

WHOLE BODY WOMEN'S HEALTH

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INTRODUCTION

Natural Medicine strives to keep the body in constant balance and allow for optimum health.

A key philosophy in natural healing that differs from conventional medicine is our treatment of symptoms. Natural medicine believes that our body produces signals in the form of symptoms (i.e. headache, stomach ache) when there is “something” is out of balance. If symptoms are blunted with conventional medications, the underlying disease process continues although the symptom is no longer present. The natural approach to symptom relief is to listen to these signals and address its origin. If the origin of the symptom is addressed, the progression of disease is reversed.

There are many factors that lead to disease such as genetics, diet and lifestyle, environmental toxins and spiritual wellness. Often, many aspects of one's life must be changed in order to regain a balanced body and enjoy optimum health.

If you are reading this book, you are probably suffering from a multitude of symptoms associated with the lead up to menopause such as forgetfulness, irritability, insomnia, restless legs, heavy or erratic periods, sore breast, hot flushes, night sweats bloating and fluid retention. The never-ending list goes on! How, you ask yourself, will you cope when all your “older” friends tell you that the worse is yet to come? Or, like many others, you may not realize you are heading toward menopause. You may just think you are going crazy!

Many women have heard that balancing estrogen and progesterone, our main reproductive hormones (coming from the ovaries) will eradicate your symptoms. This approach may work for some, but really it is only the beginning of the story. Since our body is an integrated organism, all hormones talk to each other every second of the day and night, so it is not just the ovaries that determine our overall sense of wellbeing and balance, but also hormones originating from the thyroid, adrenals and pancreas. The hormone-producing group of organs is called the “endocrine” system.

It interacts with the nervous and immune systems as well. Therefore, balancing all hormones is critical to achieving balance.

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Systems that support proper function of endocrine, nervous and immune systems are all membranes in the body and our elimination organs. If you consider that our skin is continuous with our digestive lining; nose and sinuses; lungs; urinary tract and vaginal wall, it is easy to see why these “mucous membranes” play such an important role in the body. These membranes act as a protective barrier and a place when nutrients, like food, can be taken in and toxins can be removed. Unfortunately, they are also the place where external toxins can be absorbed, contributing to our toxic “load”. This is the reason that the health of each protective barrier or mucous membrane must be maintained in order to avoid invasion.

Other elimination organs include the liver, and the kidney. These organs work hand-in-hand to insure that harmful chemicals are removed from the body. The liver activates and deactivates all internal chemicals, including hormones as well as external toxins, including drugs. The small intestines receive liver wastes in the form of bile, and excrete them in our bowels for removal with bowel movements. The kidney removes all water-born toxins once the liver has neutralized them. If the liver, kidney and mucous membranes are not working properly, harmful chemicals can interfere with the normal functioning of all cells in the body. Chronic constipation is a common occurrence, which can cause toxins to be re-absorbed through the digestive tract and into the blood stream.

When it comes right down to it, the CELL is the ultimate elimination unit in our body, since; all organs are made out of cells. Unless the cell is working properly, the body will not be able to use the foods we provide it. The key to harmony in the body then lies in improving the functioning of each cell. Unless the cell can bring in nutrients from its cell membrane and remove toxins from its core, health is not possible.

Therefore, it is crucial to understand how the cell works in order to realize how we can improve our health beyond the absence of disease.

FACTORS THAT MAINTAIN HEALTH

Healthy Digestion

The digestive tract must be working at its best in order to break down food properly. Factors such as environmental toxins in the air we breathe, water we drink and even the food that we eat contributes to inflammation and disordered functioning of the digestive tract. While some nutrients cross the membrane of the digestive tract passively, most nutrients including glucose (sugar), amino acids (proteins), iron, calcium, sodium, potassium and magnesium all require carriers to transport them across the membrane to the blood stream. This process needs energy in the form of ATP. Over one quarter of the body's entire daily energy production is used in the process of digestion.

Acid-Base Balance & the Progression of Disease

If we look at the origin of disease at the tissue level, toxins come in contact with mucous membranes including the digestive tract (stomach, intestines and colon), respiratory tract (ears, nose, throat and lungs), urinary tract (kidneys and bladder), and reproductive tract (ovaries, uterus or testes and prostate). When toxins affect one of our "tracts", a change occurs in all mucous membranes by reflex action. We are really just "doughnuts" with exposure to the outside environment from our mouth to our anus and all the openings in between. If the body is in optimum health, these areas have built-in defense mechanisms that work together to combat invading toxins (including pollutants, food additives, bacteria, fungi and viruses). When our defenses become overloaded due to failing health, invading toxins disrupt the delicate pH balance. This acid-base balance is unique to each area of the body.

Normal pH of the digestive tract is key to good digestion. Every essential nutrient requires a specific pH to be absorbed over the membrane of the digestive tract. If the pH is too acidic or basic, optimum absorption cannot take place. Typically, diets high in combinations of animal protein and carbohydrates and low in vegetables and fruit or processed food choices cause a decrease in pH causing acidity in the body.

Chronic pH imbalance leads to inflammation and congestion of the digestive tract, which causes changes in the permeability of the membrane, leading to the absorption of toxins and undigested food that normally would not be present in the blood stream. This condition is commonly referred to as "leaky gut" syndrome. Leaky gut means the "mesh" that allows nutrients to enter the bloodstream becomes enlarged. Increased membrane permeability leads to a hyper-excitability of the immune system, causing the development of food and environmental

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sensitivities commonly referred to as allergies. When left unchecked, immune function is impaired from increased toxic load. Immune dysfunction leads to the development of autoimmune conditions such as Crohn's disease and rheumatoid arthritis. Since the immune system keeps in regular contact with the nervous and hormone-producing (endocrine) systems, hormone balance and nervous system health can be profoundly disrupted. Long-term dysfunction of immune, endocrine and nervous systems overloads the body's protective mechanisms including DNA (or genetic code) repair system allowing for increased mutation. This damage shuts off the cell's ability to die, forcing the cell to grow out of control. The consumption of more vegetables and fruits and minimizing one's exposure to toxins contribute to the normalization pH, which has a profound impact on health. Herbs supporting healthy pH balance include fenugreek and birch.

PROBIOTICS: Healthy Bacteria

From your mouth to the end of the small intestines in the digestive tract, chemical and mechanical processes are taking place to transform food into its base nutrients for fueling the cell. These nutrients are brought to the cell through the blood stream and the vessels that house our immune system. To enter the blood stream, specialized cells in the intestines commonly transfer digested nutrients. These cells engulf and transfer the nutrients across the digestive membrane.

