

HEALTHY TIMES

Making Sense of Science for Superior Health and Effective Weight Management

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What's Inside

In this issue, depression and related mood disorders are discussed, and three important steps to take are described in detail: 1) a program of nutritional excellence, including fish oil supplementation; 2) light therapy; and 3) negative ion therapy.

DrFuhrman.com now carries the *Therapeutic Light*, which is beneficial for various forms of depression, dysthymia, PMS, ADHD, fibromyalgia, insomnia, and other conditions. The *Therapeutic Ionizer* is a negative ion generator that augments full-spectrum light therapy and nutritional excellence for mood disorders.

Treating Depression Naturally

Ideally, drugs should be the last choice of treatment!

By Joel Fuhrman, M.D.

Recently, several antidepressant drug manufacturers have been forced to issue new warning labels about clinical worsening and increased suicidal risk in both children and adults who take these drugs. Current regulatory interest is focused on this worsening of symptoms when patients first start taking antidepressant medications, but these drugs have a litany of adverse effects, including aggressiveness, agitation, akathisia (psychomotor restlessness), anxiety, hostility, impulsivity, insomnia, irritability, mania, and panic attacks.

Approximately 1 million people commit suicide each year, worldwide. In the United States, the number of deaths from suicide over the past 20 years exceeds the number of deaths from AIDS. Since more than 90% of the people who commit suicide have mood disorders, suicide is a clear risk in patients with depression (whether treated with medication or not). It is difficult to discern from available research if the suicide rate is measurably higher during the early phase of drug use, but those with depression should be supervised closely.

Warnings on drug labels don't reduce the risks of drugs. Doctors identify the drug indicated for your condition and write a prescription for it. If you walk into a doctor's office with a medical problem, you essentially are paying for a doctor to

write a prescription. In today's medical/insurance environment, most doctors are nothing more than glorified pharmacists. The only option they can offer is prescription medication. When effective nonmedical options are discovered—no matter how heavily reported and documented in the scientific literature—these doctors ignore them. A good example of this is the case of treating rheumatoid arthritis with fasting (a period of time during which you abstain from all foods and ingest only pure water under the supervision of a trained physician) in conjunction with a natural, high-nutrient-dense vegetarian diet. In spite of more and more favorable studies appearing in the scientific literature, the vast majority of doctors won't even consider this approach. I guess the maxim, "You can't teach an old dog new tricks," applies to physicians, too.

With over a million prescriptions for antidepressants being filled each week and annual sales of 11 billion dollars at stake, it is unlikely that a new protocol for depressed people will emerge in America. Money usually dictates direction in the medical/drug/insurance industry. However, the conflict and controversy over the dangers of psychotropic medications used for depression, and the recent cardiac-related deaths from Ritalin prescribed for ADHD, are calling attention to the all-too-cozy

(See Treating Depression on p.2)

Treating Depression

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relationship between government agencies and the drug industry. The public no longer can trust the validity of drug-related information that comes from even such formerly respected sources as medical journals and universities. These institutions depend increasingly on pharmaceutical dollars (advertising and grant monies), and this has led to numerous instances of inaccurate reports that conceal evidence and promote drug use.

Research and clinical studies are no longer funded or conducted by independent medical centers. Today, funding and research is paid for and commissioned by the pharmacologic companies selling the drugs. The foxes are in charge of the hen house, and you really can't trust any research conclusions, even when our government

Treatment protocol for depression

- morning treatment with high lux lighting (*at dawn*)
- negative ion generation
- omega-3 fatty acids, including 1,000 mg of EPA daily
- a dietary program rich in phytochemicals from vegetables and berries
- regular exercise

approves. From the hawking of cholesterol-lowering drugs to the use of chemotherapeutic agents for cancer, drug trials are set up and interpreted by the drug industry to make the drugs look more safe and beneficial than they are.

