



NATURE'S OWN ENERGY

All About Coenzyme 1 ~ CO-E1®

What You Need to Know about This Revolutionary Supplement

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COENZYME 1

PART I: THE COENZYME 1 MIRACLE

If you could take a natural substance that occurs in every single cell to increase your overall energy, would you?

If you could take a natural substance that boosts the immune system and protects your cells from damage, would you?

If you could take a natural substance that enhances your cognitive capability and improve your memory, would you?

Good news: you can. There is a natural biological substance that offers these benefits and many more. That substance is CoEnzyme, also known as NADH for nicotinamide adenine dinucleotide with high-energy hydrogen. A growing body of scientific research and physicians' experience shows that it has a profoundly important effect to keep you healthy and energetic. Let's get into more detail below.

So what exactly is Coenzyme 1? It is a naturally-occurring and vital compound found in all living cells of plants, animals, and humans. It is essential for adequate energy, and supplementation can improve energy levels. The human body carries on many important functions or activities at the same time. All of these activities require cellular energy production. The memory, immune system, and even the DNA repair system are dependent on the proper production of cellular energy. But wait, the benefits of Coenzyme 1 don't end there. **Coenzyme 1 has also been proven to increase energy, as well as act as an anti-aging nutrient, enhances memory, is the body's top antioxidant, and can help with specific diseases such as Parkinson's, chronic fatigue syndrome (CFS), depression, and Alzheimer's disease.** For detailed explanations of how Coenzyme 1 works with your body in all these ways, check out Part III of this book.

Enada Nutraceutical's CO-E1® is the only brand of Coenzyme 1 currently available that is stabilized and is actually protected by several worldwide patents. Competitors continue to try to bypass these patents and introduce Coenzyme 1 products. However, all these products are non-stabilized forms of Coenzyme 1. When subjected to independent laboratory analysis and validation, the majority of these products do not contain any Coenzyme 1. The result of the absence of Coenzyme 1 in these products hurts consumers and leaves the impression that Coenzyme 1 is ineffective. Remember, if a Coenzyme 1 product isn't stabilized, you're wasting your money.

Enada Nutraceutical's CO-E1® has two main types of supplements available. The first is CO-E1® Vitality and Vitality Plus. These were the first tablets we introduced, and are most effective when taken on an empty stomach. That is, first thing in the morning, or at least an hour before eating and/or two hours after eating. This is because of their coating, allowing it to move smoothly into the intestine where it is absorbed. These supplements come in 5mg doses. This is the supplement

for users who like to take Coenzyme 1 once daily more so for their health ailments, such as Alzheimer's disease or chronic fatigue syndrome, than for energy boosts.

For those customers who desire immediate effects, we have sublingual lozenges. CO-E1® PERFORMANCE and MOJO are fast-acting and designed for demanding and active lifestyles. It has been carefully crafted without the enteric coating of the other CO-E1® tablet, thus can be taken at any time, regardless of when you last ate. Also CO-E1® comes in PERFORMANCE 10mg and MOJO 20mg dosages, so you can tackle that last mile or extra work hours with energy and integrity.

So now you're probably wondering which supplement is right for you. Well, it depends on what results you are looking for. If you have an active, busy lifestyle and require more energy in less time, then the PERFORMANCE tablets are most likely best for you. The 10mg tablets are for people who desire quick energy, but aren't doing anything extreme, such as intense physical exertion. These are best for the everyday person with everyday tasks at hand. The 20mg MOJO tablets are for those that exert a lot of physical effort or are in need of constant energy throughout the day. This may be a triathlete before and during his or her race, or an executive with days constantly full of meetings and negotiations. Simply put, the 20mg is just a more intense than the 10mg, so based on the amount of energy you need, you can decide which supplement is right for you.

If you are taking Enada Nutraceutical's CO-E1® supplements for health purposes, the 5mg VITALITY or VITALITY PLUS tablets are for you. These ones are taken daily, in the morning, and have a slower effect as they are dissolved in the lower intestine. The dosage is perfect to fight off ailments from such diseases as Parkinson's disease, chronic fatigue syndrome, depression, and Alzheimer's.

PART II: THE COENZYME 1 FACTS

So what exactly is Coenzyme 1? It is a naturally-occurring and vital compound found in all living cells of plants, animals, and humans. It is the body's top-ranked coenzyme, a facilitator of numerous biological reactions. Coenzyme 1 is necessary for cellular development and energy production: It is essential to produce energy from food and is the principal carrier of electrons in the energy-producing process in the cells. Coenzyme 1 is also an important antioxidant; in fact, scientists acknowledge that Coenzyme 1 is the most powerful antioxidant to protect cells from damage by harmful substances. In summary, Coenzyme 1 is a highly powerful form of vitamin B₃ commonly referred to as niacin or niacinamide.

It was discovered in 1905 and was found to be an essential co-factor or co-partner for all enzymes in the body. Since its discovery, more than one thousand different physiological functions of Coenzyme 1 have been detected and extensively described in all biochemistry textbooks. However, Coenzyme 1 was viewed as so unstable—it could react to even small amounts of exposure to heat, light, or humidity—that it could not be used therapeutically. This was the reason that Coenzyme 1 has not been widely discussed before.

Fortunately, in the mid-1980s, researchers used modern-day technology to develop a stable, ingestible, and absorbable oral form of Coenzyme 1 that can improve the level of Coenzyme 1 in the billions of cells that make up the human body. A safe and effective form of Coenzyme 1 can now be used therapeutically.

Coenzyme 1 is present in all living cells of humans, animals, and plants. Hence, it is present in our daily food sources. However, animal protein sources—meat, poultry, and fish—contain the highest amount of Coenzyme 1. Vegetables, fruits, and other vegetarian food have a much lower Coenzyme 1 content. Plants need less energy to survive and no energy for locomotion or movement, so they have less Coenzyme 1. Vegetarians, therefore, receive little Coenzyme 1 from their diets and should consider supplementing with Coenzyme 1.