Compromised food transfer from increased membrane permeability leads to an overgrowth of harmful bacteria in the gut. Harmful bacteria residing in the digestive tract produces potentially cancer-causing toxins. These "endotoxins" are readily absorbed into the blood stream and can damage all cells in the body especially our protective organs such as the liver and kidney. Fibromyalgia, a common condition characterized by chronic muscle pain and physical fatigue has been associated with cell damage from bacterial endotoxins. Overgrowth of harmful bacteria has also been connected with an increase in the incidence of colon cancer.

With this in mind, it is very important to support the growth of healthy bacteria in the digestive tract. Not only does healthy bacteria facilitate the absorption of many needed nutrients through the membrane, but it also plays a critical role in immune support by "starving out" harmful bacteria that may grow in its absence.

Foods high in soluble fiber such as pectin found in apples and pears have been shown to act as "prebiotics" or food for healthy bacteria. In addition, the daily use of human-strain age-specific probiotics aids in maintaining healthy bacteria on all the protective membranes of your body.

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YOU ARE WHAT YOU EAT: Importance of whole foods

When you go to the grocery store, do you buy frozen fruits and vegetables or fresh? To the health conscious shopper, fresh is always best. Fresh

food contains more nutrients and is easier to digest. Once food has been dried, frozen or processed, the food becomes nutrient deficient and calorie laden. By sticking to the outside aisles of the grocery store, where the “fresh” food is kept, and supplementing with whole food nutrients where needed, the body is strengthened by what you take in rather than being broken down. Buying local, organic food is the best way to insure that you are receiving the right combination of nutrients that the body requires for health.

Single nutrient supplements are not well absorbed and recognized by the body. For example, when a vitamin is received in the digestive tract as a part of a whole food item, it has many helpers such as minerals, enzymes, sugars and proteins that aid in its absorption into the blood stream. Once in the blood, protein “chaperones” from the food source attach to the vitamin. This attachment allows the cell membrane to recognize the vitamin, and grant entry into the cell. In contrast, synthetic isolated vitamins and minerals lack the appropriate companions that are needed for recognition and entry into the cell. Without the complete package, the vitamin is forced to “steal” the needed nutrients for recognition from the body’s stores of nutrients. By this mechanism, long-term use of isolated vitamin supplements lead to nutrient deficiency. It makes sense then, to use whole food supplements that have not been heavily processed. If we use only organic, whole food and herbal supplements to enhance a healthy diet, we can flood our cells with the nutrients that are needed for optimum function and balance.

Healthy Elimination

There are three primary organs of elimination that must be supported in order to efficiently remove toxins from the body. They are the liver, kidney and the digestive tract. In times of need, other organs may become involved in elimination. These include the lungs, glands (mammary, sweat, salivary) and the skin. In natural medicine, chronic conditions involving these organs suggest that there may be altered or impaired function of the liver, kidney and digestive tract.

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The cell is the fundamental unit where elimination must take place. Once out of the cell, toxins travel in the blood stream to the liver for neutralization. The liver then shunts the wastes to the kidney for removal in urine. Neutralized toxins can also be contained in the bile. The gallbladder concentrates bile and secretes it into the upper digestive tract. Finally, toxins are removed from the colon with bowel movements.

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The liver houses two sets of enzymes that are responsible for processing of all chemicals in the body. Phase I liver enzymes activate chemicals such as drugs, producing large amounts of free radicals in the process. Phase II liver enzymes work to deactivate active compounds produced by Phase I enzymes. Both Phase I and II liver enzymes must be functioning well to create a balanced system. If Phase I enzymes are working in “hyper drive”, or the Phase II enzymes are sluggish, imbalance can occur. This leads to the build up of toxins and free radicals at a cellular level. Herbs that can rebuild damaged liver cells and support their balanced function are those in the thistle family such as blessed thistle, milk thistle and artichoke.

THINGS THAT HARM US

External Toxins

Xenobiotic is a term that describes a chemical foreign to the human body. These chemicals make it difficult for the body to carry out essential functions such as absorption, distribution and recognition of nutrients. In today's world, potential toxins are vast and prolific. They include xenobiotics (insecticides, herbicides, drugs, solvents, heavy metals); infections (viruses and bacteria); inhaled toxins (mold, algae, food, pollen); physical toxins (electromagnetic pollution, ionizing radiation); lifestyle-derived toxins (“junk” food, smoking, heavy drinking); hormonal imbalance; and emotional factors (stress, trauma). It has been said that, “there are no harmless substances only harmless uses”(1), meaning that an excess of any substance can lead to disharmony. Studies have shown that additive effects of minute amounts of many toxins combined together causes more damage to cell function than several exposures to one particular toxin. For the average person, this is how we typically receive toxins; several combined together in low concentrations. In urban areas, the air is filled with a plethora of chemicals in small amounts such as cigarette smoke, car exhaust, dry cleaning solvents and synthetic fragrances. Perhaps this is the reason that “second hand” smoke is so dangerous.

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“Toxic load” is the cumulative effect of exposure to harmful chemicals that ultimately interferes with the body’s ability to maintain a healthy environment conducive to balanced cellular function. With all these toxins surrounding us, it is a wonder we are even alive. To combat invading toxins, our body has evolved it’s own innate protective system housed within the outer membrane of each cell. Compounds such as super oxide dismutase, catalase, peroxidase and glutathione are produced by the cell’s antioxidant system. Like all other systems, it requires many nutrients to neutralize potential threats. Eating a diet high in bio-available nutrients on a daily basis is essential to providing our cell’s protective mechanisms with the supplies that it needs to protect them from damage.

Free Radicals

Oxygen is a gas present in the air that surrounds us. We need oxygen for all aspects of life. Free radicals or reactive oxygen species (ROS) are created every time a chemical reaction using oxygen occurs in a cell. Considering there are more than one trillion cells in the body that produces over a thousand chemical reactions per second, it is no wonder that the cell is equipped with special systems to neutralize these dangerous oxygen species. Free radicals commonly produced include hydroxyl radical, super oxide, lipid peroxide, and hydrogen peroxide radicals. Unfortunately, today’s environment and lifestyle has provided too many free radicals for the cell’s protective mechanisms to keep up with. Therefore, the cell needs a little “ help from its friends”. These friends are whole foods and medicinal plants that naturally contain high amounts of compounds called antioxidants, whose job it is to absorb and neutralize free radicals. Plants containing vitamin E and C, carotenoids, polyphenols, anthocyanadins, selenium, zinc, copper and manganese can provide these antioxidants. Many herbs are naturally high in antioxidants including hawthorn, hibiscus, bilberry, rosemary, turmeric and ginkgo.

