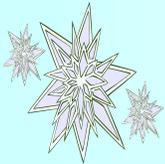


# WATER & MINERALS



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# *All About Water*



## ALL ABOUT WATER



**Water, water, water.** We love it in a drought; hate it when it floods our land. It comes in all flavors, shapes and sizes. It comes in drops, flakes and hail. With salt and without. We drink it, freeze it, boil it, mix it, cook with it, filter it, wash with it, swim in it, make electricity from it, waste it, pollute it, regulate it and even go to war over it. Water is essential to all living things. It is the true essence of life. No one can live without it. It bridges us with nature, keeps our environment green, feeds us, protects our babies and brings us beauty. Water, the 21<sup>st</sup> century product of choice! And it's no longer clean, bountiful or free.

The chemistry of water is most interesting. It's clear, has no calories, no natural taste, mixes with everything and with more than 70% of the human body water (90% of our blood), we are what we drink! And we do love to drink it. "In the United States alone, 54% of the populace regularly drinks bottled water provided in 700 brands by 430 companies." Drinking water has become chic. In fact, "industry experts project that in the next five years or more, bottled water will replace beer as the second largest beverage category – just behind carbonated soft drinks." And we still don't drink enough. Although experts recommend that we drink one-half of our body weight of water in ounces daily (180 lb. = 90 oz.), most humans fail the test including trained health professionals. How much money could be saved in our health care system if hydration and salt levels were part of a medical examination just like taking ones temperature? But who thinks water when they are sick.

*Source: Natural Business, Lohas Journal, July/August 2001, Special Report "Bottled Water," Chris O'Brein*



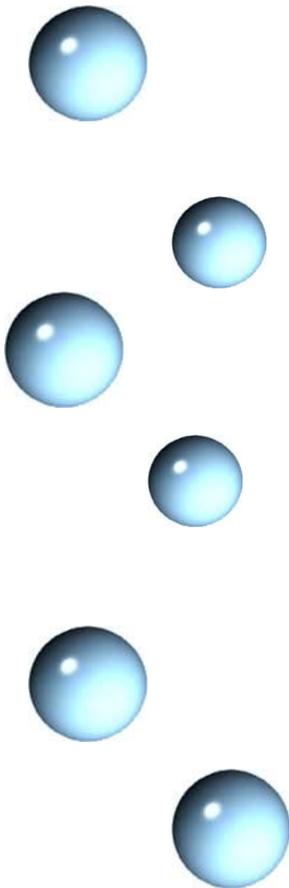
## Water Facts

- ◆ Nothing kills life quicker than lack of water.
- ◆ Under normal situations, the body releases one quart of water daily. You must replace at least this amount of water daily. Two quarts is best. An overweight person needs more water than a thin one.
- ◆ Caffeine, alcohol and many soft drinks are diuretics and have a dehydrating effect on the body. Drink an extra glass of water per drink.
- ◆ Water constitutes the greater part of the fundamental substance (protoplasm) of which animal and plant bodies are made.
- ◆ Water is linked with the moon through the movement of tides and by its moon-like flowing, shape-changing quality.
- ◆ When cooled to its freezing temperature (0°C, 32°F, under standard pressure) water changes to a colorless, crystalline solid (ice).
- ◆ Unlike other liquids, water expands in freezing.
- ◆ When water is heated to its boiling point (100°C, 212°F, under standard pressure) it vaporizes to steam.
- ◆ 99% of water on earth is either salt water or polar ice shields. Amazingly, less than 1% of all available water on the planet is for people, plants, and animals to use to sustain our lives. Every ounce of pollution, every new American, every out of control fire, etc. comes out of this 1%. In the end, our very existence is ultimately connected with the quality of water available to us.
- ◆ It only takes a loss of 1% - 2% of our bodies ideal water content to create dehydration. Warning signs: reduced urination, tiredness, dry skin, mouth and tongue, sunken eyes, and grayish skin. “A loss of 3% of total body water will cause fatigue and 10% is seriously life threatening even for the trained professional football player.” *Source: [www.drbatmanghelid.com](http://www.drbatmanghelid.com)*
- ◆ Less than 15% of “drinking water” is drunk or bathed in. Most goes to flushing toilets, laundry, showers and watering lawns. America is the world’s largest consumer of water.