Natural therapies surprisingly effective

Recent advances in non-pharmacologic treatments for depression can help people feel better—and even assist them in making total recovery—without dependence on medications. Researchers doing the studies in this field have been surprised to find that natural therapies can have very high success rates, rivaling those of drugs. Of particular interest is the fact that these non-pharmacologic treatments get results faster than drug treatments.

Now is the time for all people with depression to give these safe, natural treatments a try. By combining the most promising facets of these approaches, the likelihood of improvement and recovery is greatly enhanced. □

Lighting the Way to Wellness

Light therapy is no longer considered a therapy only for seasonal affective disorder (winter blues). It has been found to be effective for all types of depression, including major depressive disorder and bipolar depression. In 2005, a meta-analysis (combining results of multiple independent studies) of bright light therapy for depression found that “bright light treatments are efficacious, with effects equivalent to those

in most antidepressant pharmacotherapy trials.”¹ The evidence is so compelling that I believe that every primary care physician and psychiatrist should be well versed with the use of this treatment modality.

Bright light therapy for seasonal affective disorder (SAD) has been utilized and shown to be effective for more than 20 years. In recent years, this therapy has been shown to be effective for major depressive disorder

(MDD), premenstrual and postpartum depression, attention deficit disorder (ADD), bulimia nervosa, premenstrual syndrome (PMS), sleep disorders, insomnia, and more.

Studies done during the last five years that are of particular interest are the investigations into the most effective exposure schedule, duration, intensity, wavelength spectrum, and timing of the treatment. For example, years ago researchers used 2,500 lux lighting for 3 hours in the morning and evening. Although this was effective (and there certainly

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Address: Joel Fuhrman, M.D., P.C., 4 Walter E. Foran Boulevard, Suite 409, Flemington, NJ 08822

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can be multiple effective treatment schedules), recent studies reveal that increasing light intensity to 10,000 lux in 30-40 minute sessions gave higher remission rates.

Benefits of morning light

Morning light has been shown to be vastly superior to light exposure later in the day. In fact, light therapy given 7.5-9.5 hours after melatonin onset yielded twice the remission rate (80% versus 38%) of light given 9.5-11 hours after.² Melatonin onset usually occurs about 10:00 pm, but can vary. Therefore, to maximize the likelihood of a treatment response, the light treatment should be given as close to dawn as possible.

Sessions should begin within 10 minutes of scheduled wake-up times, and those using light therapy for depression should wake up relatively early to begin treatment first thing in the morning. Since light therapy is most effective when given between 6:00 and 7:00 in the morning, light treatment should begin before sunrise in the winter. Depressed patients who sleep later than this need to be woken up and have their bedtimes adjusted to synchronize with the “forced” morning waking. They need to readjust their circadian rhythms and, in many cases, shorten their sleep duration. Oversleeping must be discouraged. Sedating medications that lead to late morning waking are counterproductive to the effective potential of light therapy.

The timing of the therapy is important; evening light therapy can be counterproductive, and if scheduled too late, can result in insomnia and hyperactivation. If morning light is timed too early, one could develop premature waking. The effectiveness of this therapy is extremely dependent on strict compliance with the schedule, and morning treatments should not be skipped. Patients sometimes ignore the alarm or attempt to

test whether improvements can be obtained without strict adherence to the protocol, which can interfere with the high expected response rate. The behavioral investment in this mode of care exceeds that of simply popping a drug into your mouth once per day.

Hypersomnia patients (over-sleepers) who are unable to awaken when instructed can begin light therapy at the time of habitual waking, and then can be shifted gradually to an earlier time. The light therapy will usually help with the adjustment to an earlier waking and will lessen the need for so much sleep. There is evidence that oversleeping can produce brain biochemistry more susceptible to depression,³ so using the light to lessen over-sleeping can be helpful.

For those with recurrent mood disorder histories, proper exposure to light should be an important part of their health program. Once remission is obtained, light therapy should be continued until the climate and time of year enables replacement with natural light outdoors in sunshine. As the season warms, replace the light treatments with walking or working outdoors facing in the direction of the sun for 30 minutes each morning. During overcast and rainy periods of time, and before mid-fall and mid-spring, the light therapy should resume again.