Electromagnetic Pollution (EMP)

The cell membrane itself vibrates as a very specific frequency, which is reinforced by the magnetic field of the earth. Interference from electronic devices that produce their own magnetic fields such as cell phones and televisions cause the membrane of the cell to lose their ability to create these vibrations. When this occurs, nutrients and oxygen cannot pass through the cell membrane. Toxins are not capable of leaving the cell, so its toxic load increases. When cells cease to vibrate, circulating hormones cannot attach to the surface of the membrane. EMP can penetrate anything but is largely undetectable. To minimize the harmful effects of

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EMP in your body, it is important to lower your exposure to devices that produce a magnetic field.

MAINTAINING CELLULAR HEALTH

The Cell

The cell is the building block of every organ system in the human body. There are more than 100 trillion cells making up the body. When it comes right down to it, every organ system is made up of cells. Ultimately, profound healing must occur at the cellular level to profoundly impact health. It is critical then, to understand the mechanisms by which the cell works and then provide the nutrients that the cell needs.

Although each system in the body carries out its own unique function, the nutrients required for each cell is same. Amino acids from proteins, essential fatty acids from fats, glucose from carbohydrates, minerals, vitamins, trace elements, and antioxidants are all required for the cell to live and function properly. The difference between vibrant and poor health is largely determined by the health of groups of cells that make up what we know as the human body.

A diet rich in all essential elements is key to feeding the cells with nutrients. Complete digestion of nutrients from food is the first step to providing these nutrients to the cell. Once in the blood stream, nutrients require sufficient circulation and blood pressure, adequate muscle tone surrounding the organs, oxygen and a healthy cell to be able to receive these nutrients and use them for its functions. Like the body, the cell produces wastes from its daily tasks. The cell must be able to get rid of its wastes from its internal environment to the blood stream, where the liver processes it. The barrier to entry of each cell is its outer membrane. The appropriate functioning of the membrane is essential to allow nutrients and oxygen in and wastes out of the cell.

The Structure of the cell

Each cell in the body has the same components that allow it to function properly. True “constitutional” healing occurs when cellular health is improved. By improving the health of the cell, every function in the body is balanced. This produces a body that can experience health at the deepest level possible.

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The Nucleus

The centre of the cell is called the “nucleus” and it houses our genetic material called DNA. DNA is a double-helix strand of amino acid sequences that acts as the “blueprints” that determine the structure of the body. It acts like the brain of the cell, since it directs daily function.

The mitochondria: getting your energy back

Physical and mental fatigue is commonplace in today’s society. One of the main reasons we suffer from chronic fatigue is from damage to a cellular structure called mitochondria. Inside the cell, this maze-like structure provides essential energy that acts as “fuel” for the cell. Each cell contains about 2,500 mitochondria or one quadrillion mitochondria in the entire body— about three times the number of cells in the average adult human body. Where energy requirements are great, the cell increases its population of mitochondria. Nutrients are absorbed through the cell membrane into the inner fluid environment of the cell where it is transformed into ATP – a form of stored energy – in the mitochondria. The nutrients needed for energy production are amino acids from protein, sugars from carbohydrates and fatty acids from fats and oxygen. Co-factors that improve the efficiency of the process include vitamins B1, B2, B3, B5, lipoic acid, iron, magnesium, sulfur, and phosphorus. Additional nutrients needed to facilitate the entry of the essential nutrients into the mitochondria are L-carnitine, vitamin C, vitamin B3, vitamin B6 and iron. ATP is recycled and re-charged in the mitochondria about 1000 times per day to maintain adequate energy supply. Over 90 percent of oxygen found within cells is used for production of energy in the mitochondria. About five percent of oxygen used in the mitochondria produces free radicals that are damaging to DNA housed within the cell. Mutation of mitochondrial DNA causes mutation in future mitochondria that are produced in new cells. This mutation leads to cells that contain defective mitochondria that yield lower energy production. Organ systems that are effected most by mitochondrial damage include the brain, spinal cord, heart, muscle, kidney, liver and endocrine (hormone-producing) system. External toxins and can also damage mitochondria in the cell, leading to poor overall function of that cell. Without the energy necessary, there is a higher likelihood of mutation of DNA leading to disordered function of the cell. Many conditions such as chronic fatigue syndrome and fibromyalgia are a direct result of widespread damage to the mitochondria.

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The cell membrane: the protective barrier

The cell membrane is like the troll at the bridge – it is the gatekeeper for all molecules that request entry into the cell. It is made up of two lipid or fat layers with protein and cholesterol in the middle. The proteins in between the fat layers protrude out of the cell membrane and provide “docking” sites for messengers like hormones that float by in the blood stream. Essential fatty acids, especially omega-3s found in fish and flax oil provide the building blocks for healthy fat layers. A diet laden with trans and saturated fats yields faulty cell membranes that cause abnormal function within the cell by allowing harmful chemicals and free radicals to enter the cell.

In order for hormones to exert their effect on the cell, it must be able to fit like a “key” into a three-dimensional docking site. In order to insure a perfect match, the docking site also vibrates at a very specific frequency. Therefore, the molecule requesting entry into the cell not only needs the correct shape, but it must “wiggle” the right way as well! In addition to fats proteins and cholesterol, the membrane also contains a host of antioxidants that protect the membrane from damage. Through inadequate intake of nutrients to support healthy membrane function, the integrity of the cell membrane may be easily degraded, leading to damage of its internal components such as the mitochondria and DNA. The cell membrane can be thought of as the “heart” of the cell, since its proper function can profoundly impact the overall health of the entire cell and all its contents. It is interesting to note that studies have shown that a cell can survive without DNA and mitochondria, but will die without a cell membrane intact.

TYING IT ALL TOGETHER

Connective tissue is the material that holds many body structures together. Cartilage, tendons, ligaments, and blood vessels are all composed of connective tissue. They provide strength such as bone and cartilage; storage of minerals in bone; energy in the form of fat; and flexibility in the body from tendons and ligaments.

About one half of proteins in the body are composed of connective tissue in the form of collagen and elastin. The main building blocks of these proteins are vitamin C plus the amino acids lysine and proline. The human body cannot produce these nutrients, and so depends on a steady supply from food sources. There is a continuous web of connective tissue throughout the body known as the matrix. If connective tissue is disordered in the body, many disease states occur.