Many other people also can benefit from taking Coenzyme 1 supplements, though, for a few key reasons. First, almost all of the Coenzyme 1 we take in from food is destroyed during food preparation. Second, even if our diets consisted mostly of raw meat or fish (which isn't advisable), we would only receive a minimum of Coenzyme 1 from these food sources. Most of the Coenzyme 1 in these foods would be degraded by the stomach's own digestive gastric acids that break down food into its constituent parts for absorption.

Besides what was previously mentioned, Coenzyme 1 provides several other health benefits. First, it protects the liver from alcohol damage. Coenzyme 1 is actually the cofactor (activator) of the enzyme that degrades alcohol (alcohol dehydrogenase). This means that the more Coenzyme 1 you have in your liver, the faster alcohol is eliminated. Additionally, Coenzyme 1 may improve the efficiency of liver enzyme functions, resulting in faster oxidation, shortened exposure, and reduced overall liver damage.

Coenzyme 1 also prevents the alcohol-induced inhibition of the sex hormone testosterone. Under the influence of alcohol, the production of the sex hormone testosterone is blocked. In other words, the more alcohol you consume, the lower your sex drive becomes. In the presence of Coenzyme 1, this alcohol-induced inhibition of testosterone production is diminished or absent.

Coenzyme 1 lowers cholesterol levels and blood pressure. In a double-blind animal trial utilizing spontaneously hypertensive rats, Coenzyme 1 lowered cholesterol levels within eight weeks and reduced blood pressure within eleven weeks. These preliminary animal studies suggest that Coenzyme 1 has potential for lowering blood pressure and cholesterol levels in humans.

Coenzyme 1 inhibits dopamine auto-oxidation. The neurotransmitter dopamine is spontaneously oxidized in our bodies, in particular in the brain; this is called auto-oxidation. This process is found to be significantly higher in older individuals. Since Coenzyme 1 can inhibit the auto-oxidation of dopamine, it represents a useful tool in reducing or preventing damage to certain areas of the brain. Therefore, Coenzyme 1 may help slow cell death and tissue degeneration as we age.

Below is a Question and Answer section to help you find the answers to the specific questions regarding Coenzyme 1 that you're looking for.

Q. Are there any side effects from Coenzyme 1?

A. Since the introduction of Coenzyme 1 in the early 1990s, the safety of Coenzyme 1 continues to be supported by several types of clinical data. First, the FDA approved two human clinical trials and any side effects found in these trials were required to be fully documented. The results of these trials were that not a single side effect was reported. In addition, more than three thousand patients have received stabilized Coenzyme 1 for treatment of therapeutic conditions since the late 1980s. No side effects have been observed in these patients. It's also important to know that hundreds of thousands of consumers have taken Coenzyme 1 since it was made available in health food stores and pharmacies in the United States more than twenty years ago, and consumers have reported no significant side effects.

Q. Can I take Coenzyme 1 with medication?

A. Yes, you can take Coenzyme 1 with medication, including the most common antihypertensive, antidepressant, and antihistaminic drugs. In one of the FDA-approved clinical trials, many patients were on antihypertensive and/or anti-depressive and/or antihistaminic drugs. No interference was observed with these medications. However, be sure to check with your health care professional for his or her advice.

Q. When is the best time to take Coenzyme 1?

A. The best time to take Coenzyme 1 is first thing in the morning on an empty stomach, 30 minutes before any food, drugs, or other supplements, with a glass of water. The Coenzyme 1 tablets are enteric coated and are designed to bypass the stomach and "float" with water into the intestine where absorption takes place. If you need additional energy for the late afternoon or evening, you can also take an additional Coenzyme 1 tablet either thirty minutes before lunch or about two hours after lunch, and again, at least thirty minutes before a late afternoon snack or an early dinner. It is important that Coenzyme 1 is taken on an empty stomach so it can easily "flush" or move into the intestines where it is absorbed.

However, the Enada Nutraceutical's CO-E1® PERFORMANCE and MOJO tablets can be taken any time, regardless of when you last ate.

Q. How soon should I expect to see results with Coenzyme 1?

A. The answer to this question varies according to the individual. Each of us has a very unique biochemistry: Our bodies absorb food and nutrients differently, and our metabolisms often differ in other dramatic ways.

On average, optimal effectiveness is shown in four weeks of continuous usage. However, many healthy individuals report an improvement in energy levels within five to ten days. Coenzyme 1 must enter the billions of cell structures for energy production to begin, so first-time users may need to be patient before seeing beneficial results.

Q. How long can I take Coenzyme 1?

A. For normal healthy people who are taking Coenzyme 1 for increased daily energy and mental clarity, optimal effectiveness is achieved within one month of continuous usage. One month, therefore, is the minimum time period to take the product. After one month of continuous usage, normal healthy individuals who supplement with Coenzyme 1 for energy can try using it on an every-other-day basis. However, it is best to take Coenzyme 1 daily.

Research suggests that Coenzyme 1 can be taken safely for long periods of time. Many people have been taking Coenzyme 1 for several years with no side effects reported. The body is in a continuous state of refueling itself with cellular energy and Coenzyme 1 is a very efficient cellular energizer. So, the more Coenzyme 1 the body has available, the more the body will use to produce more energy. If you are taking Coenzyme 1 therapeutically, continuous daily usage is recommended. However, it is always best to check with your healthcare provider to help monitor long-term usage of any supplement.

PART III: THE COENZYME 1 SCIENCE

In just a few years, numerous studies and clinical trials have been conducted on Coenzyme 1 with impressive results. These studies, published in medical journals, have shown Coenzyme 1's effectiveness or potential in treating a number of hard-to-treat conditions, including Parkinson's disease, chronic fatigue syndrome (CFS), Alzheimer's disease, and depression. In this section we'll really delve into the science behind Coenzyme 1, and see what's going on in your body that this top-ranked coenzyme is so positively affecting.