Beneficial mechanisms of action

There are multiple mechanisms of action of enhanced lighting. First, there is a direct energizing component by light exposure, no matter what the time of day. Neurologically, this is called “autonomic activation,” where direct exposure to light serves as an immediate performance enhancer. Second, there is an indirect component that regulates the internal body clock, depending on the

time of day of the light exposure.

Without adequate light exposure, the human biological clock is at risk of slipping later and later into the 24-hour daily cycle, moving our bodies into a different time zone with a mismatch to our work and sleep schedules. This slippage results in daytime fatigue, difficulty in awakening, and mental “fogginess,” often accompanied by mood slumps, and a switch in appetite to “comfort” foods, as well as problems falling and staying asleep at night that are uncorrectable by sleeping pills.

Neurochemically, the drifting circadian cycle results in delayed nighttime production of the hormone melatonin by the pineal gland. Melatonin production is normally high throughout the night while we sleep, but delay of the circadian clock can result in an overshoot of melatonin production into daytime working hours, which can lead to depression.

Normal adults need about 6-8 hours of sleep each night. When some depressed individuals sleep excessively, it makes it harder for them to recover from their depression. Besides melatonin, there are other depression-triggering substances that become overproduced with too much sleep. Exposure to bright daylight and high levels of illumination mimicking the sun coming off the water on the beach suppresses the sleep hormone melatonin and other depressogenic substances, and also stabilizes the forward slippage of the body clock.

Increased light levels are thought to enhance the production and utilization of the body’s natural neurotransmitters—including serotonin, dopamine, and norepinephrine—substances that are identified with improved daytime alertness, better mood and stress relief, improved motor skills, and productivity. When our natural body clocks are destabi-

(See Lighting the Way on p. 4)

Lighting the Way

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lized by dim indoor lighting and lack of sunshine, restless sleep, insomnia, daytime sleepiness, irritability, and depression are more likely to occur.

Melatonin is manufactured from serotonin. When melatonin levels increase (from inadequate morning light exposure), serotonin levels decrease, since more serotonin is converted to melatonin. Exposure to light lowers melatonin levels and increases serotonin levels.

Whether you have a mood disorder or not, enhanced light exposure in the workplace and home is important for improved alertness, energy, and mood, and serves as a countermeasure to deficient indoor lighting conditions. Indoors, we live

and work continuously under what is usually only a twilight level of illumination, even though the lighting seems visually adequate. Out-of-doors, diminished seasonal light availability, due both to winter's delayed sunrise and early sunset as well as increased inclement weather, has a pervasive depressing influence for at least half the population.

Light therapy for insomnia

Often, shortening the hours lying in bed trying to sleep can help with insomnia. Are you lying in bed at night unable to fall asleep or stay asleep? Most people who experience insomnia turn to drugs. More and more drugs seem to be the rec-

ommended answer to everything today. But a much safer approach than becoming dependent on drugs is light therapy, accompanied by weight training. The combination of early morning light and exercise helps normalize melatonin and growth hormone secretion. By itself, exercise should not be expected to have a major therapeutic effect to defeat depression or insomnia, but in conjunction with other positive interventions, it can be an important part of the entire healing process.

If you have trouble falling asleep at night or wake in the middle of the night and lie there for hours without sleeping, try to consolidate your

(See *Lighting the Way* on p.6)

Nutrition and Mood Disorders

Adequate nutrition is needed for countless aspects of brain functioning. Poor diet quality, ubiquitous in the United States, may be a modifiable risk factor for depression. The ability of the brain to adapt and respond to stress is correlated with nutritional status. High antioxidant intake prevents oxidation tissue stress in the brain. Scientific studies have documented that when lipid peroxidation in a person is high, depression is much more likely.¹

Lipid peroxidation is a chemical reaction that occurs as fats become rancid. As free radicals build up in the lipid cell membranes, the local environment becomes disease-prone. Byproducts of peroxidation build up in our tissues, and researchers can measure these in our blood or urine. Lipoperoxidation byproducts such as malondialdehyde, 4-hydroxynonenal and F2-isoprostane are typical examples. Without adequate micronutrient intake in

our diet, our internal environment becomes "toxic or rancid," and this is measurable as a marker of malnutrition and ill health. Studies have linked these by-products to depression, heart disease, asthma, Alzheimer's, and more.