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BODY SYSTEMS THAT HELP

Immune Health

The immune system's primary goal is to protect the body from invaders that are potentially harmful to all cells and its functions. The main organs that comprise the immune system are the spleen, liver, lymph vessels and nodes, bone marrow and thymus gland.

In today's environment, our immune system has a lot to deal with since toxins are virtually everywhere. Due to its active role in neutralizing invading toxins, the immune system suffers the most from a high toxic load. Immune complexes such as the tonsils and appendix are strategically placed where tissues may come in contact with toxins. In fact, 70 percent of our entire immune system congregates around our digestive tract. Healthy bacterial flora is essential for effective immune function in the digestive tract. In addition, chronic stress and hormone imbalance can have a profound effect on immunity. To understand this concept, it is important to look at our hardwired system as a result of genetic programming. The release of the stress hormone, cortisol triggers a "red alert" in the nervous system, which leads to the mobilization of immune molecules in anticipation of a possible threat. This chain reaction has been intact as a part of our strong unconscious drive to survive for 10,000 years. When a food substance is ingested that an individual has an intolerance to, inflammation in the digestive membrane occurs, causing the immune system to be activated. This activation causes our stress response to be triggered, causing a surge in a stress hormone called cortisol, by the adrenal glands. By testing the rhythm of cortisol secretion throughout the day, it is possible to see if an individual suffers from food intolerances. If cortisol is raised following a meal, there is a good chance the person has multiple intolerances or allergies to the foods they commonly eat. In response to inflammation and cortisol release, there is an increase in endorphin production (our own pain killers). Historically, endorphins were needed to decrease the pain response while dealing with a "life or death" situation. Now, it creates the phenomena that the food you crave the most is usually a food that you are highly intolerant to. Herbs that can be used to modulate healthy immune function include astragalus and Echinacea.

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Nervous System Health

I often receive queries from my patients if their condition is “all in their head” and I often reply, “Yes!”. In the past, society has labeled conditions that could not be diagnosed by blood tests or X-rays to be “psychosomatic”, meaning there was no physical basis to the disorder. We now know that this statement could not be further from the truth. The nervous system interacts constantly with both the immune and endocrine systems. So, all conditions relating to hormone imbalance and immune function can be affected by our emotions. The automatic part of our brain, which houses both our “fight or flight” response along with “rest and rebuild” reflex, can have a profound effect on health. In addition, a pea-shaped gland in the brain known as the pituitary produces stimulating hormones that cause each endocrine organ to wake up and produce hormones on a daily basis. In traditional medicine, this structure is known as the “third eye” since it allows the brain to perceive changes in external environment and alter internal physiology as a result. The pituitary is connected to the hypothalamus, which monitors the blood for changes in hormones and directs the release of stimulating hormones from the pituitary gland.

Since the brain is made of mostly fat-soluble material, it is the favorite resting place of many toxins (especially heavy metals) for storage until the body is capable of metabolizing them. Many toxins enter the body from the environment. With the onslaught of toxins affecting us on a daily basis, it is imperative that we protect and support nervous system tissue to insure the smooth function of all other connected systems.

Supplements that support healthy nervous system function include B vitamins found in many whole grains and nutritional yeast, and essential fatty acids, especially those high in omega-3s. Herbs that promote “relax and rebuild” reflex in the nervous system include passionflower, linden, and skullcap.

WHEN THINGS GO WRONG

Women’s midlife health challenges

Women in their midlife experience a multitude of symptoms. “What ever happened to my younger days when I felt great without much effort”, one might reflect. Reproductive challenges such as pre-menstrual syndrome (PMS), and peri-menopause come in many different packages; no two people seem to experience the same combination of symptoms. Additional hormonal aberrations are common during this transition and may compound the picture. Symptoms associated with an imbalance of the thyroid, pancreas and adrenals are common during periods of reproductive

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hormone imbalance. Getting to the root of the problem seems to be a moving target. What system do we treat first? Usually, it is a combination of supportive measures to all endocrine organs that allows the body to bring itself back into health and balance. But there are some basic nutrients that are needed for all women in midlife. In actual fact, these nutrients are needed throughout our entire reproductive lifecycle and will help every cell function at its best.

PMS starts when periods start to shorten from the norm of 28-30 days causing a variety of symptoms. Menopause is a retrospective diagnosis defined as one year with no period. Let's look the most common symptoms associated with PMS and menopause.

Condition	Symptom
PMS	Nervous system: irritability, anger, depression, insomnia, anxiety, headaches, mood swings, lack of concentration, dizziness, fainting Digestion: abdominal distention & bloating, heartburn, indigestion, flatulence, change in bowel habit Urinary: water retention General: fatigue, abnormal appetite, cravings, weakness Reproductive: shortened cycles, breast swelling & discomfort, ovulation pain, cramping Skin: acne Musculoskeletal: joint pain, backache Respiratory: increased incidence of sinus infections & colds
Menopause	ALL OF THE ABOVE Reproductive: hot flushes, erratic periods, heavy periods with flooding, vaginal dryness & infection, low libido Insulin balance: night sweats Urinary: incontinence & infection Nervous system: migraines

*Reference: Trickey, Ruth. Women, hormone & the Menstrual Cycle (pg 107-8, 131-49)

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Typically, these symptoms increase in number, duration and severity as the onset of menopause approaches. Depending on the health of the individual, the symptoms can start very early in a woman's reproductive life. Today, young girls often start with irregular periods, progress to challenges with fertility, develop PMS, which forms a part of peri-menopause ending with the cessation of menses called menopause. Natural medicine addresses imbalance in all hormone-secreting organs to resolve the broad range of symptoms experienced.

THE OVARIES

The ovaries are cradled between the hipbones and are attached to the inner wall of the back on either side of the spine. They are oval in shape and about the size of a chicken egg. The ovaries secrete estrogen and progesterone, which are the main hormones that cause the menstrual cycle.

Estrogen & Progesterone

Estrogen and Progesterone are the predominant female hormones. These two hormones not only produce our menstrual cycles and allow us to have babies, but they impact every system in the body.

Estrogen

There are three main types of estrogens produced in the ovary and adrenal glands: estrone (E1), estradiol (E2), and estriol (E3). Estrogens have growth enhancing effects, which are most obvious during puberty. They are responsible for fat deposition around the waist, breast and hips and stimulate the muscular lining of the uterus. Beyond the reproductive organs, estrogens cause rapid cell growth, support healthy brain function, protect your eyes, decrease wrinkles on skin, and allow minerals to be absorbed into bone.

