we end the second decade of this century. In it we shall discuss the pattern of how we fall asleep, highlighting the 4 stages of why it occurs in the manner it does and explain the reason for the importance of dreaming. Along with that some of the latest research being done recently, and as usual we consider the most efficacious ways of solving this problem, concluding with a final flourish asking you to carefully consider the product on the final page.

## How much sleep is considered good for humans?

As can be seen from the illustration on the following page, there is considerable variety between humans and animals when it comes to daily requirements. Despite much research having been done on how it is possible to get by on as little as 5 hours per day, most investigators have ended up concluding that 7.5 hours is considered to be the optimal requirement for the average human. Thus even though you get opponents who argue differently they are in the minority, and of course in some cases they are considering that although 4 to 5 hours sleep during the night is acceptable, short daily naps

are tolerable as well. Famous for doing so were such well known people as: Thomas Edison, Winston Churchill, Margaret Thatcher and Leonardo da Vinci to name a few. And whilst we are mentioning famous people who are connected with the subject of sleep, you cannot get a better quote than that made by Benjamin Franklin, who although he suffered from insomnia said "There will be sleeping enough in the grave."

## What happens when we fall asleep?

There are 4 stages of sleep and each has a specific purpose to fulfil. And in spite of the fact that many think they fall asleep gradually, the exact opposite is what takes place. Although it is true that

the process begins gradually, by our getting comfortable in bed and adjusting to not moving around, the actual action of falling asleep happens in a milli second as Dr William Dement states in the book *Sleep Less Live More* "Awareness stops abruptly, as if 10 billion furiously communicating brain cells were suddenly placed on 'standby' status." We are in stage 1 and from that state we are easily awakened, and in some cases we would swear that we hadn't fallen asleep at all, because it happened without our being aware that it did. It is possible to be awakened by a jerking of an arm or a leg, and sometimes people think that this indicates a serious health problem, however it is quite common and doesn't signify anything suspicious.

Taken from Various Sources  
Including Natural News & Time Magazine



## ACTIVE HEALTH SERVICES PRESENTS

### Health News in brief from around the Globe

Southern Cross reports that 57% of N.Zer's watch TV or a DVD 1 hour before going to bed, whilst 27% said they woke up every day feeling fatigued.

In New Zealand the prevalence of obesity among adults aged 15+ was 30.9 percent, which corresponds to an estimated 1.24 million adults.

In a recent study, researchers at Tianjin University of Traditional Chinese Medicine explored another medicinal application of lemon verbena. Specifically, they looked at the effects of lemon verbena extract and its active component,

acteoside (ACT), on abnormal liver lipid metabolism. The researchers reported their findings in an article published in the *Journal of Natural Medicines*. According to studies, diabetes is linked to triglyceride metabolism disorder, which serves as an etiological factor in fatty liver disease, hypertension & cardiovascular disease. Diet-based therapy, which includes a balanced energy intake and the use of herbal supplements, is deemed a suitable approach to stop the progression of these diseases. The leaves of lemon verbena, a member of the Verbenaceae family, are used for cooking as

well as to make natural remedies. They are either cooked like spinach or used as a flavouring for salads. Many people enjoy eating lemon verbena leaves because of their strong yet delicious, lemon-like flavour. Because of the plant's widespread use, long term consumption of lemon verbena is considered safe.

*National Geographic* magazine November 2018 edition tells us about agricultural researchers that began worrying in the 1980's about the erosion caused by tillage, to which they quickly settled on a possible solution: perennial grain. They found there

answer to their quest in Kernza, the grain of intermediate grain grass, a plant sometimes grown for forage. With a 10 foot (3.04meters) system, and the ability to produce for up to 6 years, Kernza is slowly being ramped up to a commercial scale.