It is clear that people are more prone to depression and other diseases when their intake of high-nutrient-containing plant food is low. It also has been shown that the response to medication and other therapeutic intervention can be suboptimal when antioxidant nutritional status is inadequate.² Whenever we measure low levels of vegetable-derived nutrients, we find depression more prevalent. For example, low folate intake and low folate blood levels have been shown to correlate with depression.³ Low folate in the bloodstream is a marker for low fruit and vegetable intake. Deficiencies of folate, vitamin B12, iron, zinc, and selenium tend to be more com-

mon among depressed than non-depressed persons.⁴

Childbearing-aged women are particularly vulnerable to the adverse effects of poor nutrition on mood because pregnancy and lactation are major nutritional stressors to the body. The depletion of nutrient reserves throughout pregnancy and postpartum may increase a woman's risk of depression soon after childbirth. □

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Decadent Desserts

Healthful mouthwatering delicacies lovingly designed to elevate your mood!

By Chef Robin Jeep

Okay, I admit it. No one—not even a gourmet natural chef like me—makes desserts like these every day. But when you are in the mood for a fancy dessert, or when you are bringing a special dish to a party, these scrumptious desserts are proof that you don't have to sacrifice exquisite taste and pleasure to eat healthfully. Try one of these delights, and live it up!

Decadent Healthy Chocolate Cake with Chocolate/Macadamia/Hazelnut Icing

Cake:

- 1 2/3 cups whole wheat flour
- 3 tsp. baking soda
- 1 tsp. baking powder
- 1 cup beets, shredded
- 3/4 cup carrots, shredded
- 1/2 cup zucchini, shredded
- 1-1/2 cups water
- 3 cups pitted dates
- 1 cup pineapple chunks
- 1 whole banana
- 1 cup chopped walnuts
- 1/2 cup currants
- 1/2 cup pitted dates, cut into 1/2" thick sections
- 1 cup unsweetened applesauce
- 2 tsp. vanilla extract
- 3 Tbsp. natural cocoa powder

Chocolate/Macadamia/Hazelnut Icing

- 1 cup raw macadamia nuts
- 1/3 cup hazelnuts
- 1 tsp. vanilla extract
- 2 Tbsp. natural cocoa powder
- 2/3 cup pitted dates

RECIPES

Decadent Healthy Chocolate Cake with Chocolate/Macadamia/Hazelnut Icing Pomegranate Poached Pears with Chocolate & Raspberry Sauces

1 cup soy milk

Preheat oven to 350 degrees. Mix flour, baking powder, and baking soda in a bowl.

In blender, blend 3 cups of dates, pineapple, banana, and applesauce together.

In a large bowl, mix beets, carrots, zucchini, blended mixture, cocoa powder, currants, sliced dates, walnuts, and water. Add the flour mixture. Mix well and spread in a nonstick baking pan. Bake for about 1 hour or until a toothpick inserted into the center comes out clean.

Icing

In powerful blender or food processor, blend all ingredients until smooth and creamy. Place a dollop over warm cake and serve.

