

## CERTIFIED HEALTH & NUTRITION COUNSELOR ONLINE COURSE - SESSION 16:

### • Water Purification, The Ideal Diet & Home Health Tests

#### FLUORIDATION

For over five decades, the American Dental Association has continuously endorsed the fluoridation of community water supplies and the use of fluoride-containing products as safe and effective measures for preventing tooth decay. Fluorides and Fluoridation contains resources that provide important facts and answer a myriad of questions. New information and resources will be added to this area, as they become available. In the following sections, you will find the latest information about fluoride and fluoridation.



#### **Fluoride: Nature's Cavity Fighter**

Fluoride is a mineral that occurs naturally in all water sources, even the oceans. The fluoride ion comes from the element fluorine. Fluorine, the 17th most abundant element in the earth's crust, is never encountered in its free state in nature. It exists only in combination with other elements as a fluoride compound.

Fluoride is effective in preventing and reversing the early signs of dental caries (tooth decay). Researchers have shown that there are several ways through which fluoride achieves its decay-preventive effects. It makes the tooth structure stronger, so teeth are more resistant to acid attacks. Acid is formed when the bacteria in plaque break down sugars and carbohydrates from the diet. Repeated acid attacks break down the tooth, which causes cavities. Fluoride also acts to repair, or remineralize, areas in which acid attacks have already begun. The remineralization effect of fluoride is important because it reverses the early decay process as well as creating a tooth surface that is more resistant to decay. (See also Fluoridation Facts: Question 1. What is fluoride and how does it reduce tooth decay?)

Fluoride is obtained in two forms: topical and systemic. Topical fluorides strengthen teeth already present in the mouth making them more decay-resistant. Topical fluorides include toothpastes, mouthrinses and professionally applied fluoride therapies.

Systemic fluorides are those that are ingested into the body and become incorporated into forming tooth structures. Systemic fluorides can also give topical protection because fluoride is present in saliva, which continually bathes the teeth. Systemic fluorides include water fluoridation or dietary fluoride supplements in the form of tablets, drops or lozenges.

As a result of the widespread availability of these various sources of fluoride, the decay rates in both the U.S. and other countries have greatly diminished.

#### **The proper mix is key**

It is important to note that the effective prevention of dental decay requires that the proper mix of both forms of fluoride (topical and systemic) be made available to individuals. Your dentist can help you assess whether you are receiving adequate levels of fluoride for all family members from the two forms (topical and systemic).

#### **Topical Fluorides Self-Applied**

One method of self-applied topical fluoride that is responsible for a significant drop in the level of cavities since 1960 is use of a fluoride-containing toothpaste. The American Dental Association recommends that children (over two years of age) and adults use fluoride toothpaste displaying the ADA Seal of Acceptance or consult with a child's dentist if considering the use of toothpaste before age 2. Other sources of self-applied fluoride are mouthrinses designed to be rinsed and spit out, either prescribed by your dentist or an over-the-counter variety. The ADA recommends the use of fluoride mouthrinses, but not for children under six years of age because they may swallow the rinse.

#### **Professionally-Applied**

Professionally applied fluorides are in the form of a gel, foam or rinse, and are applied by a dentist or dental hygienist during dental visits. These fluorides are more concentrated than the self-applied fluorides, and therefore are not needed as frequently. The ADA recommends that dental professionals use any of the professional strength, tray-applied gels or foam products carrying the ADA Seal of Acceptance. There are no ADA-accepted fluoride professional rinses for use in dental offices.

## **Systemic Fluorides**

Systemic fluorides such as community water fluoridation and dietary fluoride supplements are effective in reducing tooth decay. These fluorides provide topical as well as systemic protection because fluoride is present in the saliva.

## **Community Water Fluoridation**

Fluoride is present naturally in all water sources. Community water fluoridation, which has been around for over 50 years, is simply the process of adjusting the fluoride content of fluoride-deficient water to the recommended level for optimal dental health. That recommended level is 0.7 - 1.2 parts fluoride per million parts water. Water fluoridation has been proven to reduce decay in both children and adults. While water fluoridation is an extremely effective and inexpensive means of obtaining the fluoride necessary for optimal tooth decay prevention, not everyone lives in a community with a centralized, public or private water source that can be fluoridated. For those individuals, fluoride is available in other forms.

## **Dietary Fluoride Supplements**

Dietary fluoride supplements (tablets, drops or lozenges) are available only by prescription and are intended for use by children ages six months to 16 years living in nonfluoridated areas. Your dentist or physician can prescribe the correct dosage. It is based on the natural fluoride concentration of the child's drinking water and the age of the child (see chart). For optimum benefits, use of dietary fluoride supplements should begin when a child is six months old and be continued daily until the child is 16 years old. The need for taking dietary fluoride supplements over an extended period of time makes dietary fluoride supplements less cost-effective than water fluoridation; therefore, dietary fluoride supplements are considerably less practical as a wide-spread alternative to water fluoridation as a public health measure. Fluoride supplements are recommended only for children living in non-fluoridated areas.

It is important to note that fluoridated water may be consumed from sources other than the home water supply, such as the workplace, school and/or day care, bottled water, filtered water and from processed beverages and foods prepared with fluoridated water. For this reason, dietary fluoride supplements should be prescribed by carefully following the recommended dosage schedule (see chart). Dietary fluoride supplements are not recommended for children residing in a fluoridated community.

## **Conclusion**

No matter how you get the fluoride you need -- whether it be through your drinking water, supplements, toothpaste, mouthrinse or professionally applied fluoride -- you can be confident that fluoride is silently at work fighting decay. Safe, convenient, effective...however you describe it, fluoride fits naturally into any dental care program. For more information about the oral health benefits of fluoride, just ask your dentist.

## **New York State Coalition Opposed to Fluoridation - Fluoridation 101**

Impure, untested and unrequired fluoride chemicals are legislated into most U.S. water supplies, not to kill nasty microbes, but to medicate tap water drinkers who are assured water fluoridation is a safe and effective way to prevent tooth decay. But it is neither.

A 1940's concept, water fluoridation and dentistry's continued goal, for every American's faucet to dispense 1 milligram fluoride via approximately one quart of water, is, shockingly, not supported by valid science.

Dentists mistakenly believed swallowed fluoride created decay resistant teeth by becoming part of children's developing enamel; but they were wrong. Fluoride's beneficial effects, if any, are topical according to the U.S. Centers for Disease Control and the American Dental Association.

Public health officials predicted fluoride would eradicate tooth decay like vaccines prevented some diseases but they were wrong about that, too. They said fluoride was a necessary nutrient and, like vitamin C prevents scurvy, fluoride would prevent tooth decay - wrong again. The U.S. Surgeon General reports tooth decay is at epidemic proportions among the nation's poor and minority populations, many of whom live in fluoridated communities.

Fluoride tablets are prescribed to children from communities that won't or can't fluoridate their water supply. With no or very poor research support, dentists say swallowing 1 milligram fluoride daily reduces tooth decay without fluoride's adverse effects such as dental fluorosis but they are even wrong about that.

Fluoride supplements, never safety tested by the US Food and Drug Administration (FDA), were "grandfathered" in before the FDA drug testing laws were enacted. New research shows that children who consume fluoride tablets are more at risk for dental fluorosis. That's why the Canadian Dental Association, the Western Australian Health Authority's Dental Section and the German Scientific Dental Association no longer recommend

routine fluoride supplementation.

Astonishingly, research now shows swallowing fluoride is virtually useless and has unnecessarily exposed millions of Americans to fluoride's adverse side effects such as bone disease and dental fluorosis - white spotted, yellow or brown stained and sometimes pitted and crumbly teeth - which has, not so surprisingly, increased dramatically in North American children. Ironically, studies show tooth decay rates are virtually the same in fluoridated and non-fluoridated communities, alike. But babies who shun tap water and drink bottled water are protected against dental fluorosis.