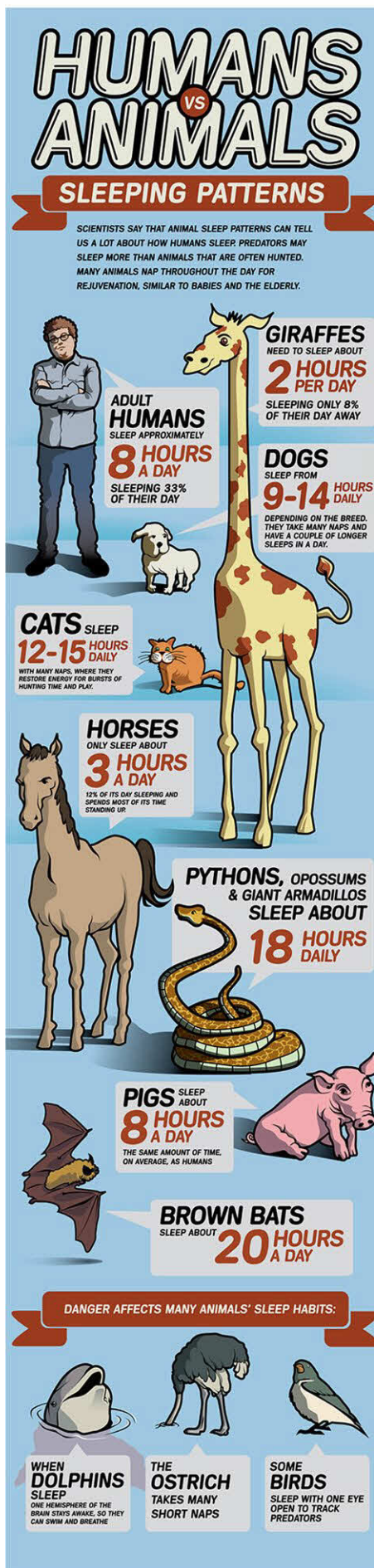
Covid 19 is projected to cause 1.9 million deaths in 2020, which would make this pandemic as the sixth highest cause of death globally. In contrast Alzheimer's disease and other forms of dementia ranked as the seventh leading cause of death globally. Two decades ago, they ranked as the 20th cause.

There is no such thing as bad publicity



This stage lasts usually for about 5 - 10 minutes and slowly we enter into the second period of the 4 phases of sleep. What's the purpose of this stage which usually lasts for another 15 - 20 minutes? Basically to prepare us for stage 3, and accordingly our heart beat and breathing slow down along with our body temperature dropping. This continues and at some point along the way our brain swings into action by producing bursts of rapid, rhythmic brain wave activity known as sleep spindles. Now however we are capable of entering into stage 3 in which our body relaxes even further and our brain waves become slower and greater which are known as delta waves. This process is known as deep sleep and because we are so unconscious the body can begin its repair work, which continues on at an increased intensity for about 20 to 40 minutes. This repair mechanism is possible because we are in a state described as "dead to the world." Our body may twitch slightly in various parts, however due to the inactivity of our physical body it is a perfect time in which to repair damaged parts of our anatomy or carry out maintenance renovation as called for by the built in instructions given by our overall commander, the immune system. As we move from the deeper phase of sleep which is conveniently called slow wave sleep something interesting begins to happen. In this state our muscles were in effect paralyzed, our heart rate has slowed down and eye movement has ceased along with minimal brain activity. However as we move from this final point of our sleep cycle we return to level 2 for about 20 minutes before moving onto a situation similar to stage 1 when something strange happens: Although we have hit something comparable to stage 1 once more, there is a significant difference than previously: We are capable of lots of movement with our heart rate, blood pressure and breathing increasing markedly. Rapid eye movement appears though not regularly but intermittently and in bursts. Yes we are dreaming and the eye movements are in response to such a development. This dreaming is in contrast to the first stage of sleep when we hopped into bed, for with that time frame we are only beginning the sleep cycle and we drift off happily without dreaming. So this part of the sleep cycle is known as REM sleep and that is demonstrated by our eyes moving rapidly (called REM = rapid eye movement) and this is accompanied by an increase in brain activity, heart beat and breathing. Why does this part of the cycle occur after such a period of quietness? It's where we start to dream, and it is thought that a lot of memorising takes place as well as the removal of items that the brain considers unnecessary. This process is similar to a computer doing a defrag in which a resetting transpires, enabling it to do its job more efficiently. Although we dream intensely at this juncture, upon awakening we cannot remember much and it has essentially been totally dismissed. Our dreams frequently have been so bizarre that it's a good thing they cannot be brought back together again, however we can summarise it as the brain now having being freed from its inhibiting day to day logic it can allow itself to clear away unnecessary dross. This development in the sleep cycle is so important that if