- 💧 Water is not free. Add the tax cost to treat it, filter it, store it, distribute it and maintain it, and then add the cost of water bills, water treatment systems, filters and bottled water consumption. Already, “76% of Californians rely on bottled or filtered water” and the cost will only go up. *Source: Special Report “Bottled Water”*
- 💧 People with the worst health drink the least amount of water and use the most alcohol, caffeine and nicotine.
- 💧 Cold water is absorbed into the system quicker than warm water.
- 💧 Salt and water are friends. Ideally, use  $\frac{1}{4}$  teaspoon of salt for every quart of water you drink. As long as you drink enough water, you can safely use salt. *Source: [www.drbatmangheli.com](http://www.drbatmangheli.com)*
- 💧 Environment of an unborn baby is water and salt.
- 💧 Salinity of the water outside the cells of our body is the same as the ocean.
- 💧 Water and salt is vital for balancing the sugar levels in the blood, a needed element in diabetics.
- 💧 The United States uses three times as much water a day as the average European country, and many, many times more water than most developing nations.
- 💧 Water and salt is vital for the clearance of the lungs of mucus plugs and sticky phlegm, particularly in asthma and congestion of the sinuses.
- 💧 Osteoporosis, in a major way, is a result of salt and water shortage in the body.
- 💧 Water mixes with just about anything and can be restructured and ionized. Water has its own special intelligence.



# *Types of Water*



## TYPES OF WATER



The USA distinguishes between several types of water, each with its own definition.

### Drinking Water

Drinking water is bottled and obtained from an approved source. It has been filtered (e.g. with activated carbon or particulate) and has been treated with ozone or an equivalent disinfection process.

Usually, spring waters with Total Dissolved Solids between 50 mg/liter and 500 mg/liter are commonly known as Drinking Waters.

### Natural Water

Natural water is bottled water that was obtained from an underground spring or well. It may not come from a municipal or public water source. It is not blended with other water and no dissolved solids have been added or removed. Disinfections and filtration may still be used though.

### Spring Water

The FDA regulates Spring Water as follows:

*Spring Water must be derived from an underground formation, from which water flows naturally to the surface of the earth. No particular physical/chemical properties are required other than those normally applied for drinking water.*

Spring Water is also categorized according to the type of aquifer from which they derive their water. As such, there are two general types, water table and artesian springs.

Spring Water may be classed in many other ways, including chemical characteristics if, for example, their waters are salty or sulfurous; by temperature – non-thermal or thermal, and thermal springs may be “warm” or “hot”; or by the type of opening through which the water surfaces – seepage, tubular and fracture.

### Well Water

Water that is bottled from a hole drilled, bored or otherwise constructed in the ground that taps the water of an aquifer.

### Purified Water

Purified water is bottled water that has been purified by means of distillation, deionization, reverse osmosis or other suitable processes.

- **Distillation:** The water is heated until it vaporizes. After condensing it is free of any dissolved minerals.
- **Deionization:** Water is passed through resins, which remove most of the dissolved minerals.

**Reverse Osmosis:** High pressure forces the water through membranes, which remove about 90% of dissolved soluble's.

## **Club Soda and Seltzer Water**

They are not considered bottled water, but rather soft drinks.

## **Mineral Water**

The FDA regulates Mineral Water as follows:

*Mineral Water is Spring Water that contains at least 250 mg/liter (or 250 parts per million) of Total Dissolved Solids (TDS). This property must be verified through a lab test whereby a liter of water, evaporated at 180 degrees C. should leave a residue of minerals and salts. Up to 249 mg/liter it is classified as 'Spring Water.' From 250 to 500 mg/liter, it is considered 'Low Mineral Content' or Light Mineral Water and above 500 mg/liter, normal or High Mineral Content.*

Usually, only waters above 1000 mg/l are called 'Mineral-High Mineral Content.'

Perhaps the most interesting of all waters is mineral water. Although there are limited scientific studies documenting the effect of mineral waters on health and the USA prohibits the advertising of mineral water as beneficial for ones health, many believe that future medical breakthroughs will often evolve from the study of this exciting field especially in eastern and western Europe where celebrating the positive effect of mineral waters is legendary and often integrated into national health systems.

Mineral waters are always free of any calories, sugar or artificial ingredients and with the possible exception of mineral waters with high magnesium (Mg) content, which can cause mild diarrhea, there are usually no adverse effects from drinking mineral water or soaking in its grace.