Some studies even show that cavity levels decline after water fluoridation stops. And that those children most at risk for fluorosis are also the ones most at risk for cavities. And at levels 3 or 4 times "optimal," fluoride can actually cause tooth decay.

In fact, dental fluorosis has gotten so bad that some dental experts say that it costs more to repair teeth damaged by fluoride than would have been saved had water fluoridation actually reduced tooth decay.

### **HOW WE GOT INTO THIS MESS?**

At the turn of the last century, many residents of the Southwest US had unusually ugly teeth. They called it "Colorado Brown Stain." Dental researchers sought to discover the source of this disfiguring tooth malformation. The culprit was high levels of fluoride in the water. Since these ugly teeth resisted decay, well-meaning but misguided dentists assumed the fluoride also caused the teeth to resist decay. However, what they overlooked is significant. The water supply was also very high in calcium and magnesium, essential nutrients we now know makes teeth strong.

In another highly unbelievable move, the dentists convinced public health people to experiment with this new fluoride discovery. They hypothesized that, if natural fluoride (calcium fluoride) in drinking water makes teeth resist decay, let's see if artificially fluoridating a town's water makes any difference.

So they used all the people in a few cities like Grand Rapids Michigan and Newburgh New York as their guinea pigs. In Newburgh, NY, they added sodium fluoride into the water supply in 1945 and left Kingston, NY, unfluoridated to act as the control.

Of course they declared fluoridation a success after only five years even though the teeth of the children who were born into the experiment hadn't even erupted yet. They said fluoride was safe because they examined school children who weren't sick two weeks before the examination date - virtually eliminating the very children who may have been made ill by the fluoride. And they never even checked out the adults.

Ten years later, the State University of New York found that children in fluoridated Newburgh had more cortical bone defects and higher rates of hemoglobin anemia. Kingston never fluoridated and recent studies show that tooth decay rates are higher in fluoridated Newburgh and their rates of dental fluorosis has skyrocketed.

And what's even more perverse is that the chemical used to fluoridate your drinking water is an industrial waste product that, along with fluoride, carries lead, arsenic, and other contaminants to a faucet near you.

The silicofluorides haven't even been safety tested in animals. With the map of the USA as a laboratory, researchers are finding that silicofluorides increase children's lead absorption, increases women's risk of hip fractures, increases dental fluorosis, can lower IQ and contribute to cancer risk and DNA damage. Fluoridation has provided a lucrative sector for researchers to apply for federal grants to study the after effects of the crazy decision to put fluoride into humans' water supply and then see what happens.

Over 62% of US communities fluoridate and most foods and beverages sold in the US are made with that water. US children are overdosed with fluoride whether rich or poor, healthy or malnourished from various sources. So it's not a surprise that after fifty years of pushing fluoride as a panacea to tooth decay, the US Surgeon General recently reported an oral health epidemic among the poor and certain minority groups, who most often already live in fluoridated communities. If their bodies were nourished, their teeth would prosper. But instead dentists are lobbying legislators all over the US to fluoridate water supplies - even when the people have voted against it and even when the studies say fluoride is hurting our children. Meanwhile, the American Dental Association reported to the press on June 16, 2000 that they have a new cavity-fighting tool - calcium.

### **WHAT YOU CAN DO**

Join the nationwide call for congressional hearings on fluoridation. URL: (Cut and paste in your browser) [http://www.citizens.org/Food\\_Water\\_Safety/Fluoridation/fluoride.htm](http://www.citizens.org/Food_Water_Safety/Fluoridation/fluoride.htm)

## **Who the New York State Coalition Opposed to Fluoridation?**

The New York State Coalition Opposed to Fluoridation consists of physicians, dentists, legislators, lawyers, scientists, environmentalists and other professionals as well as mothers, fathers and others who contribute their efforts in a volunteer capacity to inform the public about fluoride's/fluoridation's harmful dental, systemic and cumulative effects. Our primary objective, ultimately, is to end the fluoridation of public water supplies. We are part of a national and international network of organizations that oppose water fluoridation.

## **TAP WATER FOR DRINKING AND SHOWERING**

### **How Clean Is Your Water & Should You Use Your Tap Water?**

"120 million may get unsafe drinking water" was the headline of a front-page article that appeared in the USA Today paper. The article covered a comprehensive drinking water study completed by the consumer group Natural Resources Defense Council (NRDC) that analyzed EPA records on compliance with the Safe Drinking Water Act. According to the article, the study found:

- 43 percent of all water supplies violated health standards
- There were a total of 250,000 violations affecting 120 million people
- More than 900,000 people became ill each year, and as many as 900 die each year due to waterborne illness.

Although the article cited biological-related incidents in Milwaukee and New York, according to NRDC representatives, many of the violations also involved other SDWA contaminants. The POU/POE industry has equipment, which is tested or certified to reduce many of these contaminants such as lead.

It should also be noted that 57 percent of all water supplies were not cited as violators and that the municipal water supply in the United States is considered to be one of the safest in the world. These are important facts to keep in mind to prevent any unjustified "scare tactic" marketing.

WQA will provide a more in-depth follow-up on this as soon as the actual report is studied. Copies of the 44-page report are available by sending \$8.94 for the report and \$14 for the appendices to the National Resources Defense Council, 1350 New York Avenue, Suite 300, Washington, DC 20005.

### **How safe is Your Shower?**

A recent series of scientific studies have confirmed that your morning shower is not the most innocuous pleasure of the day. Scientists have learned that we absorb as much or more synthetic volatile chemicals from the water we shower in daily than we receive by ingestion of the same type of water daily from food and drinking water. Two studies are of particular significance here.

1. Professor Julian B. Andelman, Center for Environmental Epidemiology, Graduate School of Public Health, University of Pittsburgh, Pittsburgh, PA reported in the scientific journal: The Science for the Total Environment, 47, Pgs 443-460, that roughly 60% more chloroform and trichlorethylene can be absorbed by the body in the shower than is absorbed from ingesting drinking water for that day. To prove this, he constructed a model shower in his lab, and introduced these two volatile chemicals into the showerheads set at different heights and at different temperatures. When the hot water mixes in the shower with the cold water, the volatile chemicals are driven off into the air and, of course, breathed into the lungs. In the lungs, the blood barrier is only one cell thick so the chemicals gain immediate access to the blood stream.
2. The role of skin absorption of volatile organic contaminants (VOCs) was reported by Halina S. Brown, Ph.D. et al in the American Journal of Public Health, Vol. 74, Pg. 479-484. They found a direct line relationship between the concentration of volatile chemicals in water that were in contact with the skin, and the concentration of those same chemicals in the blood stream immediately after exposure. This is quite understandable when we realize that the skin is the largest organ of the body and is composed of lipid membranes that are indeed permeable to volatile chemicals. What does all this mean to you and me?

Chemical companies constantly affirm that a little chemical poison does not hurt us, but why expose ourselves unnecessarily?

Clinical ecologists have learned that the more you are exposed to chemicals in your environment, the more quickly you become sensitive to those same chemicals. After a time of continuous exposure, persons can reach their threshold level for that contaminant and thereafter evidence certain characteristic symptoms, which will appear more and more often. Again, prevention is the safest route to follow. Don't allow yourself to

become sensitive to chlorine or any of the chlorinated by-products from municipal water.