we do not get enough dreaming done it can result in profound personality changes. Certain experiments have been conducted which has demonstrated that by interrupting our dream sequence repeatedly can bring about increased irritability, anxiety, depression and appetite, which upon allowing people to dream again causes a correction in this behaviour. Much studying and writing has been done about dreaming, so much so that this is a subject in itself. But it's important to us that we dream regularly, and some experts consider that it allows us to view what is imprinted in our subconscious mind. What we dream about can affect our mood when we wake up. Pleasant dreams makes us happy, frustrating ones makes us belligerent, and the more people in our dreams makes us happier in general. It appears that mankind is gregarious by nature even when we are asleep. We repeat this sleep cycle about every 90 minutes, so in a 7.5 hour stretch of slumbering we have 5 cycles of 4 stages of sleep. (1-2-3-2=1cycle, which = 90 minutes), REM-2-3-2 is the 2nd cycle, repeating 3 more times.



Some humans have come to love their animal companions so much, that it is impossible for them to get to sleep without them being present. Sometimes it has resulted in a life saving situation.

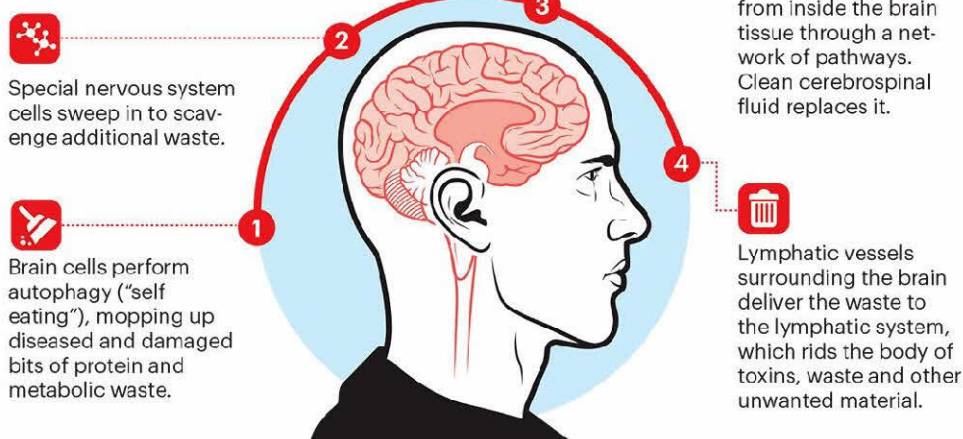


## New information about brain activity whilst asleep is exciting researchers.

Experts in the field of Alzheimer's are especially excited for they have been frustrated for years by their inability to bring about a cure. However progress has been made because of understanding better the sleep patterns we have. For instance it has been noted that as we get older people spend less time in deep sleep and also are capable of operating without the need for the same requirements as formally. Scientists in the 1980's to 1990's started studying the relationship between sleep patterns and cognitive test performances among those not suffering from Alzheimer's. It became clear that poor sleep habits brought about low cognitive tests over time. "That got people thinking about the possibility that sleep could be a risk factor in dementia" says Adam Spira a professor in the department of Mental Health at the John Hopkins Bloomberg School of Public Health. It has been discovered that those who reported spending less time in bed sleeping, and additional time tossing and turning which resulted in waking up during the night, were more likely to develop any type of dementia 5 - 10 years later compared to those who slept well. In a 2009 study on mice, it was found that while animals were awake, levels of protein fragments circulating in the brain surged. When the mice slept, the levels dropped dramatically - especially during the deeper stages of non REM sleep. And when the researchers deprived the mice of their deep non REM sleep, more amyloid protein built up in the brains over time compared to the mice who got regular nightly rest.