Progesterone

Progesterone is produced in women when ovulation occurs around mid-cycle. Earlier in life, its role in fertility and pregnancy is to thicken the uterine lining with blood vessels and increase milk-producing glands in the breast. Beyond its role in fertility, progesterone acts on the brain to improve mood and cognition. It also protects the brain and nerves from mutation by supporting healthy cell death and regeneration (regulates apoptotic genes). It is also a natural anti-spasmodic, helping to relax muscle in the lungs, digestion and urinary tract. Progesterone also supports healthy immune functioning and bone health by maintaining the

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production of stem cells in the bone marrow. Stem cells are the base molecule from which blood and bone cells are made. Progesterone improves the health of all connective tissue such as tendons, ligaments that supports joint health. Since progesterone improves skin elasticity and resilience, it is key to decreasing wrinkles and stretch marks.

In women, progesterone insures that testosterone is kept in balance. As progesterone secretion decreases during peri-menopause, testosterone is allowed to increase, causing hair loss on the scalp and increased facial hair. Progesterone is also made by the adrenal glands during menopausal years and beyond. If the adrenal glands are not functioning properly due to chronically high stress levels, progesterone deficiency will be pronounced.

Understanding Estrogen Dominance

Did you ever wonder why conditions such as endometriosis, fibroids, severe PMS, low libido, anxiety, depression and pre-mature menopause are so common? It seems that our mothers did not endure these conditions, so what has happened to us?

Unlike our mother's generation, our modern world has introduced many estrogen type chemicals in the food that we eat and the water that we drink. It has been estimated that synthetic estrogens can reach as high as 3% concentration in our drinking water, since local sanitation systems do not filter out metabolites of oral contraceptives (the pill) and HRT (hormone replacement therapy) medications when wastewater is recycled into the drinking water. Also, many preservatives such as flexible plastics (i.e. plastic wraps and bottles) and pesticides act on the estrogen receptors to cause an overproduction of estrogens by strongly binding to estrogen receptors. In addition, ovulation becomes erratic or infrequent as we age, causing a decrease in the production of progesterone, which leads to further imbalance between estrogen and progesterone.

Balancing estrogen and progesterone

Herbs containing phytoestrogens can be used to normalize estrogen dominance. These include black cohosh, don quai and white peony. These herbs work by competing with synthetic estrogens for docking sites on the surface of the cell and inhibiting over-production of estrogen.

Another way to improve estrogen/progesterone balance is to increase the amount of progesterone. Unfortunately, naturally occurring progesterone does not exist in plants at biologically active levels. However, wild yam has been thought to provide essential precursors for increased production of progesterone by the ovaries and adrenal glands.

THYROID

The thyroid is a butterfly-shaped organ that is situated in front of your airway in the neck. It produces a hormone called thyroxin (T4) and is the largest hormone-producing organ in the body. T4 is comprised of 4 iodine molecules. Once made in the thyroid, T4 must transform into its active form called tri-iodothyroxin (T3) in the liver with the help of the mineral selenium. Once activated, T3 controls core body temperature by controlling the rate of energy production in each cell.

The liver produces two different enzymes to convert T4 to another form. In times of balance and harmony in the body, T4 is converted to T3 by 5' deiodinase enzyme. At times of increased stress, cortisol floods the blood stream. The thyroid responds by going into conservation mode resulting in slowed metabolism and decreased core temperature. In response, the liver produces 5" deiodinase enzyme due to energy deficiency within the liver cells themselves. This enzyme produces RT3 (reverse T3), which has no physiological activity. In this case, not only does the thyroid slow down to conserve stored energy, but the thyroid hormone produced by the liver does not produce the desired effect. It is common for newborns to have elevated levels of RT3 due to the high stress process of childbirth. When the thyroid "conserves" and the liver produce RT3, vital organ function is maintained (brain, heart and lungs, vision, hearing, and muscles used for movement) but "non-critical" systems are starved of needed energy. These systems include the skin, hair, and nails. This is the reason that dry skin, loss of hair, and brittle nails are some of the classic symptoms associated with low thyroid function.

Thyroid function and enzymes

As discussed above, the thyroid works in concert with the liver to use or conserve the body's energy stores depending on the level of stress in the system. Under normal circumstances, the thyroid strives to maintain a temperature of 98.6 Fahrenheit (37 Celsius). This temperature is critical to allow all enzymes to function at their peak efficiency. Since the body is made up of chemicals, all bodily functions are a result of the sum of chemical reactions. Enzymes help to make all chemical reactions run smoothly with the least amount of expended energy.

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The correct body temperature insures that chemical reactions go at their most effective pace. If core temperature rises – as with hyper function of the thyroid, enzymes cannot “lock” into place and the body becomes inefficient. Also, if the thyroid goes into conservation mode, enzymes are scrunched too close together and cannot lock into place either. More energy is required for every chemical reaction. This manifests as constant physical and mental fatigue.

Many varied symptoms are commonly associated with thyroid imbalance, since enzyme dysfunction affects every chemical reaction and therefore every function in the body.

Symptoms associated with prolonged “Conservation” mode

- 1 Acid indigestion
- 2 Acne
- 3 Abnormal swallowing sensation
- 4 Allergies
- 5 Anxiety/depression
- 6 Muscle & joint aches
- 7 Asthma
- 8 Bad breath
- 9 Increased bruising
- 10 Carpal tunnel syndrome
- 11 Elevated cholesterol
- 12 Slow wound healing
- 13 Irritable bowel syndrome (IBS)
- 14 Dry eyes/blurred vision
- 15 Fatigue
- 16 Fluid retention
- 17 Food cravings
- 18 Headaches/migraines
- 19 Heat/cold intolerance
- 20 Low blood sugar
- 21 Recurrent infections
- 22 Insomnia
- 23 Low blood pressure
- 24 Premenstrual syndrome (PMS)
- 25 Psoriasis
- 26 Tinnitus
- 27 Weight gain
- 28 Low libido

Reference: Dr. Wilson’s temperature syndrome

(www.wilsonsthyroidsyrndrome.com)

The standard measurement to assess thyroid function is thyroid-stimulating hormone (TSH) from a blood sample. TSH is released from the pituitary gland in the brain and signals the thyroid to produce T4. These blood values do not reflect actual T4 production or its conversion into its active form T3, since it is not a direct measure. To get a general sense of your own thyroid function, simply take your oral temperature with a liquid metal thermometer 3, 6 and 9 hours after waking for 5 days. Calculate your average temperature and compare it with normal

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temperature values (98.6 F or 37C). If you are below the norm, it is most likely that your thyroid is under functioning. This is very common with people experiencing hormone imbalance and high levels of stress. Since thyroid function is so closely aligned with adrenal hormone secretion, supporting healthy adrenal function is a very important step in bringing thyroid function back into balance. In addition, supporting healthy liver function is critical to insure that T4 is converted properly its active form T3. This can be achieved with liver balancing herbs such as artichoke, milk thistle and dandelion root. Direct thyroid support is achieved by incorporating sea vegetables into your diet.