To those who rather doubt that this is a truth at all, let us recount an experiment that is conducted in laboratories occasionally. Anyone can do this for himself or herself:

*"Take a glass of water from the faucet after it has been running a few minutes. Test the water in the glass for free chlorine residue. Our value that we received for water in this city was 1.11 parts per million free chlorine. Then hold your fingers in the glass of water for 15 seconds, and test the water again for chlorine. You will be amazed to see the difference. Our value was 0.19-PPM chlorine. That calculates to a decrease of 82.9% chlorine for just 15 seconds contact. The few fingers have about 1 one-hundredth the surface area of the whole body that is exposed in a shower situation, so you can readily understand why Dr. Brown and her colleagues reported these findings in the Journal of the American Public Health Association. Something to think about the next time you swim in a chlorinated pool or take a chlorinated shower."*

What can you do about this for yourself? You can get a shower filter from Ozark Water Lab by contacting them at 800-835-8908.

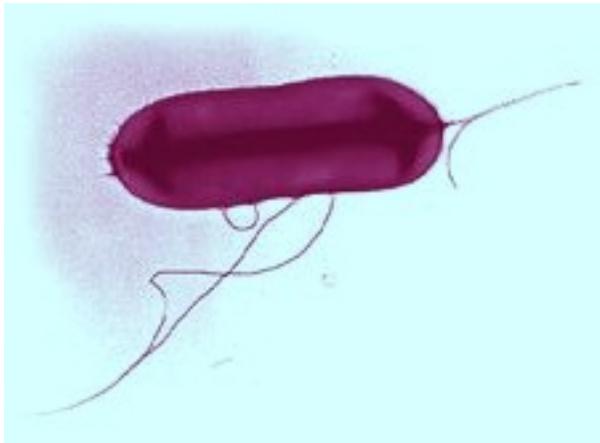
### **Do You Drink Water From A Well?**

At one time natural underground water sources were almost always drinkable without treatment. No longer is this true in many parts of our nation; therefore, we need R/O purifiers now more than ever since they do remove bacteria and viruses. Without doubt, they do work best where the water is chlorinated. If your water source is not chlorinated, then a few precautions are helpful. Whenever you finish using the R/O unit for more than a day, put 2-3 drops of Clorox in the diverter cup and attach to the faucet. Run the water through the unit for 1-2 minutes until you can smell the chlorine coming out of the white tube. This diminishes bacterial growth on the outside of the membrane.

Notice at this point that the EPA does not recommend the use of only carbon filters on unchlorinated water sources since bacteria can build up even faster. The R/O unit contains a membrane before the carbon filter to prevent bacteria from even reaching the carbon filter, but the pressure must be high enough.

Most springs and wells (and some city water systems) require a 10-inch sediment pre-filter to protect and extend the life of the small pre-filter in the R/O unit. All wells and springs give up copious quantities of dirt, mud, sand, and algae at times of intense rainfall, so it is good economy to protect the filter with a large one.

Thus you can discern that even the best operating R/O purifier in the world may not work as efficiently as it could if the water quality is unusual in some respect. The good news is that all of these abnormalities can be corrected for by slight alterations.



### **SWIMMING POOLS, JACUZZI'S AND SAUNAS**

#### **Deadly E. coli outbreak at Atlanta waterpark hospitalizes eight children.**

An E. coli outbreak occurred hospitalizing at least eight children who played in the Captain Kid's Cove pool at the popular White Water park near Atlanta June 11 and 12. Georgia Health officials believe that fecal contamination in the pool was the source of the infection.

The children were infected with a dangerous strain of E. coli known as 0157:H7 which often causes hemolytic uremic syndrome in children under five. HUS is a serious complication of E. coli infection which attacks the red blood

cells, kidneys, and potentially the heart and brain. Six of the infected children are suffering from HUS and require treatment by kidney dialysis, blood transfusions and respirators.

Among those hospitalized is three year old Brody Weiss, son of Atlanta Braves shortstop Walt Weiss. As of June 24, Brody was listed in serious condition at Scottish Rite Medical Center.

"Still unclear is how a potentially fatal strain of bacteria managed survive two days in water treated with chlorine..."

## Conventional Swimming Pool Water Testing & Treatment Provides Inadequate Defense Against E. coli Bacterium Transmission

Contaminated beef is the most common method of transmitting E. coli bacteria, which causes approximately 20,000 infections and 200 deaths in the United States each year. What is particularly alarming about the 0157:H7 strain is the apparent ability to survive in a swimming pool environment.



While many swimming pool operators and health officials believe that a free chlorine residual of 1.5 to 3.0 parts-per-million provides sufficient sanitation, there are several factors, which have a significant impact on the bactericidal effectiveness of the sanitizer. For example, correcting the pH of a swimming pool or spa from 7.8 to 7.4 at a fixed free chlorine residual will cause a dramatic reduction in the kill time for E. coli.

Most regulatory agencies set water quality requirements based on the measurement of free chlorine residuals with DPD test kits. However, free chlorine is composed of two distinct parts or species known as Hypochlorous acid (HOCl) and Hypochlorite ion (OCI<sup>-</sup>), which are not equal in their ability to sanitize. The ionic form of chlorine (OCI<sup>-</sup>) is slow acting, while the Hypochlorous acid (HOCl) is 80 to 300 times more effective.

Unfortunately, bather loading and chemical dosing constantly influence the dissociation between the two chlorine species, rendering mandated sanitizer residual levels and the DPD measurement thereof a weak tool in maintaining bacteriological efficacy.

The maintenance of a chlorine residual in conformance with Health Department requirements provides little assurance of healthy water quality.

## Oxidation Reduction Potential (ORP) Provides Qualitative Measurement and Control of Sanitizer Effectiveness



The CAT 2000 Automated Controller ensures inactivation of E. coli and waterborne pathogens through the Oxidation-Reduction Potential method of chemical control.

### OVERVIEW

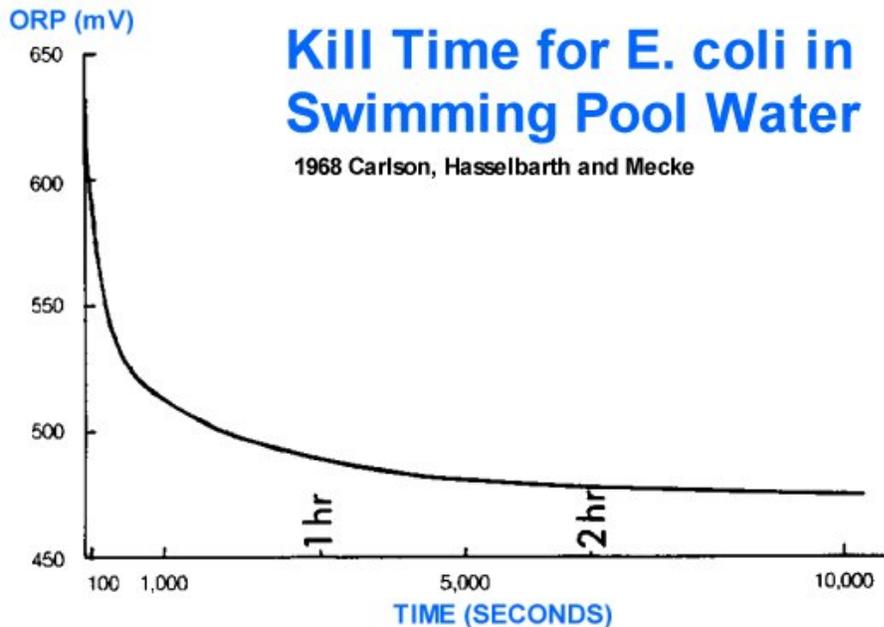
CAT Controllers monitor and maintain water quality using the Oxidation-Reduction Potential method of water analysis. Conclusive research demonstrates the Oxidation-Reduction Potential (ORP) method of water analysis is the only reliable measure of kill time for waterborne pathogens in swimming pools. The CAT Controller monitors water quality by use of pH and ORP sensors to continually compare sensed values to safe set point levels and automatically dose chemicals to insure proper disinfection.