Similar changes were noted with amyloid in the spinal fluid of humans who were well rested compared to those who suffered from sleep deprivation. This was extremely revealing to the Alzheimer's experts, and as Adam Spira explains "That showed experimentally for the first time that there was an effect of sleep deprivation on Alzheimer's disease pathology. That's what really flipped everything on its head." In 2013, to test whether the same effect occurred in people, he studied brain scans of 70 healthy adults with an average age of 76. The same pattern emerged as per the mice, higher levels of amyloid plaques of those with compromised sleep compared to those who enjoyed quality slumber. 12 months later Dr. Maiken Nedergaard, co director of the Centre for Translational Neuromedicine at the University of Rochester, identified a previously ignored army of cells that is called to duty during sleep in the brains of mice and acts as a massive pump for sloshing fluid into and out of the brain. This plumbing system, which she dubbed the "glymphatic system" (it works in parallel to the lymph system that drains fluid from other tissues in the body) seemed to perform a

### A BREAKDOWN OF THE CLEANUP



neural rinsing of the brain, swishing out the toxic proteins generated by active neurons (including amyloid fragments) and clearing the way for another busy daily cycle of connecting and networking. Combining these two discoveries and studies has meant that the theory of sleeping efficiently might perform a housekeeping function critical for warding off diseases like Alzheimer's, is gaining in credence. Nora Volkow, director of the U.S. National Institute on Drug Abuse says "These results very much support the notion that one of the roles of sleep is to actually accelerate the clearance of beta amyloid from the brain." So we conclude this subheading by stating that as the latest research shows, a good nights rest isn't a luxury - it's **critical** for keeping the brain healthy.

Adapted from information coming from *Time* magazine 17/8/2020 written by Alice Park

### Are there other ways of bringing about better sleep?

As the saying goes, "there's more than one way to skin a cat" and we can assure that there are several routes that can be followed to achieve quality sleep. Many have been written at length by others, such as having a

regular bedtime routine, keeping the bedroom cool, staying off caffeine etc, etc. Because you will have read this many times before we shall refrain from such advice, even though it does apply and most of them achieve a certain amount of success in accomplishing restful sleep. We consider however other aspects, and to that end we refer to the advice offered by Natural Therapists. Louise Tenney succinctly sums it up in her book *Nutritional Guide* on page 225 "Research shows that people with chronic insomnia almost always have nutritional deficiencies. They usually lack B complex vitamins, vitamin C, vitamin D, calcium, magnesium, manganese, potassium and zinc. These natural nutrients enable our sleep mechanism to function properly. We know that a lack of any B vitamins can contribute to anxiety, depression and insomnia. If a person wakes up in the morning tired and exhausted it usually means the liver needs purifying and cleansing." She also recommends nuts & seeds such as sesame, sunflower, pumpkin and almonds. And finally as it is considered a nervous disorder, and almost all nervous disorders are affected by autointoxication or self poisoning by chronic constipation, LBS - II is recommended.

An ounce of prevention equals a pound of cure





### From the files of Cori Lisa Burke, ND

Sue is a 45-year-old female who presented to my clinic in June 2016 for issues with fatigue and foggy thinking. At our first office visit, she rated her energy level as variable, ranging from 3 to 6 out of 10. She stated that, after a few hours of physical activity, she was often overcome by exhaustion. She also described frequent insomnia. Sue commonly delayed bedtime until she was completely exhausted, falling asleep around midnight and waking between 6:00 and 8:00 AM on most days. Sue reported persistent and significant anxiety, which had plagued her since childhood. During episodes of anxiety, she experienced symptoms of muscle tension in her shoulders, neck, and jaw. Although she had experienced multiple episodes of depression in her lifetime, at the time she came to see me, she said she was not experiencing depressive symptoms. She expressed concern about the effects that chronic stress may have on her overall health. Sue's diet was basically a standard American diet. She explained that her diet would suffer during bouts of depression. Her water intake was approximately 75 to 100

ounces of water daily and she did not consume alcohol or caffeinated beverages. Sue was not exercising regularly but she was physically active throughout the day, and discussed a desire to restart a home yoga practice. Significant findings on review of systems included intermittent tension headaches and migraines. Her past medical history was significant for chronic post-traumatic stress disorder following repeated sexual abuse. She had also experienced multiple traumatic brain injuries (TBI). Sue reported a 16-month period starting in 2010 when she was frequently disassociating. She was often unable to eat or leave her house during this time and had trouble performing activities of daily living. She also reported intermittent episodes of vomiting and intense physical pain, which she related to somatic expressions of psychological pain. Sue had been unemployed for many years and was currently single and living alone. Sue had been in counselling intermittently for well over a decade, and reported that she had tried multiple antidepressants without success. In fact, most of the medications worsened her depression and caused weight gain. The only