Q. What is a coenzyme?

A. A coenzyme is a substance that enhances or is necessary for the action of all enzymes in the body. Coenzymes are generally much smaller molecules than enzymes themselves. Enzymes are large biological molecules that catalyze biological processes and create products in our bodies that we need for basic survival. Without a coenzyme, the majority of enzymes in the body are useless. Enzymes can be compared to production machinery in a factory that transposes one material into another one. In living cells, enzymes catalyze the breakdown and turnover of food components into smaller units, converting food into energy and water. Enzymes can perform their work only if an additional essential factor combines with the molecule itself. This factor is called a coenzyme. Without a complementary coenzyme, enzymes will not work and, therefore, they cannot produce complete protein systems for the human body. Hence, a coenzyme is essential for an enzyme to become active. Unlike DHEA and melatonin, Coenzyme 1 is not a hormone.

Q. Why is Coenzyme 1 important?

A. Coenzyme 1 is biologically ranked and identified as coenzyme 1, the coenzyme or cofactor needed for numerous enzymes that are involved in the cellular energy production. A deficiency of Coenzyme 1 will result in an energy deficit at the cellular level, which causes symptoms of fatigue. When the body is deficient in Coenzyme 1, it is kind of like a car that has run out of gasoline. The more Coenzyme 1 a cell has available, the more energy it can produce. Unfortunately, the production of Coenzyme 1 in our bodies declines as we age, and so does the production of Coenzyme 1-dependent enzymes, particularly those enzymes involved in energy production.

Q. How does my energy depend on Coenzyme 1?

A. The billions of cells that form tissue and organs and ultimately the human body have an important assignment: to produce energy. If our cells slow down or decline in their energy production, the most visible result is that we are tired and can increasingly experience greater overall fatigue. Coenzyme 1 is part of every living cell. Inside each cell a process known as the Krebs cycle combines Coenzyme 1 with Hydrogen to form ATP, your body's own energy.

Q. How does the body produce energy?

A. Bringing hydrogen and oxygen together is one of the most efficient ways to produce energy. A rocket launched into outer space is an example of energy production. All cells in our bodies use the same

principle of energy production, but they do so in a sophisticated way to conserve the energy produced. Coenzyme 1 is the biological form of hydrogen that reacts with the oxygen we breathe in to form energy and water. The energy-producing process in cells is achieved by a cascade of reactions, which lead to the formation of adenosine triphosphate (ATP), the energy-containing compound in cells. One molecule of Coenzyme 1 will form three times the amount of ATP. Therefore, Coenzyme 1 is an extremely efficient and effective energy producer.

Q. How does the body store energy?

A. Living cells have the capability to store energy in the form of chemical compounds. When these compounds are metabolized, energy is released and used for all cellular processes. Only a few biological substances display all the features of energy-rich compounds. The most important of these are adenosine triphosphate (ATP), creatine phosphate (CP), nicotinamide adenine dinucleotide hydride (NADH or Coenzyme 1), and nicotinamide adenine dinucleotide phosphate hydride (NADPH).

Q. Is ATP the most common “energy-rich” compound in our bodies?

A. Yes, ATP serves as the most common and convenient chemical form of energy stored in every cell. It's kind of like a biological battery that stores and releases energy when the body needs it. When cellular energy is required, ATP is broken down under the action of water to release energy for other processes. As already mentioned, Coenzyme 1 is a very efficient producer of ATP.

Q. Is Coenzyme 1 also an “energy-rich” compound?

A. Yes, energy is stored in the Coenzyme 1 molecule. When Coenzyme 1 reacts with the oxygen present in every cell, energy is produced in the form of ATP. One Coenzyme 1 molecule leads to the formation of three ATP molecules. In other words, Coenzyme 1 has triple the energy capacity of ATP. Furthermore, Coenzyme 1 creates additional energy when it reacts with oxygen and water forming nicotinamide (also known as vitamin B₃) and ADP (adenosine diphosphate). This all means that Coenzyme 1 is a super energizer.

Q. What is the Krebs cycle within our cells, and how is it related to Coenzyme 1 and hunger?

A. The Krebs cycle is also known as the tricarboxylic acid (TCA) cycle and as the citric acid cycle. Hans Krebs worked out the details of the cycle in the 1930s. The cycle takes place in the mitochondria of the cell and consists of several highly technical steps involving the conversion of proteins, carbohydrates, and lipids as well as their metabolites—amino acids, sugars, and fatty acids. There is no energy produced in the cycle—only Coenzyme 1, which then triggers energy production in the form of ATP. Actually, each "turn" of the cycle produces three molecules of Coenzyme 1. If the body needs more and more energy (ATP), then the cycle begins to speed up to produce more Coenzyme 1. As this process continues, the body begins to signal us through hunger so we can ingest more food for conversion. However, if we ingest too much food (calories), the body tends to store the calories as fat. In summary, the Krebs cycle within our cells is necessary to produce Coenzyme 1, and Coenzyme 1 efficiently produces ATP energy. Whether Coenzyme 1 is produced internally within the cell or Coenzyme 1 enters the body from a dietary supplement, it will trigger cellular energy production. Therefore, with the proper dietary supplementation with Coenzyme 1, the cells in the body can

directly produce ATP energy without the constant activation of the Krebs cycle, which eventually signals hunger to the body.