ORP and E. Coli 1968 - Carlson, Hasselbarth and Mecke. Studies at the Water Hygiene Institute of the German Federal Health Office demonstrated that the rate of killing for E. Coli organisms in swimming pool water is dependent on ORP and not on the free residual chlorine level. The kill time is just a fraction of a second at an ORP level of 650 mV, but increases rapidly to several hours at lower ORP values.

For further information on CAT Controllers: Chemical Automation Technologies, Inc.

## Maintaining an Oxidation Reduction Potential (ORP) of 650 mV Provides Nearly Instant Kill of E. coli Bacteria

Non-electric copper/silver cartridges will work well with pools - not true. Non-electric cartridge or catalytic type units can work well with spas where there is a constant re-circulation of water and the flow through type purifier "sees" the water several times per hour, constantly purifying it. However, in a swimming pool, the water may turn



over only once per day and therefore, when using a catalytic type unit, a residual of chlorine is required to keep the water sanitized. Pool storeowners want you to come back to replace expensive cartridges and buy chlorine. Electronic ionizers work much better in a pool since they leave a purifying residual of minerals in the water.

### The Mineralizer

- The Mineralizer Copper/Silver ionizer may cause staining. Anything can potentially cause staining given improper conditions - chlorine, leaves, chemical imbalances, minerals, act. Vinyl and new

quartz/pebble finishes are extremely hard to stain. Also today, there are very effective stain removal additives available that, if needed, will quickly and inexpensively remove any type of surface stains.

- Copper and/or silver may be dangerous to humans. The normal amount of copper with the Mineralizer in your pool water is 0.3 PPM, well below the EPA maximum of 1.3 for drinking water. Fish can easily live in ionized waters - try that with chlorine.
- Bacquacil type products give good water quality; but at a very high cost. Most users of non-chlorine type products can pay for a Mineralizer in one season. Besides, what could be better than swimming in mineral water?
- The electric Mineralizer requires a residual of chlorine remain in the water - not true. Only occasional low doses of chlorine are required to "polish" the water. This low dosage should burn off quickly not requiring a chlorine residual and not exposing yourself to a toxic chemical?
- The Mineralizer still requires some chlorine - true. However, your chlorine cost will drop by approximately 90% hurting the pool stores chemical sales. Lifeguard has been in business since 1988 and has sold thousands. Why do you think you haven't heard of the

### Mineralizer until now?

- Chlorine is more forgiving than copper/silver ions - not true. Copper/silver ions are not affected by heat or sunlight. Chlorine requires cyanuric acid additive or it will burn off in hours. Copper/silver take weeks to come out of solution.
- The Mineralizer requires more testing than chemical systems - not true. Since ions are added automatically and dissipate slowly, the homeowner simply test pH and copper every 1-2 weeks. A very low dosage of oxidizer (preferably bleach) needs to be added when the weather has lost its crystal clarity, usually once per week in the summer and 3-4 weeks in cooler weather.
- Chlorine will keep you water clear - true. But copper/silver ionized water will give you unmatched water clarity and fresh water quality!
- Wouldn't you really rather swim in natural minerals than chemicals?

### WHY AREN'T YOU USING A MINERALIZER?

- Why are you using caustic chlorine or expensive Bacquacil where there are affordable alternative sanitizers for you pool?
- Why are you exposing yourself and your family to potentially dangerous long-term effects of poisonous chlorine and Bromine when there are very affordable alternatives for your pool or spa?
- Why would you swim in water that dries your skin, sinuses, hair and eyes, bleaches your clothes

and hair, and smells like chemicals; when there is a natural mineral alternative that is like swimming in pure, fresh lake water?

- Why are you buying and handling large quantities of chlorine every year when a natural chlorine reducer will pay for itself in most pools in 1-2 years?
- Why are you baby sitting your pool and testing it constantly when there is a natural mineral, ion generator that automatically produces the sanitizer and requires much less monitoring and testing and is more forgiving?

### **COMPARISON: MINERALIZER VS OZONE**

- The MINERALIZER can give residential users a "chemical free water" because there is a purifying residual of copper and silver ions present in the water at all times. The small dosage of oxidizer required after every spa usage will react and dissipate out before the next usage.
- The copper/silver ions present (.3-.4PPM copper and .03PPM silver) is t easily sufficient to kill algae, bacteria and virus present in the water
- The entire vessel has a purifying residual, not just a few feet away from the injector point. Copper/silver ions are filtered out of the water after they flocculate and kill contaminants.
- Cu/Ag ions are not effected by heat, sunlight or bather load and stay in solution until reacting with a contaminant.
- A chlorine/sanitizer residual is not required with the MINERALIZER (in residential applications) because of the continuous presence of a purifying Cu/Ag residual. A tiny dosage of an oxidizer is required after each usage to burn off bather sweat, oil, etc.
- Since ozone provides no residual, many users run their circulating pumps overtime to provide ozone exposure. The MINERALIZER only requires circulation time sufficient to maintain water temperature, saving considerable energy.
- Cu/Ag ions are pH neutral and will not effect other additives. Other than pH control and slight oxidation, no other algaecides or additives are never required.
- Since Cu/Ag ions are not oxidizers, they are not effected by bather load. Any oxidizer reacts with organic matter including skin, hair and eyes.

It's simply the BEST system for purifying your pool or spa! There really is a better, healthier, easier way!

### **CATALYTIC--Nature 2---Vision--cartridge systems**

These products are really bacteriostatic filters and they kill contaminants only in the cartridge itself, requiring long circulation times since they only work when the pump in running.

#### **Advantages:**

- Reduces chlorine/oxidizer usage 50-80%
- Higher quality water since chlorine residual (.4 PPM) is lower

#### **Disadvantages:**

Still swimming in chlorine

- Must purchase cartridge enclosure system and install
- Must return to store every 4-6 months to replace expensive cartridge
- Negligible Cu/Ag residual purifying the water, thereby requiring long circulation times and chlorine residual.

#### **Changing to another system:**

Simply turn it off and revert to any purification system you want.

#### **Compared to a MINERALIZER**

The long-term cost will be --much--much higher than MINERALIZER since cartridge must be replaced. This is the reason pool supply stores push this product. Add up the cost of the system and the replacement cartridges and there's no comparison with the MINERALIZER and you're still swimming in chlorine! Since the cartridge is "purifying" the water ONLY when it passes through, a chlorine residual is required since there is NO purifying residual in the pool. These systems work better in spas where there is more circulation time and the device treats the water many times per day in a pool the water may only turn over 1 to 1 1/2 times per day, limiting it's effectiveness. The MINERALIZER generates and leaves a purifying residual of Cu/Ag ions throughout the pool so only normal circulation time is required. MINERALIZER systems do require low-level chlorine "shock" about once per week (typically 1-gallon household bleach). That low level chlorine shock reacts almost immediately with the water and oxidizes out quickly leaving chlorine free swimming and very high water quality.

## **BAQUACIL---SOFT SWIM--CHLORINE ALTERNATIVE**

Also called biaguanide. This product is a synthetic chemical purification product that is considered a chlorine alternative. Unlike chlorine, biaguanide is not an oxidizer, so it does not attack your body to react or “burn up” organic contaminants.