medication she had found to be helpful was a drug containing amphetamine plus dextroamphetamine (known as Adderall), which had been prescribed for issues with cognition and concentration following the TBIs. At the time she came to see me, Sue was using Piper methysticum (kava kava) at a dose of 500-1000 mg, up to, for anxiety. She was also supplementing with methylcobalamin and cholecalciferol. I ordered a comprehensive array of lab tests and prescribed 350 mg of a magnesium at bedtime and advised her to continue taking her current dose of Piper methysticum as needed for anxiety. Sue's laboratory testing revealed a low-normal 25-OH vitamin D level despite daily supplementation. Her fasting glucose was mildly elevated at 104 mg/dL, however HbA1c was optimal at 4.8%. Her CBC, CMP, ferritin, lipids, cortisol, and thyroid studies were all otherwise within normal limits. I prescribed a short-course of high-dose vitamin D3 along with a multivitamin containing 800 mcg of L-5-Methyltetrahydrofolate, 1000 mcg of vitamin B12, activated forms of other B vitamins, and trace minerals. The patient reported that magnesium was helping to improve her sleep quality and quantity and she was sleeping at least 8 hours

**"If you don't stick to it daily you won't get lasting results" Dr Sam Robbins**





each night. At our 1-month follow-up, Sue said that she had been experiencing depressed moods. She described profound sadness, hopelessness, and a sense that her "future was bleak." She stated that she was "numbing" her moods with television and overeating. She was also less careful to include protein and vegetables at meals. I prescribed an herbal formula to support the adrenal glands and nervous system containing *Avena sativa*, *Melissa officinalis*, *Scutellaria lateriflora*, *Panax quinquefolius*, and *Rhodiola rosea*. This formula was chosen in part to address her past history of PTSD and TBI. One week later, the patient reported that her energy had improved within a few days of starting the tincture and she was starting to wake feeling refreshed. When another episode of MDD occurred, I added a second botanical formula, which contained *Hypericum perforatum*, *Actaea racemosa*, *Verbena hastata*, and a few drops of a Love-Lies-Bleeding flower essence. Flower essences can be a gentle yet powerful addition to an herbal tincture. They are highly individualized to specific types of mood concerns and may help to address the emotional and spiritual imbalances and

traumas underlying a person's experience. I find that many patients appreciate being involved in choosing flower essences to add to their treatment. Two weeks later, the patient reported general improvements in depressed and anxious moods, especially when she was consistent with the tinctures. She noted that her headaches were also significantly less frequent when she was compliant with treatment. She reported increased feelings of calm and serenity and an ability to listen to her inner needs. She stated that her energy continued to be variable and appeared to directly correlate with her moods. At subsequent visits the patient reported occasional worsening of mood, sleep, and energy that were triggered by significant life stressors and impending transitions in her life. She was still bothered by her general lack of energy; therefore, I prescribed a third herbal formula containing *Lepidium meyenii*, *Withania somnifera*, *Glycyrrhiza glabra*, *Oplopanax horridus*, and Olive flower essence. We continued to discuss stress management techniques and ways to reframe her experience of depression. I also encouraged her to begin treatment with a psychotherapist trained in Eye Movement Desensitization and Reprocessing (EMDR), which

she reported to be very helpful.

At our 6-month follow-up, Sue's mood was greatly improved, but she was continuing to experience intermittent fatigue. Although she described regular cycles and normal menses, Sue requested hormone testing, which revealed elevated serum DHEA-S and estradiol levels, and a low-normal progesterone level on day 30 of her menstrual cycle. I decided to remove *Glycyrrhiza*, which could contribute to the elevated DHEA-S, as well as *Lepidium* and *Actaea*, which may have estrogenic actions from her protocol, and prescribed 2 new formulas: the first contained *Hypericum perforatum*, *Verbena hastata*, and *Scutellaria lateriflora*; the second contained *Rhodiola rosea*, *Ocimum sanctum*, *Withania somnifera*, and *Vitex agnus-castus*. The patient was then lost to follow-up as she had moved out of state, but she was strongly encouraged to follow through with repeat hormone testing and to re-establish care with a psychotherapist.