PANCREAS

The pancreas is an organ situated very close to both the liver and digestive tract, since it secretes digestive enzymes to aid in the breakdown of fats and carbohydrates, as well as a hormone called insulin. Many of you may know that insulin helps to balance “ sugar” or glucose levels in the blood. Specifically, insulin helps to bring glucose into the cell for storage. Sugar that is stored in the liver and muscle is known as glycogen. In the absence of food, insulin is low, since there is no excess glucose in the blood stream. However, after a meal, insulin concentration quickly rises in the blood. As may be expected, there is a connection between insulin and stress. When cortisol is released in reaction to chronic stress, insulin is suppressed so glucose is available in the blood for quick access. This response supports our intense, hard-wired drive for survival. And so a pattern is created: stressful situations cause high cortisol which suppresses insulin leading to excess glucose in the blood stream. Once glucose supply runs out, one experiences tremors, irritability, headaches and a lack of concentration. Once the adrenal glands begin to fail due to chronic stress, cortisol is low; and insulin lacks its control, resulting in excess insulin secretion. This leads to the development of syndrome X or metabolic syndrome, characterized by excess abdominal weight, and uncontrollable carbohydrate and sugar cravings since the cells are being starved of glucose while the majority of the supply is being stored as fat. Symptoms of low blood sugar due to high insulin production include: night sweats, palpitations, anxiety, headache, confusion, irritability and low energy.

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Metabolic syndrome affects over 25 percent of the North American population. It has a very high incidence in peri-menopause and beyond. Along with metabolic syndrome, there is an increased risk of late onset (type II) diabetes, high blood pressure, heart disease, breast cancer, polycystic ovarian syndrome, uterine cancer and nervous system disorders including Alzheimer's disease. To complicate matters, an increase in fat cells cause increased production of estrogen, which leads to estrogen dominance. Herbs that help to stabilize insulin include fenugreek, dandelion root, and artichoke.

THE ADRENAL GLANDS

The adrenal glands are small organs that sit on top of the kidneys, housed in the lower portion of the rib cage attached to the wall of the back between the spine. They are very unique in that , the medulla or center of the adrenal gland is part of the nervous system and secretes adrenalin (epinephrine) and norepinephrine, two neurotransmitters used for the body's stress or "fight or flight" response. On the outside or cortex of the adrenal gland, a plethora of hormones are produced including cortisol, DHEA, aldosterone, and testosterone. Once the ovaries cease to function during menopause, the adrenals also manufacture progesterone and estrogen. It's a big job for such a small organ!

The role of stress in menopause

Stress causes stimulation of an automatic pathway in the nervous system called the "fight or flight" or "sympathetic" response. The purpose of this pathway is to protect the body from a perceived threat. Since the "fight or flight" response is a "hard wired" survival response, it overrides all other processes in the body and is counter to the healing response. When the body senses danger, it mobilizes all saved resources such as nutrients stored in the liver, fat cells and even the muscle to ready the body for a possible conflict.

Adrenal gland: adrenalin & cortisol

The control centre for the fight or flight response is the adrenal glands. If a sudden stress is placed on the body, a short-acting hormone called adrenalin is secreted into the blood stream. The resulting "adrenalin rush" causes heightening of the senses (sight, smell and hearing), and a re-direction blood supply to the muscles and brain, meant for quick thinking and a fast escape. This process takes nutrients away from the core organs such as the digestive tract, liver and kidneys. If stress becomes chronic, a hormone called cortisol is released from the adrenal glands. Like adrenalin, cortisol breaks down stored nutrients from fat and muscle stores in the

limbs and accumulates the stores to the trunk. This allows for easy access to this fuel in times of need, resulting in changes in body shape, such as the development of an “apple” shape.

How does lifestyle affect hormone balance?

Emotional stress is chronic in our society and our body reacts to this stress as if it is a potential threat to survival, triggering the release of cortisol. North American society does not value balance and forces sympathetic overload by celebrating those who exude imbalance. Working your way “up the ladder” from long hours at your job and pushing past physical and mental fatigue allows you to acquire the status and possessions you may desire. But ultimately, this lifestyle can take a toll on your health.

In addition to emotional stress, the body experiences physical stress from many sources. Stimulant-rich diets including caffeinated beverages (coffee, tea, cola), nutrient-deficient refined foods high in sugar and fats, a lack of variety in foods and deficiency of water all trigger our fight or flight response. Physical pain due to chronic inflammation can manifest as a result of these poor dietary choices. To top it off, environmental toxins from the air we breathe, water we drink and even the food we eat, if not organic, increases the acidity of our body, which enhances the inflammatory response.

Sleep is often disrupted due to increased emotional and physical stress as well as light and noise pollution. Today, we are all suffering from chronic sleep deficit. In the early 1920s, the average sleep was over 10 hours and now it is just over 6 hours. In order for the body to function properly while awake, stored energy from tissues (fat and stored sugar) and incoming food must be broken down. Sleep is the time for the body to rebuild and cleanse itself. If the amount of sleep is less than the time that you are awake, the health your cells are continuously degrading.

In order to really understand the reasons that the body reacts the way it does to stress, it is useful to look at survival mechanisms that have been “programmed” into our system since the beginning of time. After all, our genetic code has not drastically changed in over 10,000 years. Clearly our adaptation to stress has not kept up with modern technology. Equipped with “prehistoric genes”, the survival response is triggered from innocent stimuli such as watching television at night and indoor lighting.

It is no wonder then, that those who live in rural areas without the benefit of modern technology and “fast food” enjoy better hormone balance and general health than their city-dwelling counterparts.

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Effect of cortisol on overall hormone balance

Since the “fight or flight” response is our primary survival mechanism, it takes the lion’s share of resources in times of need causing a decrease in the supply of other hormones including estrogen, progesterone, testosterone, insulin, and thyroxin. Cholesterol is made in the liver. It is an essential precursor to pregnedelone, a prohormone used in the synthesis of all reproductive and adrenal hormones. Chronic stress causes the body to allocate most of pregnedelone supply to the adrenal glands, causing a deficit in reproductive hormones.