Mineral waters contain various inorganic minerals and trace elements in a colloquial or a suspended nature. That is, while mineral water may look clear to the naked eye, the individual finely divided minerals remain dispersed throughout the natural water with precipitation capability.

Mineral waters are usually measured as the residues (what remains) when a liter of water is evaporated at 180 degrees C. While mineral waters greatly differ in composition and may contain many different combinations of mineral salts, a general guide to understanding mineral waters includes:

- Acidity (pH) of Water
- Total Dissolved Solids (TDS) - This indicates how many minerals and other solvents are contained in one liter of water. Technically, these are the dry residues that remain after the water has been heated to 180 C.
- Hardness of Water (Calcium Carbonate – CaCO<sub>3</sub>)
- Level of individual inorganic mineral. Most common:
  - Arsenic (As)
  - Boron Dioxide (BO<sub>2</sub>-)
  - Bromine (Br-)
  - Calcium (Ca<sup>++</sup>)
  - Chloride (Cl-)
  - Cobalt (Co)

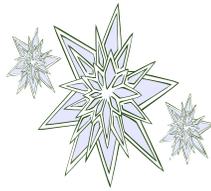
- *Carbon Dioxide (CO<sub>2</sub>)*
- *Chromium (Cr<sup>-</sup>)*
- *Copper (Cu<sup>++</sup>)*
- *Fluoride (F<sup>-</sup>)*
- *Germanium (Ge)*
- *Hydrogen Carbonate (HCO<sub>3</sub><sup>-</sup>)*
- *Iodine (I)*
- *Iron (Fe<sup>++</sup>)*
- *Lithium (Li<sup>+</sup>)*
- *Magnesium (Mg<sup>++</sup>)*
- *Manganese (Mn<sup>+</sup>)*
- *Nitrate (NO<sub>3</sub><sup>-</sup>)*
- *Potassium (K<sup>+</sup>)*
- *Rubidium (Rb)*
- *Silica (SiO<sub>2</sub>)*
- *Sodium (Na<sup>+</sup>)*
- *Strontium (Sr<sup>++</sup>)*
- *Sulphate (SO<sub>4</sub><sup>--</sup>)*
- *Zinc (Zn<sup>++</sup>)*



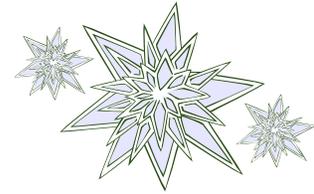
## **Mineral Water Facts**

- Mineralization of a water changes only slightly over time.
- Fastest growing bottled water in the world. Per capita consumption of mineral water (liters/year) is highest in Italy (155), Mexico (136), France (112), Germany (101), Spain (98) and Switzerland (95). America's consumption lags way behind.
- Manufactured mineral waters are growing in popularity especially waters designed for maintaining wellness or treating a specific medical condition. The Eniva Corporation out of Minneapolis, Minnesota has created a unique process to ionize very small water-soluble minerals to enhance the probability of increased bioavailability (mineral penetration within individual body cells).
- Soaking in mineral waters provide great benefits to humans and animals for both external (skin, mucous membranes, etc.) and internal health challenges (arthritis, pain management, relaxation, swelling, etc.). It appears that individual minerals are absorbed through the skin and into the body's blood chemistry for travel to all organs, tissues, joints and cells. What your body doesn't use, it removes. Experts also suggest that minerals may have the ability to adhere to toxins within the body, which are then released back into the mineral water.
- The emerging new fields of cellular medicine and functional medicine hold great promise for understanding the true healing effects of ingested and absorbed mineral therapy.

# *Mineral Springs*



## **All About Minerals**



### ***How many minerals do our bodies produce naturally?***

NONE. We receive all our minerals from the water we drink and the foods we eat. The human body is composed of 4%- 5% minerals (electrolytes). These are elements that are essential to our bodily functions.

### ***Why do we need minerals in our body?***

Our human water bodies require the essential minerals to maintain homeostasis – a balance and a wellness of all the organs, glands, tissues, and cells in the human body. Longevity is scientifically associated with our body's ability to receive its required level of minerals. Each mineral in our body has its own specific role in maintaining homeostasis.

Through all of this, it is essential that we understand that health is maintained and healing is achieved through BALANCE, i.e. a balanced distribution of water and minerals in our human water bodies.