### **Advantages**

- Higher quality water, non-chlorine softer “feel” to the water
- No “device” to purchase

### **Disadvantages**

- COST--- Very, Very expensive Users report 300-500% more expensive than a conventionally chlorinated system
- Special test kit required
- Manually added into the pool
- Frequent clarifier/shock treatments similar to shock treatments common to chlorinated pools.

### **Changing to another system**

Water must have the Bacquacil removed before starting any other system. The water is heavily oxidized and Bacquacil “burned out” over several days with no swimming. The pool’s pump is turned off and the chlorine reacts to the Bacquacil and drops it into a gel form to the pool’s bottom where it is vacuumed out on “waste” so that it doesn’t go through the filter. Most users change the cartridge sand or DE and start again. Water can now be treated with another system.

### **Compared to a MINERALIZER**

Many users complain that the water eventually gets a “plastic” taste to it and that the chemical seems to lose some of its effectiveness over a long period of use. The big difference is cost, most Bacquacil users can pay for a MINERALIZER system in less than a year with what they’ll save About 33% of MINERALIZER customers are switched from Bacquacil and report water quality easily on par with their former system.

## **OZONE GENERATORS**

Ozone generators like the OZONIZER manufactured by our company are available for pools and spas in ultra-violet light and corona discharge technology. UV units are lower in ozone output and more suitable for spas and CD units with higher output are for larger pools. Larger surface area + and - plates and/or more plates will increase the output of a CD unit. The output of any ozone generator is related to airflow (volume), air temperature, and in particular humidity. Humid air will significantly reduce ozone production and frequently air dryers are recommended. Its primary advantage (time in water--water quality), is also its primary disadvantage (time in water--no residual).

### **Advantages**

- Reduces chlorine usage 50-90%
- Higher quality water since chlorine residual is very low
- “Oxygenates” the water

### **Disadvantages**

- Very expensive “device” to purchase
- High amp (electricity) draw, energy cost increases to run it
- Generates “oxidizer-ozone” like chlorine in that it “burns up” contaminants
- Corrosive “oxidizer-ozone” production reduces life of the device. The more humid the air, the faster the device deteriorates.
- Still swimming in chlorine (although much lower residual)
- Requires injector installation to “vaporize” the ozone into water
- Leaves NO ozone residual, ozone only stays in water about 30 sec to 1 minute
- Water is purified only at injection point, thereby requiring chlorine residual
- Water must be circulated much longer (18-24 hours)

### **Changing to another system**

Turn it off and start your new purifier immediately

### **Compared to a MINERALIZER**

The MINERALIZER leaves a purifying residual of Cu/Ag ions in the water and only normal water circulation is required (8-12 hours). Cu/Ag ions are unaffected by humidity and NO chlorine residual is required leaving higher water quality. MINERALIZER draws significantly less current (200-1000 ma depending upon setting) using only about \$5 per year in energy in most backyard pools. Ozone devices are more complicated and more expensive to manufacture and, therefore, much more expensive to purchase. Ozone's best application, we feel, is in drinking water and aquariums where no residual is required, sunlight is minimal, and organic load is high and the ozone will oxidize it.

### **Salt or brine chlorine generators**

There are two types of chlorine generators available today. Both systems generate chlorine from its most basic form--salt. The salt generator has a low level of salt (saline) in the pool and as this salt moves past the high voltage chamber, the salt is changed into free active chlorine (sodium hypochlorite-or-bleach) where it is free to oxidize (burn up) contaminants--just like a conventional chlorinated system. The brine generator is different in that the salt is converted into chlorine in the brine tank and then introduced into un-saline water as a chlorine purifier.

#### **Advantages**

- Automatically generates chlorine
- Only salt required, no more chlorine purchases

#### **Disadvantages**

- Still swimming in chlorine
- Expensive device
- Uses high amp draw--high energy usage
- Generating very corrosive chemical--limited life of the generator chamber
- Generator chamber typically titanium for longer life---very expensive to replace
- Swimming in saline water (ever been to the ocean?) or brine model requires frequent handling and disposal of very caustic brine by-product

#### **Changing to another system**

Unless you go back to a chlorinated system, saline systems must have the pool drained and salt removed; there is no other way to get it out.

### **Compared to a MINERALIZER**

Like the MINERALIZER, chlorine generators produce and inject the sanitizer automatically. However, the method of purification is totally different. The MINERALIZER ions are toxins to contaminants, not oxidizers. Chlorine--irregardless how it is introduced is an oxidizer--"burns up" contaminants and, of course attacks your body. Water quality with the brine generator is the same as a chlorinated pool. Saline pools, however, also have that "brackish" water feel and taste and leave you with that uncomfortable "sticky" feeling you have when you leave the ocean water. Probably the single biggest advantage of the MINERALIZER is the unparalleled water quality.

### **SOLAR FLOATING IONIZER**

Available for years through many home shopping catalogs. About the size of a floating Frisbee, this plastic product floats in your pool and has a small solar cell on the top which generates a low DC current into ONE center self sacrificing copper (+) electrode and one outer (-) stainless spring electrode.

#### **Advantages**

- Mineral purifier produces high quality water
- Just "throw" it in your pool and let it work

#### **Disadvantages**

- Easily susceptible to accidental breakage by swimmers--not under warranty
- Only ONE self sacrificing electrode
- Requires direct strong sunlight to generate electric current--will not work in shade or cloudy days--results in inconsistent ion output.
- Does NOT change polarity---not self cleaning
- Small single electrode --frequently replaced, easily scaled and insulated since polarity does NOT change
- Requires new test kit--copper test
- Must lightly chlorinate weekly

### Changing to another system

No adjustments necessary, can start new system immediately

### Compared to a MINERALIZER

Both are ion generators, that is where the similarity ends. The solar unit depends upon the sun for energy, whereas the MINERALIZER maintains a constant output from the setting it has. Copper/silver ions MUST be maintained at .3-.4 PPM to sanitize the water. Ion output is dependent on many factors:

- Voltage and amperage: Consistent with an electronic MINERALIZER. Voltage can be changed as necessary as electrodes wear. Different pool sizes (gallorage) require different voltage settings on the electronic MINERALIZER; all pool sizes use the same Floatron unit with inconsistent output. Inconsistent output means more testing and inconsistent chlorine and algaecide usage.
- Electrodes--solar unit DOES NOT change polarity which will clean electrodes, ion output will cease if not constantly manually cleaned. MINERALIZERS change polarity about every 2 minutes and will automatically "self clean". The small single electrode on the Floatron will wear out about 4 times faster than a top line MINERALIZER and twice as fast as our economy model--check your long term costs!!! Price wise, the Floatron is about the same as the new economy model electronic MINERALIZER.

### Conventional chlorine OR bromine chemicals

Chlorine has been enormously beneficial to mankind improving the quality of drinking water and virtually eliminating waterborne diseases. However, chlorine is a very caustic, corrosive chemical and it attacks anything organic. Waterborne "organic" pathogens, algae, bacteria, and virus. Unfortunately, it also attacks the skin, hair, and eyes of the humans swimming in it. Ever notice the higher level of chlorine in the water, the more that your skin is dried out and your eyes burn?

### Advantages

- Conventional "familiar" system to its users
- Always effective in high enough quantities
- Easy to purchase from a variety of sources
- Can be "automatically" added with in line chlorinator device

### Disadvantages

- Dangerous to store
- Caustic and hazardous handle, ingest and to breath
- Reacts to your body and "dries" it out and is absorbed
- Uncertain long term exposure health effects
- Chloramines (by product of chlorine and organic waste) are PROVEN carcinogens. Varying levels of chloramines are found in chlorinated pools.

### Changing to another system

Simply let the chlorine naturally burn off/dissipate and start the new system immediately.