PART IV: HOW COENZYME 1 CAN HELP YOU

Q. How does Coenzyme 1 help my body?

A. Coenzyme 1 has energy stored in its chemical structure. When it is absorbed and taken up by the body cells, Coenzyme 1 produces energy. Coenzyme 1 can be compared to a turbine in an electric power plant. Water at a higher level has more energy than water at a lower level. If you insert a turbine (wheel) in this waterfall, you can produce electrical energy. Hence, the more Coenzyme 1 a cell has available, the more energy can be produced. The amount of Coenzyme 1 a cell contains depends on the amount of energy the cell requires. Heart muscle cells have the highest Coenzyme 1 content because the heart is the organ that needs the most energy in the body. Cells in the brain and muscles contain 60 percent of the Coenzyme 1 content of those in the heart

Q. Does Coenzyme 1 enhance the immune system?

A. Yes, it does. Coenzyme 1 is directly involved in the cellular immune defense system. Special white blood cells, called macrophages, are responsible for direct elimination of foreign bodies such as bacteria, viruses, and molds. They literally capture these foreign bodies and then degrade and eliminate them. During this process, a markedly increased metabolic activity including oxygen consumption takes place. Most of the oxygen is converted to superoxide and hydrogen peroxide, which are able to destroy viruses or bacteria. This phenomenon is known as "metabolic burst" and appears to be the first and most critical step leading to the destruction of the foreign invader. Large amounts of Coenzyme 1 are required for this process. Hence, the more Coenzyme 1 your body has available, the more protection your immune system can provide.

Q. Is Coenzyme 1 an antioxidant?

A. Yes, Coenzyme 1 actually is the body's most powerful antioxidant, and it can regenerate other important antioxidants to protect the body from damaging free-radical attack. Coenzyme 1 transfers the H (hydrogen) to oxidized (or damaged) glutathione to restore normal glutathione, one of the most important antioxidants produced in the body.

A similar situation exists for Coenzyme 1 and vitamin-like coenzyme Q₁₀ (CoQ₁₀)-When CoQ₁₀ is taken as a nutritional supplement, it is actually in an oxidized form and is therefore not an antioxidant. In the body, CoQ₁₀ must be modified by Coenzyme 1 to become an effective antioxidant and also an energy-producing compound. Without the reductive (or transforming) ability of Coenzyme 1, CoQ₁₀ is useless to the body.

This ability of Coenzyme 1 to restore many other compounds into active, effective antioxidants is continuously being repeated in the body. For example, Coenzyme 1 restores used-up glutathione to its effective antioxidant form. This type of glutathione in turn can restore vitamin C back to its active state. Vitamin C in turn can regenerate used-up vitamin E back to active vitamin E. It is

vital that the body have a sufficient supply of antioxidants such as Coenzyme 1 to eliminate dangerous free radicals, and it only takes a few milligrams (molecules) of Coenzyme 1 to have a profound influence on the body's antioxidant defense system against disease-causing free radicals.

Q. Can Coenzyme 1 enhance a person's memory?

A. Yes, it can. Memory is not a single function; rather, it's composed of a system of multiple processes. Memory can be defined as the storage of information, signals, and stimuli received by our five senses and the retrieval of this stored information. The major prerequisite for memory is cognition. Cognition is the process of receiving signals from outside the body. This is triggered by a chemical reaction in the cells of the central nervous system, and certain molecules induce information from one form to the other. These neurotransmitters are responsible for vegetative as well as cognitive performance. The best known neurotransmitters are adrenaline, its precursor noradrenaline, dopamine, and serotonin. With an increase in the production of these neurotransmitters, cognitive performance will improve. Several studies have shown that dopamine and adrenaline production are naturally increased by Coenzyme 1. Therefore, Coenzyme 1 can effectively enhance memory.

Q. How can Coenzyme 1 help Parkinson's disease?

A. Coenzyme 1 has been found to dramatically help the symptoms of Parkinson's disease, a progressive neurological disorder that affects about one million people in the United States, most of who are over the age of fifty. About fifty thousand new cases are reported each year. The age-specific incidence peaks at about age seventy and then declines. Men and women are equally affected, but African-Americans and Asians are less likely than whites to develop the disease.

The symptoms of Parkinson's disease are caused by a deficit in one of the most important messenger substances of the central nervous system, dopamine. This neurotransmitter is responsible for muscle tone and strength, upright position, libido, and emotional drive. This dopamine deficiency is reflected by the three major symptoms of Parkinson's disease: akinesia (inability to move), rigidity (stiffness), and tremors (shaking). These symptoms should not be ignored, as there is a reasonable and efficient treatment for Parkinson's disease, and life expectancy can be normal if the appropriate treatment is given.

It has been shown in a number of studies that Coenzyme 1 is able to stimulate the production of dopamine naturally. In an open-label clinical trial, 885 Parkinsonian patients were treated with the only stabilized, absorbable, oral form of Coenzyme 1. After two weeks of treatment, a significant number of patients improved their mobility, particularly in the areas of walking, pushing, posture, speech, and mimics.

Q. Does Coenzyme 1 improve chronic fatigue syndrome (CFS)?

A. Yes, Coenzyme 1 has been tested following strict Food and Drug Administration (FDA) and pharmaceutical testing guidelines, utilizing a double-blind, placebo-controlled, cross-over study that was performed at Georgetown University Medical Center in Washington, D.C. (A double-blind, placebo-controlled, crossover study means that neither the researchers nor the patients know who was taking Coenzyme 1 and who was taking the placebo; it is considered the gold

standard of medical research.) The actual clinical findings, published in February 1999 in the *Annals of Allergy, Asthma and Immunology*, confirmed that Coenzyme 1 is four times more effective than a placebo in relieving the symptoms of chronic fatigue syndrome.

Q. Why is Coenzyme 1 helpful for CFS?

A. All CFS sufferers complain about an overall lack of energy. As you'll recall the body stores energy in the form of ATP. It has been demonstrated that CFS patients exhibit an ATP deficiency, particularly after even a low level of physical exercise. Therefore, a possible cause of chronic fatigue syndrome is a depletion of the cellular energy-storing molecule, ATP. An ATP deficiency is accompanied by severe fatigue, muscle weakness, and muscle pain—common symptoms of CFS. Rest and sleep offer no relief as minor exertions result in a continued debilitating tiredness. Coenzyme 1 can replenish the depleted cellular stores of ATP, thus improving the fatigue and cognitive dysfunction. Based on these observations, a double-blind, placebo-controlled, crossover study was launched at Georgetown University Medical Center using 10 mg of Coenzyme 1. Since Coenzyme 1 increases ATP in cells, CFS patients in the study did benefit significantly from Coenzyme 1 treatment.