(Serves 12)

Pomegranate Poached Pears with Chocolate & Raspberry Sauces

Poached pears:

- 6 medium pears, ripe (still firm)
- 2 cups pomegranate juice (or red wine)
- 1 whole cinnamon stick
- 6 whole cloves
- 2 Tbsp. Goji berries (optional)

Chocolate sauce:

- 1 cup frozen blueberries
- 1 Tbsp. Goji berries or 1 tsp. turmeric (to adjust color)
- 1 generous Tbsp. cocoa powder (or more for a darker, stronger sauce; use natural cocoa powder, not Dutch processed)
- 1-1/2 cups soy milk
- 1/2 tsp. vanilla extract
- 1 cup pitted dates
- 2/3 cup raw macadamia nuts, unsalted (or wash salt off)

Raspberry sauce:

- 10 oz. frozen raspberries (about 1-1/2 cups)
- 1 Tbsp. maple syrup (optional)

Poached pears:

Peel pears, leaving stems intact. Slice a little off the bottom of each pear so that they stand up. In a large saucepan, place pears standing up snugly together. Pour in pomegranate juice or wine and add cinnamon, cloves, and Goji berries. Gently simmer, covered, for about 20 minutes, until pears are tender. Remove pears and refrigerate until ready to serve. Reduce poaching liquid until it becomes syrup.

Chocolate sauce:

Place all chocolate sauce ingredients in blender. Blend until very smooth and creamy. Add more soy milk, if needed.

Raspberry sauce:

Defrost raspberries and blend until smooth. Push through sieve to remove seeds. Add poaching syrup and sweeten if necessary with maple syrup.

Place a generous dollop of chocolate on dessert plate. Place pear on chocolate and drizzle Raspberry Sauce over pear. *(Serves 6)*

Enjoy in moderation!

Lighting the Way

Continued from page 4

sleep, so that you sleep better, get quality sleep, and spend less time in bed. For example, go to bed a little later and wake up at sunrise. Use high intensity light or, if you live in a warm sunny climate, get outdoors in the sun early in the morning before breakfast. Get your internal sleep clock adjusted to the natural light cycle. Don't sleep later than 7:00 am in the morning, and get outside into the sunshine. If you have trouble falling asleep (even if you do not fall asleep until 3 in the morning), consistently wake yourself at dawn with either natural light or with a high-intensity electric light.

After 3 to 5 days, you should find that you are able to fall asleep without lying in bed half the night. Develop a schedule that works for you. Here is a suggestion to start with. Start out going to bed at 1:00 am and waking yourself at 7:00 am. Don't attempt to go to sleep until 1:00 am, but get up with an alarm clock at 7:00 am, no matter what time you actually were able to get to sleep. Don't nap. Wait until 1:00 am again before going to bed. It is better to sleep soundly for five or six hours than to lie in bed all night unable to sleep. If you can't fall asleep for a long time at 1:00 am, the next night put yourself to bed at 1:30 or 2:00 am. Wake up on time with the light. Eventually, the combination of the morning light and shorter time in bed should help you get rid of your insomnia without drugs. If you find you are becoming too tired with only five to six hours of sleep, start going to bed a little earlier, shifting bedtime gradually back by 15-30 minutes until you have customized the regimen to your needs. Eventually, you will find the proper bedtime to match your dawn wake-up time.

Proper lighting

Recent studies testing the wavelength and spectrum of light found that the design of the bulb lamp and

Therapeutic Light

Dr. Fuhrman's Therapeutic Light has these beneficial features:

- 10,000 lux setting for therapy
- a second lower (2500 lux) intensity adjustment for general use
- flicker-free light source diffused with OP-3 UV filtration
- broad field of vision to minimize glare—the greater the size, the less glare
- gently curved polyethylene diffusion to assure proper angle entering eyes
- 6500 Kelvin CIE daylight standard—averaged daylight spectrum of "open sky"

These features assure reduction in glare, do not cause headaches from flickering, and make the high intensity of light enter the eye better from off angles and from a broader array of distances from the source.

screen are important for safe and effective therapy. Lamps are sold that provide excessive visual glare and naked bulbs that may harm the eyes. Intense illumination below the eye level, or augmented UV radiation, also should be avoided.

Broad spectrum, white illumination has been shown to be the safest and most effective. In comparison, ocular exposure to high infrared illumination, which comprises 90% of the output from typical incandescent lamps, poses a risk to the eye. These types of incandescent lamps, in spite of being marketed for bright light therapy, should be avoided.