### Compared to a MINERALIZER

Chlorine, it is well known, has unwanted side effects. Studies show that more chlorine is absorbed through the skin, than by drinking it. So the longer one is in the water swimming, it follows that more chlorine is absorbed. Try this at home: Take a glass of tap or chlorinated swimming pool water. Take your pool chlorine test kit and test the water for chlorine (usually about 1-3 PPM). Now swirl two fingers in the glass for about 30 seconds to 1 minute and re-test for chlorine. SURPRISED??? Gone isn't it?? Where did the chlorine go? It reacted with and/or was absorbed by your skin. This is one reason why commercial pools go through much more chlorine when they have high bather loads. So why expose you and your family to it when there are affordable alternatives?

### Average chlorine skin absorption versus oral ingestion

	Skin absorption	Time	Oral absorption	Consumed
Adult bathing	63 %	15 min	27%	1 liter
Infant bathing	40%	15 min	60%	1 liter
Child bathing	88%	1 hour	12%	1 liter

Skin absorption rates are tremendous. People with pools and hot tubs especially take note! These calculations are based on hand skin absorption rates. The hand is a much better barrier against harmful substances compared to other areas of the body, so true absorption rates are significantly higher. American Journal of Public Health 1984 74, pg. 479-484

## Why Mineralizer?

### What chlorine/Bacquacil /Nature 2 salesman won't tell you

- Copper and silver may be toxic to humans. Any metals in high enough concentrations can be toxic. The recommended copper level for a MINERALIZER system is only .3 PPM, well below the EPA maximum of 1.3 for drinking water. Fish can easily live in ionized water, try that with chlorine!
- Chlorine is more forgiving and easier to use than a MINERALIZER! NOT TRUE! Ions are added automatically and, unlike chlorine are unaffected by sunlight and have no effect on your pools pH. Chlorine requires a cyanuric acid additive (in all pool chlorine) to keep it in solution or it will burn off in only hours. Copper and silver ions take weeks to come out of solution.
- Using a MINERALIZER still requires chlorine! True! But no residual of chlorine. It will kill his chemical sales! Unfortunate for him but fortunate for you, your chlorine cost will drop 90+% LIFE GUARD has been in business since 1988 and sold thousands, why do you think you never heard about this product until now?
- Copper/silver ionizers may cause staining! Minerals present in all pool water under the right conditions can cause staining--even in chlorinated pools. Stains develop over months and years and if they do occur are removable with over the counter stain removal agents and brushing. Most vinyl, fiberglass, and new quartz/pebble surfaces are impervious to staining anyway.
- You'll need lots of other chemical additives with a MINERALIZER! The opposite is true, typically chlorinated pools require additional heavy "shocking" and occasional usage of clarifiers and algacide. With a MINERALIZER you need to keep your pH, alkalinity and hardness balanced (same as chlorinated pool) and weekly use low doses of chlorine to "polish" or oxidize the water. That's it. (Some owners of porous masonry pools use stain preventive additives but this is not required).
- Catalytic units (cartridge purifiers) will reduce your chlorine usage 50-80%! True, but you must replace the cartridge every 4-6 months. Add up this cost over the life of your pool and see how much more this will cost you than a MINERALIZER. The cartridge salesman has got you; you have to come back! Also, the water MUST be circulating for a cartridge purifier to work, that means longer more expensive pump running time than a MINERALIZER which leaves a purifying residual of Cu/Ag ions in the pool.
- MINERALIZER systems require more testing than chemical systems. Not true! Since ions are added automatically and burn off slowly, the homeowner simply tests pH and copper (test kit included) every 1-2 weeks. A very low dosage of an oxidizer (preferably chlorine bleach) needs to be added whenever the water has lost its crystal clarity. This is usually once per week in the summer and every 2-3 weeks in the cooler weather.
- Chlorine will keep your water crystal clear! True, but ionized water has unmatched water clarity and quality! Wouldn't you really rather swim in minerals than chemicals?
- Getting your pool chlorinated by a pool service company is the easiest! True, but for only a little effort (testing every 1-2 weeks and adding low level of chlorine) and using an automatic pool vacuum cleaner you can have unmatched water quality. Pool service companies typically treat your pool once per week with very high doses of chlorine gas. Just after he comes you have 6-10 PPM chlorine and the water is very uncomfortable. One week later before he comes again, the chlorine has dropped to a trace and will shortly become algae if it is not treated again.

## PURIFICATION PROCESSES

### What's The Best Water Purification System Available?

Is distillation the best method of water purification available today? The answer is no. It used to be before water became contaminated with modern volatile pollutants. When water purification had to remove only mud, sand, algae and bacteria, distillation was a highly effective purification system. Today, however, both surface and ground waters contain increasing amounts of chemical pollutants. These include the trihalomethanes, which come from chlorine degradation and industrial effluents. These chemicals are proven carcinogens.

Why is distillation ineffective against these pollutants? It is because they are volatile - meaning they evaporate in the presence of heat. Many of these chemicals have a lower boiling point than water. Thus some of these chemicals will vaporize before the water even begins to boil in a distiller.

In former years this was no problem, but today it is a real problem with distilled water. The EPA (Environmental Protection Agency) tells us that they have identified some 700 chemicals now in our water supply nationwide. New chemicals are being formulated each year. We have only to look around us to see some of the places these chemicals are being used. For example, the formulation of plastic requires the use of a certain amount of these volatile solvents. The more sophisticated the manufacturing, the more these chemicals are needed for cleaning the components. Disposing of these chemicals is one of industry's major problems. At present most of them are being dumped out back of the plant, slipped into the sewer or injected into the ground.

There is good reason to believe that it is no longer safe to drink water out of a faucet anywhere unless it has been purified at the faucet level. Even large city plants cannot keep up with the volume or type of pollutants in their source water. Realizing this, large numbers of Americans have turned to bottled water - over one billion dollars worth this year. In addition to this, water treatment gadgets of all kinds are turning up in the marketplace.

Each citizen must decide for him/herself how to obtain a pure source of water to drink and cook with. Distilled water is less than the best option. It is expensive to operate, produces a mixture of chemicals and needs constant cleaning and attention. If our children and we are to survive in this polluted age we need a new solution. It is our opinion that the new solution lies in a combination of a reverse-osmosis membrane and a carbon filter system. We suggest you settle for no less.

### **How About Softened Water?**

Always use your water softener if you have one. There are at least two good reasons. The softener, if working properly, will reduce the calcium and magnesium compounds in the ion exchange process making less work for your reverse-osmosis membrane to do. Actually, reverse-osmosis is a softener too, but much more than a softener. The second reason is that a properly attended to water softener will remove some of the iron that is often found in natural waters. If there is considerable iron, a special iron-cleaning additive will have to be added to the resin tank to prevent the iron from fouling the resin. This pretreatment will greatly increase the life of the R/O membrane. You have known that it is wise not to drink the soft water due to the high sodium content. With a R/O unit to remove the sodium, you can feel comfortable in connecting up both hot and cold water to the softener since the sodium will be removed by the R/O.

### **How Can You Test Your Water?**

We recommend a R.O.P.E. test for all water whether it be from a Reverse Osmosis Unit, from an underground well, or from your tap.

The Reverse Osmosis Proficiency Evaluation (R.O.P.E.) test is a very helpful device to determine just how clean your water is. It can be used to good advantage to pin point any qualities of the source water supply that would interfere with any health program. For all people today, it is comforting to know that there is a readily available method by which their one-time purchase of a water purifier can be checked at any time. Most people prefer to have this test done every 6 months or at least once a year. Many scientists are coming to believe that the water we drink today is more vital to our health than even the food we consume.