Q. Do any factors affect the amount of Coenzyme 1 CFS patients should take?

A. Large or overweight people may need higher dosages of Coenzyme 1 for the best effects. In a number of overweight CFS patient cases, researchers have found that 30 mg of Coenzyme 1 (six 5 mg tablets per day) leads to an improvement of CFS symptoms in four to six weeks. However, if some of these patients reduce the daily dosage to 10 mg, symptoms of CFS reappear.

Based on my experience with CFS patients, I recommend taking 10 mg of Coenzyme 1 (two 5 mg tablets) on a daily basis, in the morning and always on an empty stomach, with at least a half glass of water. If patients do not experience an improvement after four weeks of continuous usage, they should increase their dose to a third tablet either in the morning or early afternoon. They may also increase the daily dosage even further to four or five tablets, depending on their body size and weight and the severity of their symptoms. In other words, the optimum effective dosage of Coenzyme 1 varies according to each individual's own unique biochemistry and body makeup. Trial and error may be needed to find the best dosage for you.

Q. Does Coenzyme 1 help with depression?

A. Yes, Coenzyme 1 improves the symptoms of depression, such as lack of enterprise, enjoyment, interest, concentration, reduced work capacity, loss of libido, and anxiety. Depression is an illness that causes a disturbance in an individual's emotions and feelings, referred to as mood. At any given time, approximately 5 percent of the population of the United States suffers from major depression. It affects people of all ages and ethnic groups. For unknown reasons, women are almost twice as likely as men to suffer from depression. The lifetime prevalence of major depression is about 20 to 26 percent for women and 8 to 12 percent for men. Those who have had an episode of depression have better than a 50 percent chance of the depression recurring sometime in their lives. It can occur at any age; however, the average age of onset is about forty years old. Although many people experience their first episode of depression in their late teens or early adulthood, the incidence of

depression increases with age. The elderly are at a high risk of developing depression as they face multiple health problems or the loss of loved ones.

Q. Will Coenzyme 1 help with dementia and Alzheimer's disease?

A. Yes, Coenzyme 1 has been shown to improve cognitive impairment. In an FDA-approved, double-blind, placebo-controlled study performed at Georgetown University Medical Center, it was found that patients with dementia of the type found in Alzheimer's disease showed a statistically significant improvement after six months of treatment using 10 mg dosage (two 5 mg Coenzyme 1 tablets) daily. Patients treated with Coenzyme 1 showed no evidence of progressive cognitive decline during the period of treatment and demonstrated significant improvement on measures of memory, verbal fluency, and visual-perceptual problem solving. These results support the use of Coenzyme 1 as part of the Alzheimer's disease treatment program. The results may reflect improving energy metabolism in damaged but still viable brain cells.

Based on these results, Coenzyme 1 may hold promise for treating elderly people who suffer from Alzheimer's disease. Approximately 4 to 5 million Americans—5 to 11 percent of Americans over the age of 65 and approximately 50 percent of the population over the age of 85—have been diagnosed with Alzheimer's. This disease causes such progressive loss of function that more than 50 percent of these people require institutional care that is estimated to cost society billions of dollars. If future studies confirm that Coenzyme 1 can hold off mental decline in the dementia seen in Alzheimer's, this could improve the quality of life of Alzheimer's patients and of society as a whole.

Q. Is Coenzyme 1 helpful for athletes?

A. Given that athletes use more energy than non-athletes, it makes sense that a substance like Coenzyme 1, which improves energy production, might boost athletes' energy levels and result in improved performance. In an initial pilot study of four highly trained elite-class athletes, each was given Coenzyme 1 as a supplement to enhance performance of both short-term and prolonged exercise at maximal intensity. The study demonstrated that all the athletes improved both their short-term and long-duration performance levels up to 13 percent after only two months of supplementing with 10 mg of Coenzyme 1 (two 5 mg tablets) per day. Other studies have also shown that cyclists increased their oxygen capacity and improved their reaction times after only one month of 5 mg of Coenzyme 1 per day.

Normal weekend-type athletes can customize the amount of Coenzyme 1 they take daily by tailoring dosage levels to suit their overall health or training needs. When taking Coenzyme 1 for athletic activities or training, make certain that you take Coenzyme 1 (minimum 5 mg daily) for at least one month prior to the event; this will allow for optimum energy effectiveness at the cellular level. Longer-term usage should result in improved oxygen capacity, increased reaction time, and greater mental acuity and alertness.

Q. Can Coenzyme 1 be considered an anti-aging nutrient?

A. Yes, Coenzyme 1 has significant anti-aging potential. Aging is a highly complex biological process associated with a progressive decline in the performance of many organs in the body. As we age, the Coenzyme 1 and energy levels in our cells decrease. In other words, aging is loss of energy. When cellular energy declines below a certain threshold, cells in our bodies begin to

slowly deteriorate and tissue begins to degenerate. This energy loss can also signal the beginning of more serious illnesses later in life. As I have noted in previous chapters, there is growing evidence that a lack of cellular energy may accelerate the aging process, ultimately resulting in degenerative diseases, such as Alzheimer's, cancer, and many others. Conversely, if the cell is producing adequate energy, it can continue to perform all of its processes more efficiently. The more Coenzyme 1 a cell has available, the more energy it will produce and the longer it will continue to properly function. Coenzyme 1's further anti-aging potential is derived from the fact that Coenzyme 1 is one of the strongest, most powerful biological antioxidants and, therefore, helps protect cells from damaging agents and free radicals that can age the body.