We researched to find the best features and cost and then purchased a light that was designed to meet the specifications of the researchers at Mt. Sinai Hospital. Now available in our office and from DrFuhrman.com, the **Therapeutic Light** incorporates the features that have been demonstrated in the medical literature to be critical-

ly important for the effectiveness of light therapy for depression, ADHD, PMS, fibromyalgia, and sleep disturbances. It is the finest clinical light system available at a reasonable price (\$159.99). This light has been used in research trials and contains all of the critical features recommended in therapeutic light in the recent Mt Sinai Hospital study.

Of note is that a downward tilting fluorescent protected by a smooth diffusion screen curved at the proper angle and set at the right height above a desk surface is important. Research has to be integrated into the design of the light, which is important, especially if it is going to be used for therapeutic purposes.

I recommend positioning the light 12 to 18 inches in front of you on the desk. The center of the light will be above the level of your eyes, and you can read or work beneath it while the light enters your eyes indirectly from above. This distance and height will minimize eye strain, but if any nausea or headaches or other symptoms develop, sit further back from the light and inch in a little closer with time.

There have been some reports of hypomania occurring early in treatment in bipolar patients (cycling manic-depressives). In these cases, light therapy has been shown to be better used later in the day. Therapy also can be started at a further distance and then brought in to the therapeutic range gradually.

Photosensitizing medications are also contraindicated with light therapy. The photosensitizing drugs of most concern include, but are not limited to: imipramine, phenothiazine, lithium, chloroquine, hydrochlorothiazide, porphyrins, psoralens, and tetracycline. Melatonin and hypericum supplements are also contra-indicated. Care should be taken when on medication, and the light therapy should be used only with consultation with a

physician because lessening of drug dosages may be important to preventing overtreatment and increasing the medication's side effects. Patients with eye diseases, especially retinopathy, should not use this therapy.

Negative ion generation enhances protocol

One way to treat depression is to move to the Caribbean and walk on the beach in the early morning sun, soaking in the light and the negative ions coming off the water. However, most of us can't live on a warm beach most of the year.

Negative air ionization is a new modality for depression. Our senses are not able to detect the presence of these negative ions in the air, but they do something beneficial to the brain. Negative ions are high in the natural forest and at the seashore, and they are low in urban environments and heated and air-conditioned interiors.

As an example, in healthful outdoor environments such as mountains and country meadows, the negative ion concentration is typically 2000 to 4000 negative ions per cubic centimeter. In extremely healthful and invigorating environments, such as near a large waterfall, the negative ion level is around 1,000,000 per cubic cm. By contrast, the negative ion concentration in an indoor work environment is between 100 and 200 negative ions per cubic cm.

The antidepressant effect of a high concentration of negative air ions has been demonstrated in patients with chronic depression in a few different studies. The most recent study used a strong ion generator exposing participants with major depression to a high flow rate of negative air ions for one hour each day, and it demonstrated a 50% rate of remission for depressed patients.⁴ There are lots of electric

air purifiers that generate negative ions, but they usually do not generate the high levels of negative ions needed therapeutically for mood disorders. We have researched the best options for efficacy and cost for our patients and we have what we feel is the best choice available at drfuhrman.com.

The goal is to combine light therapy, nutritional therapy, and ion therapy to achieve high rates of remission that should exceed the response rate to medication, without the side effects. Mimicking a more natural light and ion exposure that would be found in a warm sunny beach climate can help with migraines, attention difficulties, restless legs, fatigue, and anxiety.

Of course, not all emotional and mental problems are biochemically induced. For example, dysfunctional childhoods and genetic factors each can play a role. Counseling, personal growth, change in life situations, and insight are complementary adjuncts to therapies to improve brain chemistry. Nevertheless, there is a clear biochemical predisposition to depression in our northern, limited sunlight, polluted environment where minor stresses in life are able to grow into major depressive disorders. □

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Fish oils

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of sufficient quality to meet inclusion criteria. The evidence suggests these substances were better than placebo at alleviating depression; however, the evidence was of insufficient quality to be conclusive.⁸ The bottom line is that very few studies of quality exist, but it is likely to have mild beneficial effects.