Vitamin D3 capsules are recommended by our business



"If you don't stick to it daily you won't get lasting results" Dr Sam Robbins



**Volume 4 Issue 6**  
**15/12/20**

**NUTRITIONAL ADVICE FOR ALL THOSE  
INTERESTED IN A BETTER DIET**

Regular insert with our main newsletter.

Discussing food that can be consumed with

confidence



## Confidently Consume

**Sunflower Seeds** Because they contain the goodness necessary to germinate a new plant, all seeds are a concentrated source of nutrients. Sunflower seeds (they are technically fruits, known as achenes) are particularly health boosting for their rich vitamin E content, and their selenium and magnesium.

The antioxidant vitamin E and the trace mineral, selenium, work especially well together to protect against cancer. Sunflower seeds may benefit those suffering from rheumatoid arthritis and asthma as they have anti inflammatory properties.

Sunflower seeds are high in beneficial and unsaturated fats (omega 6). They also contain cholesterol lowering compounds called phytosterols, vitamin E, which help disarm free radicals and magnesium which helps reduce high blood pressure.

Because the fat in sunflower seeds can turn them rancid, keep them in an airtight container, preferably in the refrigerator. Dry frying or roasting sunflower seeds enhances their flavour, and snacking on them or adding to stir fries and salads is an excellent way to consume them.

Sunflower seeds are a source of many vitamins and minerals that can support your immune system and increase your ability to fight off viruses. These include both zinc and selenium. Zinc plays a vital role in the immune system, helping the body maintain and develop immune cells. Selenium also plays a role in reducing inflammation, fighting infection, and boosting immunity.

While the high levels of protein in sunflower seeds already help boost your energy levels, other nutrients like vitamin B and selenium can help keep you energised. The vitamin B1 (also known as thiamine) present in sunflower seeds can help you convert food to energy, which can keep you active throughout the day. Selenium can increase



blood flow and deliver more oxygen to your body. While sunflowers are thought to have originated in Mexico and Peru, they are one of the first plants to ever be cultivated in the United States. They have been used for more than 5,000 years by the Native Americans, who not only used the seeds as a food and an oil source, but also used the flowers, roots and stems for varied purposes including as a dye pigment. The Spanish explorers brought sunflowers back to Europe, and after being first grown in Spain, they were subsequently introduced to other neighbouring countries. Currently, sunflower oil is one of the most popular oils in the world. Today, the leading commercial producers of sunflower seeds include the Russian Federation, Peru, Argentina, Spain, France and China.

Whether you're hoping to have a baby, are pregnant or are just trying to follow a well-balanced diet, sunflower seeds have a lot to offer. These seeds are a good source of zinc and folate, while being an excellent source of vitamin E. Vitamin E is essential for prenatal health, as it helps the foetus develop and use red blood cells and muscles. Folate supports the placenta and helps prevent spina bifida, while zinc helps produce insulin and enzymes.

Nutritional Profile per 100 grams: Energy 582 kcals; Protein 20gms; carbohydrates 19gms; Fat 48gms; Fibre 6gms; Vitamin E 38mg; Magnesium 270mg; Selenium 49mcg.



# Product of the Month

8

# DRB 00120

5 HTP Enhanced  
120 Veggie capsules

Retail Price: \$61.90

5-HTP enhanced with Vitamins B6 and C provides a drug-free support for sleep, mood, anxiety and stress. 5-HTP aids serotonin production. Serotonin is the chemical neurotransmitter produced in the brain that helps regulate sleep, body temperature, sexual desire, mood and appetite. Vitamin B6 and Vitamin C are necessary for 5-HTP to be converted into serotonin. Gluten Free, Non-GMO, Vegan, Soy Free.