A BEGINNER'S GUIDE TO ENERGY & SUPPLEMENTS

PART I: ENERGY FACTS, TIPS, AND TRICKS

Q. What are good energy-boosting foods?

A. Luckily, certain foods are a super-easy way to gain more energy. Some of the best include: fruits! Their natural sugars are a form of carbohydrates that act quickly to give you an instant energy boost. While carbs act quickly to give you energy, they fade rather quickly as well, so it's best to combine with protein. For example, have a sliced apple and peanut butter as a snack, and you'll be getting your complex carbs and protein, as well as tons of nutrients as well! Bonus: the healthy fat in peanut butter will keep you full for hours!

Oatmeal, as well as oats in general, is another prime energy-boosting food. Oats contain B-vitamins that help turn complex carbohydrates into usable energy. Plus they're full of fiber, so your body receives the energy in a steady stream throughout a long period of time, rather than a short-term spike followed by the inevitable dip in energy.

Lentils are another great choice. While not exactly thought of as a fun food to eat on the go, lentils are great for energy boosts. They provide both carbohydrates and protein—the winning combo—and have a high amount of fiber, giving that steady stream of energy throughout the day. They also contain B vitamins, iron, magnesium, potassium, zinc, calcium, and copper! And to top it all off, they're low in fat and calories. Want to add some lentils to your diet but don't know where to start? Here's an easy recipe for lentil soup, provided by Food Network Magazine.

Spicy Lentil Soup

Ingredients:

2 cups red lentils, picked over and rinsed
1 Serrano chile pepper, chopped (remove seeds for less heat)
1 large tomato, roughly chopped
1 1 ½ - inch piece of ginger, peeled and grated
3 cloves garlic, finely chopped
¼ teaspoon ground turmeric
Kosher salt
¼ cup roughly chopped fresh cilantro, plus more for garnishing
¼ cup Greek yogurt
Naan, or other flatbread, for serving

Preparation:

Combine the lentils and 7 cups water in a pot, cover and bring to a boil. Add the chile pepper, tomato, ginger, garlic, turmeric and 2 teaspoons salt. Partially cover and simmer over medium-low heat, stirring frequently, until thickened, 18-20 minutes. Stir in the cilantro. Thin the soup with water, if desired, and season with salt.

Mix the yogurt with 2 teaspoons water and a pinch of salt in a small bowl. Ladle the soup into bowls and top with the yogurt and more cilantro. Serve with naan.

Other great energy boosting foods: citrus fruits, almonds, chocolate, water, whole-grain cereals, vegetables, beans, nut butters, and yogurt.

Q. I want to exercise, but I'm too busy! What are ways I can make time for exercise?

A. If you don't have time for marathon sessions at the gym, don't fret. You can still make time for exercise, whether while sitting at your desk, or for more compressed amounts of time. If you only have time for less than an hour of gym time, remember this key word: intervals. Interval training is basically mixing up your cardio routine with low-intensity and high-intensity intervals. Doing interval training while running or on your favorite cardio machine will zap more calories, burn more fat, and boost your energy more than exercising at one stable pace. So if you're short on time, interval training will give you a powerful, effective workout in less time.

If you're set on your time working out but can't fit it into your schedule, your best bet may be to wake up earlier. True, it may be hard to wake up a couple hours earlier at first, but exercise, especially cardio, will boost your energy and make you feel more alert and mentally clear throughout the day. And if this habit leads you to getting to bed sooner, all the better!

If neither of the above two choices are an option, then try simple workouts you can do from your desk. Go for a walk outside on your lunch break, or check out YouTube for quick workouts you can do with nothing but your chair and desk. Grab some water bottles and do a couple reps of bicep curls, or any of your favorite arm exercises. Or even take breaks every so often for minute intervals of jumping jacks. The bottom line is that there is always time for exercise, and your work, body and mind will thank you for it.

Q. Do I really need 8 hours of sleep every night?

A. Not necessarily. Though most people need an average of 7 to 9 hours of sleep per night, everyone is different. If you are getting a set amount of sleep per night and are functioning fine throughout the day without constant caffeine or other energy boosts, you're probably doing a good job getting an adequate amount of sleep already. But if you're feeling groggy in the morning and want to find out how much sleep you really need, try testing it out! For a week, try going to sleep at the same time, while keeping your eating/drinking habits stable. Don't set your alarm, and see at what time you wake up naturally. If you sleep longer the first night or two than the ones following, it probably means you were sleep deprived before. But after the fourth day or so you should be waking up simply due to how much sleep you need. Once you've found out the right amount of hours for you, start going to bed at a time that allows you that much sleep every night. Happy sleeping!

Q. Will taking a nap give me more energy or leave me feeling sleepier than before?

A. It depends on the type of naps you're taking. In general, naps have gotten a bad rep in the past. Studies have shown, however, that naps are not for the lazy; rather, naps can boost mental clarity and alertness, reduce stress, and lower the risk of heart attack and stroke¹. So by taking a midday

¹ <http://www.boston.com/bostonglobe/ideas/naps/>

nap, you can be overall improving your work ability for the rest of the day. The key is finding the right amount of time to nap. In order to wake up without feeling groggy, you should time your naps to 45 minutes or less. That way you don't enter the stages of deep sleep and REM, which are harder to wake up from and more disorienting. A "catnap" is considered 20 minutes, and is ideal for those of us on the go who need a quick fix for mental acuity and alertness. So as long as your nap is between 20 and 45 minutes, it should give you more energy, not leave you more drained than before.

Q. Yoga is known to be good for one's health, but how so? Is the hype true?

A. Indeed, yoga has many health benefits, some of which are harder to test and confirm than others. While there are many different types of yoga that can have different benefits, all forms of yoga are good for improved flexibility, breathing, and posture, as well as for reducing stress. More strenuous forms of yoga, such as power yoga and "Yoga for Athletes" that individual yoga studios offer, have aerobic benefits as well. Yoga can increase energy and mental alertness regardless of the style, and in general promotes a mindset of being at one with the body, and therefore more aware of maintaining a healthy lifestyle.