What do all the figures really mean? Let's discuss them one at a time:

1. Total Iron: Suggested level is set at .3 parts per million. This is because some people can discern a slight bitterness of the water if it is higher than 0.3. Some natural waters contain much more - 2-PPM, even 25 PPM. It is not harmful - just unpleasant and difficult to keep the bathroom appliances clean. Any amount of iron in water over 0.1 PM is considered deleterious to water filters. City water systems usually do an excellent job of removing iron, but well water is always subject to checking. If your value is above 0.1 PPM, there are ways of controlling it or removing it.
2. Hardness: The hardness values on your ROPE test are very carefully measured since it affords an excellent way of determining how much calcium and magnesium are in the water. Again, neither of these are in any way harmful to the body, but can be deleterious to water filters if too high.
3. Total Dissolved Solids: Includes the calcium and magnesium compounds measured by the hardness determination, but it also includes all other dissolved minerals - toxic and harmless.
4. PH is of course a measure of the water's acidity or alkalinity and should be between 6.5 and 8.5. A pH of 9.0 or more is not good for cellulose water filter membranes.
5. Additional Tests: Depending upon the values received above, and the type of water being evaluated, other tests are occasionally recommended. These are alkalinity, chlorides, etc.

## THE IDEAL DIET

### IDEAL DIET

1. Whole
2. Natural
3. Pure
4. Varied

### EXCLUSIONS

1. White Flour
2. White Sugar
3. Processed Foods
4. Additives and Preservatives
5. Fried Foods
6. Fast Foods

TO INSURE THAT YOU ARE GETTING A PROPER BALANCE OF NUTRIENTS, YOU MUST EAT A WIDE VARIETY OF WHOLESOME, FRESH FOODS ALONG WITH YOUR NUTRITIONAL PROGRAM - EAT AT HOME TO STAY WELL!

## BASIC DAILY MENU

(Always follow the Food Combining Chart and Remember, this is an example of a recommended menu only!)

Breakfast - Have 1 egg either soft or hard boiled or 1 cup of cooked or cold cereal or 1 slice of toast. (Never Skip This Meal!)

Lunch - Always have a salad with raw beets, carrots, tomatoes, parsley, lettuce, sprouts and celery. This meal should include a slice of bread and another starch such as a potato or rice. Otherwise have a protein such as tuna fish or chicken.

Dinner - Always have a salad with raw beets, carrots, tomatoes, parsley, lettuce, sprouts and celery. This meal should include a slice of bread and another starch such as a potato dinner or rice or other starch. Otherwise have a protein such as tuna, chicken, tofu or other protein. (A good example would be a dinner salad, steamed vegetables and a protein or a starch.)

## PRIMARY FOOD GROUPINGS OF A HEALTHY DIET

### Vegetable

Rule of Thumb: The darker the color the more nutritious. Some exceptions would be cauliflower. Always preserve the nutrients in your vegetables by:

1. Eat them raw as much as possible by grating, slicing and dicing them.
2. Steam them.
3. Bake them.
4. If you're not hungry but just want something, you can substitute a vegetable drink made by juicing your own vegetables at lunch or dinner as long as there is variety in the drink. (Example would be V8)

### Fruit

Rule of Thumb: When possible, buy organic, unwaxed and undyed fruits. Do the best and:

1. Buy fresh fruits while they're in season only. Don't buy green fruit. Fruit does not ripen once it's picked off the vine, it only softens.
2. Buy unsulfured, unsweetened dried fruits such as prunes, apricots, apples, dates, etc. and soak them overnight in luke warm water before eating them to stimulate the enzymes so they are easier to digest. (Avoid eating them straight out of the bag!)
3. Buy vine ripened citrus fruit. Green citrus fruit is unhealthy.

### Milk and Dairy Products

Rule of Thumb: If dairy products are tolerated, purchase:

1. Raw unsalted goat's milk and unsalted rennetless goat cheese.
2. Raw cow milk, buttermilk and cream.
3. Yogurt and kfir with active cultures.
4. Raw cottage cheese.
5. Raw, unsalted butter.
6. Raw, rennetless milk cheeses.
7. Soy milk, soy cheeses.

## **Meat, Poultry, Fish, Eggs and Other Proteins**

Rule of Thumb: Purchase only those raised on the free range without antibiotics and hormones. If you prefer to consume these products, do the following:

1. Eat red meat sparingly (beef, lamb, venison).
2. Avoid pork and pork sausages.
3. Avoid raw sushi.
4. When possible, purchase organically raised meats, poultry and eggs.
5. Purchase the freshest fish possible.
6. Use tofu, eggplant and beans as meat substitutes.

## **Seeds, Nuts, Whole Grains and Legumes**

Rule of Thumb: Use pasta sparingly. Avoid eating seeds or nuts out of the bag. Use whole wheat only if tolerated by those individuals without respiratory or Candida difficulties.

1. Eat sunflower, unhulled sesame, pumpkin seeds, etc. Sprouted mung, alfalfa, chia, etc. Soak them overnight in water and blend in blender to make a nut butter to stimulate the enzymes so they are easier to digest. (Avoid eating them straight out of the bag!)
2. Eat almonds, walnuts, peanuts, pine nuts, cashews, pecans, etc. Soak them overnight in water and blend in blender to make a nut butter to stimulate the enzymes so they are easier to digest. (Avoid eating them straight out of the bag!)
3. Purchase whole wheat, oats, millet, buckwheat, brown rice, whole cornmeal, rye and quinoa grains.
4. Purchase whole grain products such as whole grain pastas, crackers, breads and desserts. The healthiest store bought pasta would contain beet, spinach and durum wheat flours.
5. Purchase soy, kidney, black, pinto, navy, lima, lentil and split pea beans. Soak them overnight in water before cooking to stimulate the enzymes so they are easier to digest.

## **Cold-Pressed Vegetable Oil**

The only oil that is recommended is Virgin Olive Oil. This is because it is the only cold or heat processed oil that is not processed with the chemical Hexane.

## **Sweetening**

Rule of Thumb: Most average people cannot tolerate any sweetening on foods as this can cause intestinal gas as well as slow down the digestion process. It is also contrary to proper food combining. If your body can tolerate some sweetening, purchase:

1. Raw Honey.
2. Barley Malt.
3. Date Sugar.
4. Real Maple Syrup.
5. Sweet herbs such as Stevia, Cinnamon, Nutmeg and Ginger.

## **Seasoning**

Rule of Thumb: Stay away from Black Pepper as much as possible as this can irritate the stomach lining. White table salt contains both sodium chloride (chlorinated salt crystals) as well as sugar and is not advised. If your body can tolerate some seasoning, purchase:

1. Garlic (fresh or powdered).
2. Herbs such as onion, basil, oregano, dill, parsley, cayenne/capsicum (red pepper), kelp (has a salty taste), rosemary, etc.

## **Beverages, Desserts**

Rule of Thumb: Use only if it is tolerated.

1. Nut Milk/Protein Shakes using milk, seeds, cashews or almonds. Soak the seeds and/or nuts overnight to stimulate the enzymes and soften them. Blend them in a blender and add spices and flavorings.
2. Fruit Shakes and Natural Ice Cream using cut up and frozen fruit. Use water or milk in blender and blend to the desired consistency.
3. Purchase only unsulfured organic wines. You can tell if they have been treated with sulfites because the label will read "contains sulfites" and the bottle won't usually have a wooden cork. Do not purchase bottles with plastic corks.

## Home Health Tests

The following are tests you can have your clients take themselves at home or you can help them with when they see you for consultations. Begin practicing these tests on yourself to be sure you know how to use them. Find out where you stand with your health and begin working towards better health. Once you feel comfortable with the tests yourself, have your friends and family take them and see how they do. Then move on to clients and help them with their daily health regime.