**INGREDIENTS:** 5-hydroxytryptophan (5-HTP) is a naturally occurring metabolite of the essential amino acid tryptophan. The 5-HTP in dietary supplements is derived from the seeds of the African plant *Griffonia simplicifolia*. **BENEFITS :** •Enhances sense of well-being •Promotes calming down and relaxing •Promotes satiety and supports healthy eating patterns and may promote weight loss as part of a weight loss plan •May improve quality of sleep •Potent scavenger of free radicals. **EXTENDED BENEFITS :** 5-HTP functions as the precursor for serotonin, a monoamine neurotransmitter found in the central nervous system (CNS) and some cells of the digestive tract. In the body, 5-HTP is formed by the addition of a hydroxyl group (-OH) to tryptophan, a reaction catalysed by the enzyme tryptophan hydroxylase. This enzyme can be hindered by stress and conditions such as vitamin B6 deficiency, which is one reason B6 is included in this formula. Additionally, pyridoxal phosphate (vitamin 136) is necessary for 5-HTP to be converted to serotonin. Vitamin C participates in the conversion of tryptophan to 5-HTP and of tyrosine to norepinephrine ne. another important neurotransmitter. Synthesis of serotonin in the brain requires an adequate supply of either tryptophan or 5-HTP as precursors in the CNS. The supply of tryptophan available for conversion to 5-HTP depends on a number of factors, including the nutritional status of the individual and the competition between tryptophan and other amino acids for transport across the blood-brain barrier. Whereas tryptophan may be side-tracked into the production of niacin or protein. 5-HTP readily crosses the blood-brain barrier and becomes available for serotonin synthesis. Therefore, supplementation with 5-HTP is a more direct route to serotonin production. In contrast to tryptophan, orally consumed 5-HTP is readily absorbed by the mucosal cells of the gastrointestinal tract, with up to 70% then appearing in the bloodstream. The implications of possibly altering serotonin in this manner are significant: serotonergic neurons (nerve cells stimulated by serotonin) regulate sleep, appetite, nociception (the perception of pain), and aggressive behaviour. **Enhances sense of well being:** A synaptic serotonin deficit is hypothesized to be capable of a major adverse effect on mood. Supplementation with 5-HTP therefore is believed to balance mood via an increase in serotonin synthesis. This was researched extensively upon discovery that 5-HTP could be used to alter serotonin levels in rats. In a pilot study on humans, the subjects receiving 5-HTP showed a 35% increase on a mood rating scale, whereas the placebo group showed a 6% decrease. A comprehensive review of seven open and seven controlled clinical studies found that oral consumption of 5-HTP improved mental and emotional status in 60 to 70% of subjects. The results varied from "modest" to "marked" Dosages ranged from 50 to 300 mg daily. In a study of 134 recently bereaved men mood was assessed using the Profile of Mood States (POMS) questionnaire. Men in this study who had adequate pyridoxine (vitamin 136) status had significantly better total mood disturbance (TMD) and confusion-bewilderment subscale scores. Additionally, pyridoxine deficiency was specifically related to a fatigued mood. **Promotes calming down and relaxing:** In a study of 32 healthy adults, half of the subjects were given 200 mg of 5-HTP. and the other half given placebo. All of the subjects were then given a stress-inducing substance (CCK-4) to provoke tension and elicit nervous irritability. In the female subjects who took the 5-HTP there was a significant reduction in the rate and intensity of the negative cognitive reaction. This research built on previous studies where administration of 5-HTP produced a calming effect in subjects prone to nervous irritability. **Promotes satiety & supports healthy eating patterns and may promote weight loss as part of a weight loss plan:** An exciting area of research recently regaining attention is the relationship between serotonin and appetite—and therefore its potential to aid in the maintenance of a healthy weight. While serotonin is renown for its function in the brain. 95% of serotonin is actually found in the gastrointestinal tract. Accordingly, serotonin is deeply involved in gut physiology, including visceral perception and weight maintenance. In research where 5-HTP was administered at higher doses, it was discovered that these high doses of 5-HTP produced weight loss in subjects, mainly through its influence on satiety and an altered appetite for specific macronutrients. A study that orally administered either 5-HTP or placebo to 19 women for 5 weeks (without any dietary restrictions) resulted in significantly decreased food intake and weight loss in the women taking 5-HTP compared to placebo. In a double-blind, randomised study 20 subjects received either 5-HTP capsules or placebo for 6 weeks with dietary restrictions, and then for 6 weeks without dietary restrictions. During both periods (with or without dietary restrictions), the 5-HTP subjects experienced early satiety & a reduction in carbohydrate intake, with significant weight loss compared to placebo. In a subsequent double-blind, randomised study 11 subjects received placebo and 9 subjects received 5-HTP capsules for 2 weeks. The 5-HTP group experienced weight loss through a significant decrease in carbohydrate and fat intake.



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