*Dr. Joy Dunkin, author of the book titled "Healing Waters Sacred Springs"*

### ***Can we depend on getting all of our required minerals from food?***

Absolutely not. The combined factors of nutrient depleted agricultural soils from decades of use with synthetic fertilizers forcing crops to grow rapidly without regard to mineral absorption results in vegetables, grains and fruits with compromised mineral content. Yes, we are what we eat and mineral absorption is no exception.

Here's what some of the experts are saying:

- ~ It becomes clearly evident that keeping a mineral balance in every tissue, fluid, cell and organ in the human body is a key to maintaining human health – *Minerals, Trace Elements and Human Health (1999)*
- ~ Your mineral needs are even more important than your vitamin needs since the human body cannot make minerals – *Dr. Henry Schroeder, MD, PhD*
- ~ In the absence of minerals, vitamins have no function – *Dr. Mathias Rath, MD*
- ~ Every sickness can be traced to a mineral deficiency – *Dr. Linus Pauling, PhD, Winner of two Nobel Prizes- Chemistry and Peace*
- ~ Scientific study has shown minerals are absolutely essential to life on this planet – *Dr. Alexander Schouss, PhD*
- ~ 99% of the American people are deficient in minerals, and a marked deficiency in any one of the more important minerals actually results in disease. The alarming fact is that foods, fruits, vegetables, and grains now being raised on millions of acres of land no longer contain enough certain

- needed minerals and are starving us, no matter how much of them we eat – *Rex Beach, Modern Miracle Men*
- ~ Minerals in drinking water are more easily and better absorbed than minerals in food – *Dr. John Sorenson*
  - ~ While minerals received from nutritional supplements can be of some help, vitamins and minerals in pill form are only 10% absorbed by the body – *Physician Desk Reference (PDR)*

***Is there any special science to study the therapeutic power of mineral water?***

Yes. The art and science of balneology is the scientific study of the therapeutic benefits of naturally occurring mineral water. Throughout Japan and Western and Eastern Europe (in particular Russia) balneology and hot springs therapy is part of routine medical care given by licensed doctors for the treatment of a wide range of conditions and utilizing mineral preventative medicine is widely recognized, encouraged and often incorporated into nationalized health insurance systems.

Balneotherapy is a natural approach to health and healing that uses hot spring water, gases, mud, and climatic factors (such as heat) as therapeutic elements. In addition to bathing, modalities such as hydrotherapy, mud therapy, physical therapy, massage, steam baths, physical exercises, inhalation of water vapor, and drinking mineral water are often used as part of a complex therapy for both health preservation and treating disease.

Over the past four centuries, the science of balneology has evolved into a medical specialty in Europe and Japan, where special courses in balneotherapy are offered to both physicians and nurses by major medical schools. Doctors believe that thermal springs facilitate healing in a number of important ways:

- Bathing in hot or warm springs gradually increases the temperature of the body, thus killing harmful germs and viruses.
- Thermal bathing increases hydrostatic pressure on the body, thus increasing blood circulation and cell oxygenation. The increase in blood flow also helps dissolve and eliminate toxins from the body.
- Hot or warm springs bathing increases the flow of oxygen-rich blood throughout the body, bringing improved nourishment to vital organs and tissues.
- Bathing in thermal water increases body metabolism, including stimulating the secretions of the intestinal tract and the liver, aiding digestion.
- Repeated hot or warm springs bathing (especially over a 3- or 4-week period) can help normalize the functions of the endocrine glands as well as the functioning of the body's autonomic nervous system.
- Trace amounts of minerals such as carbon dioxide, sulfur, calcium, magnesium, and lithium are absorbed by the body and provide healing effects to various body organs and systems. These healing effects can include stimulation of the immune system, leading to enhanced immunity; physical and mental relaxation; the production of endorphins; and normalized gland function.

- 
- Mineral springs contain high amounts of negative ions, which can help promote feelings of physical and psychological well-being.
  - The direct application of mineralized thermal waters (especially those containing sulfur) can have a therapeutic effect on diseases of the skin including psoriasis, dermatitis, and fungal infections. Some mineral waters are also used to help the healing of wounds and other skin injuries.