Q. What are healthy, fun ways to get an energy boost that I can try?

A. There are tons of fun ways to rev up your energy! Check out some of the ones below. For the complete list of 55 tips, check out the ZenHabits blog at zenhabits.net/55-ways-to-get-more-energy/.

Rock out loud.

Whether you work alone or in a room with coworkers, a quick one-song rock out loud session is an effective way to beat back exhaustion. In a cube farm? Get everyone to sing along! The key is to choose a song that everyone can sing along with. The energy boosting effect comes from bobbing your head and singing out loud. One song, 3 minutes. That's a quick boost of adrenaline that lasts for a bit. You'll be singing to yourself the rest of the never ending project delivery night.

Work with your body's clock.

There is a natural ebb and flow of energy throughout the day. We start off sluggish after waking up, even after a solid 8 hours of sleep. Our energy peaks mid-morning, and it's natural to want a siesta in the afternoon. We get a second spike of energy in the early evening, followed by our lowest energy point just before bedtime. Once you understand this natural rhythm of energy throughout the day, you can work on the important tasks during your peak hours and avoid early afternoon snooze fests (meetings).

Have an afternoon power snack.

A small, healthy snack that is low in sugar and has protein and/or fiber a couple hours after lunch helps you finish off the day strong. Some suggestions:

- mixed nuts
- nonfat yogurt

- apple and peanut butter
- frozen berry smoothie
- trail mix
- granola bar

Wear brighter colors.

This trick is related to the mood you project to people, and the reciprocating mood they project towards you. If you wear dark, somber colors, you project a dark, somber attitude, and people will respond to you with a somber attitude. If you wear bright, happy colors, you'll get that attitude projected towards you, which will boost your own mood and energy levels.

Wake up at the same time every day.

Including weekends. This sets your body clock. Otherwise, you'll be wide awake when you should be asleep. Or worse, asleep when you should be awake (dozing off in a meeting is embarrassing). The key is to go to bed at the same time every night. If you need to reset your sleep cycle in one day, stop eating for the 16 hours before the time you want to wake up.

Use caffeine wisely.

Coffee and caffeinated sodas can boost your alertness, but be careful about letting it be a habitual crutch. The temptation to drink more caffeine to get even more energy will be strong. Eventually you'll be downing 5 double-shot espressos a day just to function. Drink coffee earlier in the day to avoid insomnia, which will make the next day worse.

Avoid energy drinks.

Energy drinks provide a near-instant hyperactivity boost, but they always result in a crash. Energy drinks are like energy credit cards — you're spending future energy to get short-term energy. The resulting energy deficit gets worse until you hit energy bankruptcy.

Sniff some citrus.

In addition to the Vitamin C, citrus scents (like orange, lemon and lime) stimulate alertness. So lather on some of that lemon scented lotion.

Quit smoking.

Ex-smokers frequently report an energy boost of 2-3x when they quit smoking. Nicotine affects your sleep, so you don't get as good a night's sleep. That makes you cranky, frustrated and tired the next day. Which leads to more smoking. It's a vicious energy sapping cycle.

Play to relax.

Playing a game keeps your mind working (versus, say, watching TV), but doesn't have any of the energy-sapping stresses of work. Go ahead and play that quick game of Scrabble on FaceBook, but have a strict time limit if you don't want your boss to say something.

Splash some water on your face.

Just letting the cool water hit your face washes off the grime and stresses of the day. You could also jump in the pool or take a shower for the same effect. Showers stimulate the circulatory system and metabolism. Get wet to feel more energetic.

Stand up, stretch and take a couple of deep breaths.

Stretch your arms, back, legs, and neck. Take a deep breath through your nose, hold it, and let it out slowly and forcefully. Repeat several times. This will take 30 seconds and will be an instant fix. When you sit back down, you'll have the clear head and fresh feeling needed to power through the tough/boring task in front of you.

Take a mini-vacation.

Take one day and just do whatever you want. No work, no chores, no errands. Enjoy your one full day of vacation, then come back to work more motivated and energetic.

Eat a satisfying breakfast but a light lunch.

A heavy lunch, especially one with lots of carbs or fat (like a burger combo) will hit you as soon as you get back to the office. And it'll be a sluggishness that lasts to the end of the day. Eat a big breakfast instead. It provides the fuel you need for the day, at the time when your body needs it the most. Not only will you avoid the afternoon food coma, the big breakfast will make you more productive in the mornings. Double win.

Listen to tunes while you work.

It's well known that our brain's pleasure centers light up when we hear music. Throwing on the headphones and listening to any music you like while working will give you a productivity boost.

Move gym time to the morning.

A lot of people go to the gym after work. Try going to the gym in the morning instead to get energy that lasts all day. Sure, you'll have to wake up an hour or two earlier, but you get that time back at night. That exercise in the morning gets the endorphins flowing, which keeps you happy and productive the rest of the day. By exercising in the morning instead of at night, you spend the same amount of time at the gym, but get the added benefit of having more energy at work.

Dress up.

Feeling better about yourself has a magical way of giving you more energy. Put just a tad more effort into looking your best for work, and you'll get compliments from coworkers that will make you feel better — and make you a perkier, more energetic worker bee.

Get on your toes.

Roll up and down on your toes. This stimulates your circulatory system, which will deliver much-needed oxygen and fuel (glucose) throughout your body. You'll be more energized and sharper. You can do this right now.

PART II: INTRO TO SUPPLEMENTS

Q. What exactly are supplements?

A. By definition, a supplement is “something added to a thing, supply a deficiency, or reinforce or extend a whole.” In that sense, dietary supplements *supply* deficiencies in our health. The dietary ingredient provided may include vitamins, minerals, amino acids, enzymes, herbs, organ tissues and metabolites. Therefore dietary supplements contain helpful ingredients that exist naturally in the body, but may be deficient for a number of reasons. Drugs, unlike supplements, contain ingredients that do not exist in the body naturally, but stimulate the brain or other parts of the body in different ways. So it is very important to remember that dietary supplements are **not** drugs.