### Acid/Alkaline Balance

General Test:

Use Nitrazine paper to determine the pH of the fluids of the body. A reading of 7.0 is neutral on a scale of 1.0 to 14.0. The normal pH of the body is slightly acid 6.3 to 6.8.

#### Procedure for Testing:

1. Take urine or saliva sample and test before meals or at least two hours after eating.
2. Check color of test strip with chart supplies with Nitrazine paper and determine the pH.

#### Interpretation of Test:

1. If reading is above 6.8, the body is too alkaline and the person should be put on a diet of more acid-forming foods.
2. If reading is below 6.3, then the person is too acid and should be put on a diet including more alkaline foods.

### Adrenal Gland Function Test

The systolic blood pressure is about 10 mm higher when a person is standing than when he is lying down.

#### Procedure of Testing:

1. Lie down and take the blood pressure.
2. Stand and take the blood pressure.
3. Rest for 6 minutes lying down.
4. Stand up and immediately take the blood pressure.

#### Interpretation of Test:

1. If the blood pressure is lower after standing, suspect adrenal gland weakness.
2. The greater the drop in blood pressure the greater the degree of adrenal dysfunction.

### Allergy Test (food)

Food allergies or reactions occur when a person consumes foods to which the person has an intolerance.

#### Procedure for Test:

1. Take pulse reading after resting for five minutes in order to determine the base number of beats per minutes (normally 70 beats per minute).
2. Consume food to be tested and wait for twenty minutes, and then retake the pulse.

#### Interpretation of Test:

If there is an increase of 12 beats or more per minute over base reading, the person is considered to have an allergic reaction to the food consumed or tested.

### Bladder/Urinary Tract Infections

Simply purchase a "Dipstick" test kit from your local pharmacy and use the test strip to test a urine sample. If the strip changes color, then it is an indication of an infection. Be sure that the urine collection procedure is clean and not contaminated with germs from some other source.

### Blood Flow Test

There are three test points on the legs used to check circulation. These points may be a good indication that there is either sufficient or insufficient circulation.

#### Procedure for Test:

1. Check top of foot by applying light pressure to the skin.
2. Check the point on the inside of the ankle.
3. Check the point behind the knee.

#### Interpretation of Test:

Normally the test points mentioned are points where the pulse in the artery can be felt. If the pulse is not evident, then it is an indication that the artery supplying blood to the leg is narrowed and appropriate steps should be taken.

### **Breast Self Test**

See literature provided by American Cancer Society – men can get breast cancer the same as women and should take the self-test also. Note: Lumps that are stationary, asymmetrical and hard should be given special attention.

### **Cancer**

The type of cell produced in cancer and the type of cell produced in pregnancy has been known for almost a century. Therefore, a home pregnancy test kit can test for the presence of cancer cells in an individual. Naturally, due to the relationship of pregnancy and cancer, you cannot test pregnancy women. Others that you cannot test are women on estrogen replacement therapy, women at time of ovulation, women on birth control pills, individuals using chemotherapy or radiation therapy, individuals showing albumen or blood in the urine, those bedridden or who have lost 15% of his or her weight as well as those with a badly depleted liver. A test on these individuals is invalid and misleading.

#### Procedure for testing:

1. Use a clean, one-gallon glass jug. Do not clean with soap or detergent.
2. Get a home pregnancy test kit from the drugstore that will detect the HCG hormone (E.P.T. by Warner Lambert). Do not use a kit that tests for LH hormone.
3. Collect all urine voided in a 24-hour period in the gallon jug, and keep in a cool, non-refrigerated place. Mix well by shaking. During the waking hours of the collection period (if the person does not have glaucoma or is subject to bleeding) take orally one-100 mg. Niacin tablet every two hours so your skin will flush, indicating that the blood vessels have been dilated.
4. Pour a sample of urine in the cap provided in the test kit.
5. Place 20 drops of urine in the test tube with a dropper being careful not to touch the glass tube with the end of the dropper. Shake for 20 seconds.
6. Add the reagent from the plastic vial or bottle to the test tube. Place the plug in the vial and shake for 20 seconds or more.
7. Place the test tube in the support and let stand undisturbed for 24 hours. Watch for dark brown sediment to appear in the mirror, which is placed under the test tube. Check tube every two hours with a flashlight and magnifying glass. This is helpful since the longer it takes for the dark brown sediment to appear the less involvement there is with cancer.

#### Interpretation of Test:

1. Negative: a translucent, tan fluid with no dark brown sediment after 24 hours is considered negative. No HCG showing in the urine is the same as a negative pregnancy test.
2. Early Detection: A thin, dark brown deposit appearing at any time, and taking many forms such as a hair-thin circle, a thin star or straight line.
3. Advanced Stage: A thick, dark brown ring appearing during the 24-hour period as pictured in the test instructions or any other dark born formation such as a double ring, broad spot, etc.

### **Diabetes Self Test**

There are two types of diabetes: juvenile or insulin dependent diabetes commonly known as Type I; and adult-onset diabetes commonly known as Type II. Type I diabetes should be determined with a blood test kit which can generally be purchased from a local pharmacy. Type II diabetes can be simply checked by testing a person's ability to determine sweetness.

#### Type II Testing Procedure:

1. Fill five glasses with 8 oz. of water. To one glass of water add ½ teaspoon of sugar. To the second, add 1 teaspoon of sugar; to another, add 1-1/2 teaspoons of sugar; to another, add 2 teaspoons of sugar; and, to the last, add 2-1/2 teaspoons of sugar.
2. Mark the glasses with a random code and rearrange the glasses in a random order.
3. Ask the person being tested to taste each glass with a straw and rinse the mouth between testing. Place the glasses in order of their sweetness.

#### Interpretation of Test:

Individuals with type II diabetes will generally not be able to taste less than 1-1/2 to 2 teaspoons of sugar. Those who are normal should be able to distinguish between ½ to 1-1/2 teaspoons of sugar in a glass of water.

## **Digestion**

Most natural health practitioners will agree that most chronic health problems begin with a digestive problem. Lack of hydrochloric acid produces a deficiency that affects the vital assimilation of nutrients necessary for life.

### Procedure for Test:

1. Purchase Nitrazine paper used for testing.
2. Test the first urine in the morning.

### Interpretation of Test:

1. Compare the color on the test strip with the chart supplies by the manufacturer.
2. A reading of 7 is neutral; a reading above 7 indicates alkalinity and a reading below 7 would indicate acidity. If the reading is 6 or above the person can be subject to many illnesses from improper digestion. For optimum health the reading should be between 5.00 to 6.0. Should the reason be too high, the person should supplement with HCL and enzyme tablets.
3. Note: Do not pay any attention to the test taken at any other time of day in determining digestive activity.

## **Heart Function Test**

Check pulse beat the first thing in the morning before arising. This pulse should be under 60 after a night's rest. If the pulse is over 80 the client should be advised to make changes in diet and lifestyle.

## **Stomach Acid Test (for those experiencing heartburn)**

Take a spoonful of apple cider vinegar or lemon when a person is experiencing heartburn. If this makes the heartburn go away, then you need HCL. If the heartburn gets worse, then the person has too much HCL and should not take any HCL.

## **Thyroid Test**

The following test can be used to detect a deficient thyroid. Take the oral daytime temperature with a regular fever thermometer. It should read 98.6. If below 98.6, it could indicate a hypothyroid. Shake down the thermometer before going to bed and place on nightstand. Upon awakening in the morning, and while still in bed, check oral temperature. If 97.6 or below there is a deficient thyroid. Normally, iodine supplementation will normalize the thyroid condition.

## **Ulcers**

See Stomach Acid Test.