### **Indications for Balneotherapy**



Over the several hundred years during which the science of medical balneology has developed, physicians have been able to identify the health conditions that can best be treated by healing springs. At the same time, they have developed specific protocols for safe and effective treatment. The following list of indications for balneotherapy is based on the research of Yuko Agishi, MD, Professor Emeritus at the Hokkaido University School of Medicine and Director of the Arima Onsen Hospital near Kobe, Japan.

#### **Chronic Diseases**

Chronic rheumatic diseases  
Functional recovery of central and peripheral neuroparalysis  
Metabolic diseases, especially diabetes, obesity, and gout  
Chronic gastrointestinal diseases  
Chronic mild respiratory diseases  
Circulatory diseases, especially moderate or mild hypertension  
Peripheral circulatory diseases (affecting the hands and feet)  
Chronic skin diseases  
Psychosomatic and stress-related diseases  
Autonomic nervous system dysfunction  
Vibration disorder (a middle ear disorder affecting balance)  
Sequelae of (conditions resulting from) trauma  
Chronic gynecological diseases

#### **Rehabilitation**

Sequelae of cerebrovascular disorders  
Chronic rheumatic diseases  
Sequelae of traffic accidents and sports-related injuries  
Spinal paralysis  
Treatment paralysis  
Treatment after cerebral surgery or orthopedic surgery

#### **Before and After Surgical Procedures**

Hip replacements  
Knee surgery

#### **Preventive Medicine**



Prevention of adult diseases  
Prevention of occupational diseases  
Building up physical strength and general immunity



## The Science Behind Primary Minerals in Mineral Springs

**C** **ALCIUM** is needed by all tissues in the body. It is crucial for nerve conduction, muscle contraction, and heartbeat. Calcium plays a vital role in the transduction of nerve impulses throughout the body. It also has been shown to affect pressure within blood vessels.

Calcium performs numerous vital functions throughout the body. It plays a role in facilitating the secretion of certain hormones and hormone releasing factors, and promotes cell membrane permeability, making it easier for the passage of compounds in and out of cells.

Calcium helps prevent cramps brought on by exercise by avoiding lactic acid build-up. It ensures the steady functioning of the cardiovascular system. Calcium also plays a vital role in the transduction of nerve impulses throughout the body.

Calcium is essential for human life. It is essential for the health of muscle in the body, promoting normal muscle contraction and relaxation. Calcium combines with phosphorus in the body to help form the hard, crystal-like substances that create the latticework providing strength for bones. It is also crucial in the process of activating multiple other enzymes in the body to promote normal functioning.

Calcium is the most abundant mineral in the body, with the largest stores being found in teeth and bones. Calcium also performs numerous vital functions in the body, including fat and protein digestion, energy production, nerve transmission and assists in the absorption of other nutrients.

**C** **HLORIDE** helps regulate fluids in and out of the body cells, it facilitates the digestion of food and the body's absorption of nutrients, and it helps transmit nerve impulses to and from the brain.

While drinking mineral water rich in sodium chloride is not recommended for those on low-sodium diets, salt waters are often recommended for bathing because they possess a variety of medicinal properties. According to Dr. Sigmund Forster, saline waters (ideally containing 0.5 % to 3 % sodium) at a temperature of 34-40°C (93-104°F) are indicated for treating rheumatic disorders, arthritis, central nervous system and peripheral nerve diseases, and posttraumatic, orthopedic, and postoperative disorders as well as gynecological diseases. Normally, three to five 10- to 25-minute baths a week are recommended, for a total of 15 to 20 treatments per cure.

**M** **AGNESIUM** plays a key role in the production of cellular energy and is involved in almost every biologic process. Magnesium and calcium work together in the body for the formulation of adenosine triphosphate, the key form of biologic energy.

Magnesium is essential for every major biological process. It is necessary for the metabolism of glucose, production of cellular energy, and the synthesis of nucleic acids and proteins. Magnesium's role in cellular reproduction is key in maintaining healthy levels of immune-related cells during an immune challenge.

Magnesium is also important for the electrical stability of cells and affects the muscle tone of blood vessels, causing them to be in a more relaxed state.

Magnesium plays a critical role in converting carbohydrates to energy, controlling heartbeat, and activating enzyme systems and muscular contractions. Magnesium is also needed for a cell to make ATP, the molecule that contains the energy of the body.

Magnesium is not a trace mineral but a major entity in our bodies. It is necessary for over 300 enzymatic reactions and is biologically interlocked with calcium

metabolism. Magnesium is vital for making sure that calcium is used properly by the body. Between 50-60% of magnesium in the body is found in bone. It also plays a key role in the synthesis of proteins, which are components of many body structures such as cartilage.