Q. Why do people take supplements?

A. People take supplements for a number of different reasons. Some people will take certain supplements to ward off diseases and ailments such as heart attacks, high blood pressure, high cholesterol, colds, stress, and flu. Other people take supplements to alleviate symptoms and/or pain from diseases they already have, such as Parkinson’s, arthritis, osteoporosis, fibromyalgia and immune dysfunction. And another popular reason that people take supplements is to increase energy.

Q. Do I need to take supplements every day?

A. It depends on what supplement you’re taking. Lots of vitamin and multivitamin supplements should be taken daily, as should many energy-boosting supplements. In the case of most supplements, you can’t cause your body harm by ingesting too much. However, if you ingest them too infrequently, you may not experience any results. In general supplements should not replace well-balanced meals and a healthy diet, but *supplement* them so that the nutrients these foods provide can be more easily processed and used in the body. So if you’re looking to take supplements to achieve desired results, it would make sense to read the label and see how often said specific supplement should be taken.

Q. I started taking a supplement and haven’t seen any results. What’s the deal?

A. Most likely, you either haven’t been taking the supplement for long enough to see results, or you’ve been taking it sporadically. If you are going to take a supplement, you should accept that it needs time to kick in and for your body to put it to use. You may not feel results after the first day or week, but don’t give up, because you could be doing some great things for your body. And as was explained in the previous question, taking a supplement “every once in a while” will most likely not help you achieve the results you desire, because you’re not giving the supplement enough time and force to help your body.

Q. Can I overdose on supplements?

A. Technically yes, but it’s unlikely. You can overdose on *anything* when taken to the extreme, including oxygen and water. When it comes to vitamins, there are water-soluble and fat-soluble vitamins. Vitamin C and B vitamins are water-soluble, meaning that if an excess of these are

ingested, they are not stored but excreted out of the body. Fat-soluble vitamins, such as Vitamins A and D, work a little differently, as they will end up accumulating in the body. However they don't pose as any significant health risks, except for an excess of vitamin A that pregnant woman should avoid for it may be harmful to the fetus². So while it is difficult to overdose on supplements, one shouldn't take them in excess anyway, as they won't provide extra health benefits. Supplements should be taken based on the dosage and directions provided, and should not be taken instead of balanced, healthy meals.

Q. Is there a difference between brand name supplements and their generic counterparts?

A. There can be. While the FDA administers that brand drugs and supplements and their generic counterparts must be the same chemically, you can't assume that you'll be getting the same thing at a lower price automatically. It's true, many generic supplements have simply been created once the brand drug's patent has expired, and is for the most part the same. But with something as important as your health at stake, it's important to read the fine lines. First of all, supplements and drugs that were created outside of the United States don't adhere to FDA regulations. So many companies will distribute generic products that claim to be the same as the brand products, but in fact have different dosages, or extra additives. Basically, you won't know what you're ingesting in these situations. So how else can you tell if a generic supplement is legitimate? Look for USP-approved supplements. A USP approval guarantees that the generic product contains the specified amount of ingredients, and that the supplement will break down and release into the body in the specified amount of time. The name, shape, color, and packaging may vary from supplement to supplement, but these two tips are the ultimate way to see if a generic product is legitimate. And if you are in doubt, stick with the brand product.

Q. How do I know which supplements to take?

A. Before taking any supplements, it is best to consult your physician. There may be supplements that you should be taking that you are not aware of, and there are supplements that overall will improve your health even if they aren't vital for it. Your healthcare consultant will be able to help you get a general idea with what is best for you. You can also do research of your own online or at the library to learn more about what each specific supplement does and what you can count that it will do for you and your body. No matter what, it's important to know what you're taking before you begin using it regularly.

² <http://www.vitamins-nutrition.org/vitamins/vitamin-overdose.html>

PART III: A QUICK GUIDE TO POPULAR DIETARY SUPPLEMENTS

Amino Acids: Aid in repair, growth, and development of muscle tissue.

B vitamins: Used to relieve stress, aid memory, reduce PMS symptoms, and treat anxiety/depression.

Calcium: Helps build strong bones and teeth, fights against osteoporosis.

Carnitine: Amino acid that promotes fat burning; energy boost.

Chromium: Fat burner; promotes muscle gain and fat burn.

Coenzyme Q10: Used to treat migraines, heart failure, cancer, and aging, among others.

Creatine: Used as source of energy; works in creation of ATP.

Dandelion: Used as a diuretic.

Echinacea: “Natural cure-all.” Helps body fight and resist a number of illnesses.

Fish oils: Used to help with heart disease.

Ginseng: Herb used to help reduce stress.

Glucosamine: Used as alternative treatment for osteoporosis and arthritis; helps body form cartilage.

Glutamine: Amino acid used to gain muscle tissue and protein.

Guarana: Herbal form of caffeine. Used to boost energy.

Iron: Needed for producing red blood cells.

Melatonin: A natural sleep aid.

Multivitamins: Good for all-around health, getting proper amount of vitamins the body needs.

Coenzyme 1: Used to boost energy, improve overall health, antioxidant, immunity booster, helps with number of diseases such as Alzheimer’s, Parkinson’s, chronic fatigue syndrome, and depression.

Omega 3 fatty acids: Helps aid high cholesterol, heart disease, and other diseases.

Taurine: Amino acid found in muscle tissue. Boosts energy.

Vitamin A: Used to help growth/repair of body tissues, protects kidney and bladder tissues, helps maintain soft, smooth skin, and aid good eyesight.

Vitamin C: Used to increase calcium, for protection against immune system deficiencies, cardiovascular disease, prenatal health problems, eye disease, and skin wrinkling.

Vitamin E: Taken mainly for skincare purposes. Anti-aging, helps regulate vitamin A, can help treat sun damage.

Whey protein: Protein supplement.