In addition, cortisol release suppresses the production of thyroxin and insulin and inhibits the absorption of calcium from food in the digestive tract. In turn, this forces the body to get its supply of calcium from the bone. A continuous release of calcium from the bone causes a decrease in its density called osteopenia and osteoporosis.

Herbs that help to support failing adrenal function include, Siberian ginseng and rhodiola. If adrenals are producing too much cortisol, its production can be blunted with the use of a calming adaptogen called ashwaganda.

It is clear then, that stress can profoundly impact overall hormonal health and is the root of many symptoms associated with hormone imbalance. In addition to natural medicine and whole food choices, alteration of lifestyle choices is essential for regaining balance in hormonal health.

Nutrients that support cellular health

In the human body, health and disease are determined at the level of cells. The main cause of cellular malfunction is the insufficient intake of micronutrients essential for optimum cellular functioning. Therefore, it is imperative that these micronutrients are taken in on a daily basis to maintain cellular health. In women’s health challenges, the restoration of health to the cells of hormone-producing organs along with all its supportive systems will result in a deeper level of balance than can ever be achieved with treating the symptoms alone.

Vitamins

A complete spectrum of vitamins are required for cellular health. Here is a breakdown of the vitamins:

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Provitamin A

A provitamin is a precursor to the active vitamin that is stored in the liver for future use. Provitamin A or beta-carotene, can be used to make vitamin A or retinol when the need arises. Vitamin A supports healthy night vision; bone and tooth enamel formation; and maintenance of healthy mucous membranes including membranes in the gut, sinuses, lungs, vaginal wall and bladder. Due to its role in the maintenance of membrane health, it is an integral part of healthy immune function. Vitamin A also contributes to hormonal health, since it is involved in the production of all hormones originating in the ovaries and adrenal glands. It is also instrumental in the neutralization of environmental toxins such as PCBs and dioxin. The mineral zinc is required for the mobilization of vitamin A and its precursors from the liver.

B vitamins

The B vitamins that contribute to the production of energy in the cell include thiamin (B1), riboflavin (B2), niacin (B3), pantothenic acid (B5), biotin and pyroxidine (B6). Folic acid, cobolamin (B12), pyroxidine (B6), and pantothenic acid (B5) are needed for the production of oxygen-carrying complexes called hemoglobin. A healthy metabolism is supported by thaimin (B1), riboflavin (B2), niacin (B3), pyroxidine (B6), cobolamin (B12), folic acid and biotin. Many B vitamins are essential for support of healthy brain and nerve function. For example, choline is a molecule grouped with B vitamins that supports the nervous system by aiding in the formation of the neurotransmitter acetylcholine. Common signs of vitamin B deficiency are insomnia, irritability, sugar cravings, appetite change and reduced immune capacity.

Vitamin C

Unlike many animals on the planet, humans are unable to make their own vitamin C from sugar. Therefore, vitamin C –rich foods must be included in our daily diet to insure adequate intake. Foods that are high in vitamin C include red peppers, kale, parsley, and broccoli. Fatigue is a cardinal sign of vitamin C deficiency along with slow wound healing, joint pain, frequent infections and easy bruising. In times of high stress, excessive loss of vitamin C may occur. Vitamin C also helps to recycle vitamin E, an antioxidant that plays a critical role in neutralizing the effects of free radicals on the cell membrane.

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Vitamin D

Vitamin D is thought to act more like a hormone than a vitamin. Once absorbed by the skin with the help of cholesterol, it is brought to the kidney where it is converted into its active form. The mineral boron is needed to facilitate this process. The main role of vitamin D is to regulate the absorption of calcium and phosphorus from the digestive tract. It also contributes to the flexibility of bone by increasing the storage of minerals including calcium in the bone.

Vitamin E

Vitamin E is an essential antioxidant that supports the body's innate protective mechanisms against free radicals that may deteriorate the integrity of the cell's protective barrier. Once absorbed, vitamin E is shuttled to the cell membrane for use as in the glutathione cycle. The cells that benefit the most from vitamin E supply are high-fat content systems such as the red blood cells, nerve cells, and the lungs. All of these tissues are exposed to high amounts of oxygen that have the potential of forming harmful free radicals. Vitamin E also increases the amount of stored vitamin A and protects it from damage. Vitamin E naturally occurs in high amounts in sunflower seeds and almonds. As a supplement, vitamin E is more potent from plant sources since they contain all eight forms of vitamin E.

Vitamin K

Like all other fat-soluble vitamins (A, D, and E), vitamin K absorption depends on the health of pancreatic enzymes and bile secretion that improve fat absorption through the digestive tract and into the blood stream. The main function of vitamin K is to help in the formation of clotting factors in the blood. Vitamin K also aids in the formation of an intricate matrix of proteins in the bone that allows for storage of minerals.

Minerals

The human body requires 18 different minerals in order to carry out all of its cellular functions. Many minerals function as "catalysts" for a specific chemical reaction, meaning that its presence allows the reaction to occur quickly with minimum energy consumption. In the nervous system, minerals change electrical currents to generate nerve impulses. They also play a key role in muscle contraction and relaxation. Further, minerals form complexes that aid in the construction of hormones as well as supporting healthy immune function. Today, many diseases are associated with chronic mineral deficiency.

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Boron

Boron is a mineral needed in small amounts that is essential for the maintenance of healthy bone.

Chromium

Chromium in its plant form along with niacin (B3) and proteins form glucose tolerance factor (GTF), which strongly increases the sensitivity of cells to insulin. Its absorption in the digestive tract is improved when taken with starch, protein and vitamin C, while zinc competes with chromium for absorption in the digestive tract.

Copper

Copper is found in high amounts in the liver, kidneys, brain and bone. Its role is to support many enzyme systems that favor oxidation and detoxification including super oxide dismutase. Copper is also used to transform iron into a form that is required in the production of red blood cells. Without red blood cells, the blood stream would not be able to deliver oxygen to every cell in the body. In addition, copper is needed along with many other nutrients present in Femal to fuel the Krebs cycle. The Krebs cycle is a series of chemical reactions that produces energy in the cell.

Iodine

Iodine is used as starting material for thyroid hormones and plays a pivotal role in cellular health, since they are needed for increasing the rate of reactions that occur in the cell. This is especially true for those reactions involving oxygen, like the Krebs cycle, which produces energy in the mitochondria of the cell. Upon digestion the thyroid and kidneys preferentially absorb iodine.

Iron

The majority of iron in the body is used in the production of hemoglobin, a complex structure that carries oxygen in the blood stream. Iron is also required for enzymes involved in the Krebs cycle. Iron absorption in the cell requires a carrier called tranferrin to control the storage of iron. Absorption of iron in the digestive tract is inhibited by calcium and enhanced by vitamin C.