Magnesium also plays an important role in the maintenance of the electrical and physical integrity of heart muscle. Calcium and magnesium are both needed in proper amounts to maintain healthy balance between these minerals in the body, both of which have effects on blood vessels and the heart.

**M** **ANGANESE** possesses antioxidant properties and is involved in protein, fat, and energy metabolism. Manganese is also a component of the immune-related enzyme, superoxide-dismutase.

Manganese is involved in protein, fat, and energy metabolism, although its primary role is as an antioxidant. Manganese deficiency in animals does lead to decreased glucose tolerance, suggesting its role in body homeostasis.

Manganese is an essential part of biochemical reactions that affect bone, cartilage, brain function, and energy. It makes up part of the molecules known as mucopolysaccharides. These molecules are used to form collagen, the strong, healthy, fibrous connective tissue that help to build tissues throughout the body, including cartilage and bone.

**P** **OTASSIUM** is necessary for adequate muscle contraction and rapid transmission of nerve impulses through the body. Proper conduction of nerve impulses is essential for smooth and coordinated movement of muscle as related to motion. Potassium is essential for supporting nerve impulses, maintaining acid-base balance, and converting blood glucose to glycogen (stored carbohydrates that make up the body's priority fuel reserves). It also helps widen the blood vessels during exercise, thereby increasing blood flow to help carry away heat.

**S** **ODIUM** is an electrolyte that helps maintain water balance in the body. Due to its electrical charge, sodium passes back and forth between cell membranes, carrying nutrients (such as glucose) in, and carrying waste products out. It also plays a key role in regulating blood pressure and heartbeat.

**S** **ULFUR** is an essential component of three vitamins: biotin, pantothenic acid, and thiamin. Both thiamin and biotin play an important role in energy metabolism. It is also a part of coenzyme A, contributing to the activation of carboxylic acids and the synthesis of hormones. Sulfur is also necessary for insulin production. Sulfur is found in all connective tissue and skin, and is vital for the growth of hair and nails. Since it forms covalent bonds with carbon, it may play a large role in maintaining the health of tissues and organs in the body. Further, its constituents play a role in activating hormones in the body and act as potent antioxidants.

*Source: Healing Springs: The Ultimate Guide To Taking The Waters, Nathaniel Altman*

# Health Benefits of Mineral Springs

## Natural Wellness

Soaking in the waters of mineral springs is an excellent way to reduce stress and strengthen the body's overall functioning, leading to a higher level of personal wellness.

Soaking helps to:

- *Raise the body's temperature* (warms the body), which helps to:
  - increase blood circulation, which improves the delivery of oxygen and nutrients to the body's organs, tissues and cells; and
  - filter and eliminate toxins through increased perspiration, bowel movements and urination
- *Increase the hydrostatic pressure* on the body, which helps to increase blood circulation and toxins from the body.
- *Increase body metabolism*, which includes stimulating the secretions of the intestinal tract and the liver, aiding digestion.
- *Normalize functions of the endocrine glands* (especially over 3 to 4 weeks of daily soaking), such as the pituitary, thyroid, pineal, parathyroid and adrenals.
- *Normalize the functioning of the body's automatic nervous system.* This especially helps regulate the functions of the thymus gland and the spleen, which helps the immune system to function properly.
- *Absorb small amounts of inorganic minerals*, which provide healing effects to various body organs and systems and are essential for good nutrition.
- *Provide healthy, youthful skin.*

*Source: Healing Springs: The Ultimate Guide To Taking The Waters, Nathaniel Altman*

## Therapeutic Benefits

### ◆ Skin Care

#### Healthy Skin

The human skin is the largest organ in the body (about 16% of our body weight) and covers an area of 20 square feet! Our skin has many different protective and metabolic functions that keep our body stabilized.

#### **We have two skin layers:**

The outer layer, the epidermis, consists of rows of cells about 12 to 15 deep (about as thick as a piece of paper). This top layer has only 10% - 15% moisture and is comprised mostly of dead cells that are constantly being replaced by new cells (every 21-40 days). When the skin is subject to constant friction, it responds by thickening, creating a callus. The epidermis works hard to prevent

the penetration of external substances into the skin and the loss of water from the skin.