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Fish Oils and Mood Disorder Prevention

Omega-3 fatty acids shown to be important for mental health

By Joel Fuhrman, M.D.

In addition to adequate micronutrient intake, fatty acid balance also plays a critical role in mental health. Low fish consumption has been found in multiple studies to be a statistically significant finding in those with depression. For example, this study showed that rates of depression increased more than twofold in women who were rare fish consumers compared with regular fish eaters.¹ Research scientists consistently found a reduced level of omega-3 fatty acids in patients with mood disorders and mental illness. There is overwhelming evidence that omega-3 fatty acids are important to mental health.

The two main omega-3 fatty acids in fish oil, EPA (eicosapentaenoic acid) and DHA (docosahexaenoic acid), have important biological functions in the brain. DHA is a major structural component of neuronal membranes, and changing the fatty acid composition of neuronal membranes leads to functional changes in the activity of receptors and other proteins embedded in the membrane phospholipid. EPA has important physiological functions that can affect neuronal activity. Clinical trials have suggested benefits from DHA and EPA treatments in borderline personality disorder, bipolar or manic-depressives, schizophrenia, and attention deficit hyperactivity disorder.

Our bodies have the ability to make these important fats from the short chain omega-3 fats found in leafy greens, walnuts, flax, and hemp, but some people do not fabricate sufficient DHA from the short-

er length precursors as well as other people do, predisposing them to neurological problems. These individuals have a greater need to supplement their diets, especially since fish today is so polluted, and farm-raised fish is no longer a dependable source of DHA and EPA. Using a DHA supplement or a purified fish oil is cleaner and more dependable.

Documented benefits

The following interesting observations are found in the scientific literature:

1. Both lower DHA content in mothers' milk and lower seafood consumption were associated with higher rates of postpartum depression.²
2. Depressed patients have lower levels of DHA in their fatty tissues compared to normals.³
3. Multiple studies indicate that in depression and schizophrenia, one gram a day of the EPA component is more effective than DHA, and a higher dose does not add additional efficacy.⁴

Depression is related to low levels of these long chain omega-3 fats in the brain, and it is apparent that supplementation with DHA and EPA have beneficial results in patients with mood disorders. Since studies have shown that EPA is even more effective than DHA for alleviating depression in the short run, and DHA is more important for structural normalcy to maintain long-lasting results, I recommend real fish oil containing both EPA and DHA for those with depression and related mood disorders. About two grams

of fish oil usually contains about one gram of active ingredient (EPA + DHA) appropriate for those with mild mood disorders. With major depression, use about 3 grams to achieve the one gram of EPA that has documented clinical efficacy for depression. Look for an oil that gives the most active ingredients (EPA + DHA) per gram of oil. At my office, we have highly purified and concentrated fish oil in stock.

Other natural remedies for depression have only minor value.

DHEA—DHEA is a hormone in the steroid family produced by the adrenal glands. It has been shown in scientific protocols to have value in aiding mildly depressed elderly patients, since a fall in DHEA later in life may contribute to the development of depression.⁵ It is not without side effects or risks.

St. John's Wort—Some studies show slight benefit; others show none.⁶ I do not recommend St. John's Wort for major depression.

SAME—SAME is a methyl donor involved in the synthesis of various neurotransmitters in the brain. A small number of clinical trials have shown that, at doses of 200-1600 mg/d, SAME is superior to placebo in alleviating depression.⁷ Most individuals require dosages of 600-1200 per day. I do not recommend it often as it is expensive and only mildly effective.

Tryptophan—A comprehensive metanalysis of all studies on 5-hydroxytryptophan (5-HTP) and tryptophan showed 108 trials, but of all these studies, only two trials, involving a total of 64 patients, were

(See *Fish Oils* on p.5.)