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Selenium

Selenium is a mineral that has a critical role in maintaining the integrity of the cell membrane. It achieves this through the support of the antioxidants Vitamin E and glutathione. Glutathione is truly a “big gun” antioxidant since it detoxifies the most poisonous chemicals that the cell may encounter. In this way, selenium aids in the prevention of cancer, heart disease and reduces the toxicity of heavy metals.

Zinc

Zinc aids in the function of most enzymes and supports healthy hormone balance in the adrenals (growth hormone), thymus (immune) and pancreas (insulin).

Carotenoids

Carotenoids are brightly coloured pigments commonly found in fruits and vegetables. Carotenoids such as beta-carotene are a precursor to vitamin A. Others such as lycopene are deposited in the liver, lungs, prostate gland, colon and skin. Carotenoids generally function as antioxidants that protect the integrity of the cell.

Amino acids

Amino acids are the fundamental unit that makes up proteins. There are nine essential amino acids that the body cannot manufacture itself. Since proteins are not well stored in the body, a complete array of the essential amino acids should be taken in on a daily basis to avoid deficiency. They are required in the creation of all cells in the body including muscles, enzymes, transport molecules in the blood, acid-base balancing proteins, fluid-balancing proteins, neurotransmitters, and hormones. Essential amino acids are phenylalanine, valine, threonine, tryptophan, isoleucine, methionine, histidine, leucine and lysine. For those who have inborn errors in metabolism, additional amino acids may be required including arginine, cysteine, glycine, glutamine and tyrosine.

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Cysteine is a sulfur-containing amino acid. It is required along with glutamate, glycine and selenium for the manufacture of glutathione. As discussed, glutathione is a part of the body's innate antioxidant system that is needed to neutralize harmful chemicals. Some toxins that glutathione neutralizes include fungicides, pesticides, solvents (i.e. used in paints), artificial flavorings, dyes, detergents, insecticides, heavy metals (lead, mercury, cadmium, and arsenic), automobile exhaust, cigarette smoke, and most pharmaceuticals. Glutathione is particularly important for liver detoxification, by maintaining its cell membrane integrity.

Glutamine is required during increased physical stress such as injuries, infections, severe burns, and inflammatory bowel disease. It is found in high concentration in the brain, being its preferred energy source. Immune cells such as lymphocytes and macrophages also need glutamine for healthy functioning.

Methionine is a sulfur-containing amino acid that is converted to SAM (S-adenyl methionine) to become active. It is one of the most potent "methyl donors" available and is required for critical detoxification pathways in the liver. Methyl donors are particularly useful in converting estrone, a potentially harmful estrogen into more protective forms such as estradiol and estriol. This conversion helps to resolve the effects of estrogen dominance in women's health concerns. Methionine is also used in the production and modulation of brain chemicals including melatonin, dopamine and adrenalin.

Phenylalanine is the precursor for the amino acid tyrosine, which is used to form the group of brain chemicals called catecholamines. They include dopamine, norepinephrine (a precursor for adrenalin) and epinephrine (adrenalin). Since phenylalanine profoundly impacts on balancing brain chemistry, deficiency has been associated with many nervous system disorders including depression, Parkinson's disease, and chronic pain.

Tyrosine is a starting block along with iodine for hormones produced in the thyroid. *Lysine* and *proline* are essential for maintaining the health of all connective tissue in the body.

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Tryptophan is an essential amino acid used in the brain to create serotonin and melatonin, helping with restful sleep and relaxation.

Enzymes

An enzyme is a protein-containing compound that acts as a “catalyst” to facilitate a specific biological activity in the body. For example, digestive enzymes improve the breakdown of food in the digestive system. This allows single essential nutrients to be readily absorbed into the blood stream. Without these enzymes, the body would not be able to extract any nutrition from food. In addition to digestive enzymes, there are many other types of enzymes that help to make the cell function in a more efficient way. For instance, there is a group of enzymes called isomerases, whose job it is to change the three-dimensional structure of a compound to make it more recognizable to the cell. Within this large group of isomerase enzymes exists oxidoreductases, which help to maintain acid-base balance; transferases, which moves a group on a compound to a different place when needed. For example, ATPase is a transferase enzyme aids in the release of energy stored in the mitochondria in the cell. Also, ATPases residing in the cell membrane have the ability to export toxins out to the cell.

Lipids

Good fats are essential for healthy cell membranes and have many supportive functions in the body. Lecithin or phosphatidyl choline found in Femal is the primary lipid used in the formation of healthy cell membranes and is found in vegetables such as soybeans, sunflower seeds and grape seeds.

Flavonoids

When I grew up, I was taught that growing good food, eating your vegetables, drinking lots of water, and taking in fresh air would keep you healthy. But the world around us has become toxic, and so we need help from our plant friends to provide us with added antioxidant support. In Femal, this support comes in the form of anthocyanadins; procyanadins called quercitin and rutin; and polyphenols. Quercitin plays a significant role in maintaining the health and stability of all cell membranes. This stability normalizes histamine levels, which decreases the body’s sensitivity to allergens. Rutin is a form of quercitin that combines with iron to prevent its attachment to hydrogen peroxide, avoiding the formation of a potent free radical. Anthocyanadins have a significant effect on lowering

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blood pressure by inhibiting the damaging effects of free radicals in the blood vessels.

A combination of whole foods and nutrient-rich supplement may be effective in nurturing every cell of a woman's body to realize a profound balance that cannot be achieved by symptomatic treatment alone. This can be achieved by tapping into the cellular origin of disease and replenishing the vital nutrients required for balanced cellular health.

REFERENCES

1. Bland, Jeffrey. The 20-Day Rejuvenation Diet. Keats publishing. Copyright 1996 Jeffrey Bland
2. Liska, DeAnn et al. Clinical Nutrition: A Functional Approach. Copyright 2004 The Institute for Functional Medicine.
3. Trickey, Ruth. Women, Hormones & The Menstrual Cycle: Herbal & Medical Solutions from Adolescence to Menopause. Copyright Ruth Trickey 1998. Allen & Unwin publishing.
4. Mills, Simon & Bone, Kerry. Principles and Practice of Phytotherapy: Modern Herbal Medicine. Copyright Simon Mills and Kerry Bone 2000. Churchill Livingstone.
5. Marz, Russell.B. Medical Nutrition from Marz 2nd Edition. Copyright Russell Bennett Marz 1999. Omni-Press.