The inner layer, the dermis, is a spongy, leathery area (about 1 to 2 millimeters thick or 12 sheets of paper) consisting mainly of collagen (protein-like) connective tissue. The dermis is joined to the epidermis by nerves, blood vessels, hair follicles (transmit reception of touch), sebaceous glands (helps waterproof skin) and sweat glands (helps cool skin and keep the body temperature constant).

Our bodies consist of 70% water. Therefore, healthy skin requires proper hydration and protection against the elements. Dry skin produces cells of poorer quality and skin that does not function correctly. Skin ages mainly due to the gradual and constant loss of its liquid content. In other words, it gradually dries out.

In order to be able to penetrate into the skin, a substance must be recognized by the body and small enough in molecular size to penetrate the skin. Although highly porous, the skin does a magnificent job keeping out unwanted substances such as bacteria, viruses, and harmful toxins.

There are many types and colors of human skin. The sebaceous glands within the skin produce the sebum (mixture of fatty acids and other different substances), which is secreted on the skin through the pores. Hyperactivity of these glands causes oily skin, and hypoactivity causes dry skin. Acne is a condition connected to the activity of the sebaceous glands. Damaged skin requires time to renew since the sebum flows slowly to the outer layers of the skin. A measure of the acidity or alkalinity of a substance is pH. The concentration of the fatty acids on the skin (sebum) produces the acidic covering. This is a natural sheath against inflammation, winds and cold/drying conditions. The natural bacteria of the skin can function in a pH level from 4.5 to 7. A neutral pH level of seven is optimum for skin health.

### **A Natural Skin Healer**

The warm waters of mineral springs hold the potential of being the most magnificent natural skin healer, the perfect vehicle for restoring vitality to aging cells. The highly mineralized water meets all the tests for effectiveness:

- *Need.* Our bodies are composed of 4% - 5% minerals. Mineral deficiency results in problems.
- *Size.* High concentration of small, suspended inorganic minerals that penetrate into the skin.
- *Skin Rejuvenation.* Helps to restore skin cells' metabolic capability and responsiveness.
- Helps with toxic removal and blood supply (cellular oxygen flow).
- Works externally and internally.

## **Damaged Skin**

Bathing in mineral springs (primarily because of the sulfates, sodium and chlorides in the water) can have excellent therapeutic effects for individuals with chronic diseases of the skin, including psoriasis, dermatitis, eczema, and fungal infections. **Goal: Help the body to heal itself.**

**While the time one can safely spend soaking in the water will depend on their own physical condition, it is recommended that the average individual immerse into the water at neck level for approximately 40 to 60 minutes two to three times a day. Start slow and gradually increase exposure.**

Soaking in warm water mineral springs produces mechanical, physical and chemical effects on chronic skin diseases. For example, one's body in the water weighs only a fraction of its actual weight, thus helping to dissipate pain. The water can also be used to influence heat transmission and draw out the body's own water molecules to promote cleansing of tissues.

*Source: Healing Springs: The Ultimate Guide To Taking The Waters, Nathaniel Altman*

In addition to chronic diseases of the skin, therapeutic bathing in mineral springs will help:

## **Burns**

Burns caused by exposure to excessive heat, chemicals or the elements in general is part of life. The good news is that most burns are minor in nature and only require time and good hygiene to heal with, hopefully, only minor scarring. Unfortunately, over 200,000 persons are severely burned each year with 5% of the burns deemed either extensive or deep.

Warm water mineral springs is very effective in accelerating the healing process with minor burns and offers hope with severe burns by helping to:

- Soften scar tissue and promote skin elasticity;
- Reduce inflammation and infection;
- Promote freer movement of the tendons and connective tissue;
- Improve skin microcirculation and possibly increase the number of blood vessels in the scarred areas; and
- Reduce the cessation of itch and pain or the sensation of contraction.

## ***Tips:***

- *The earlier that treatment begins after injury, the more encouraging the potential results*
- *Adjunct treatments such as massage and mud packs accelerate results*
- *Keep a bottle of Fountain of Youth Mineral Water in your medicine chest in case of emergencies*

## **Cellulitis and Excessive Swelling**

Cellulitis primarily affects women and involves a modification of skin tissue caused by circulatory problems, retention of water and metabolites and accumulation of fat in adipose tissue, primarily in the legs.

Proposed Treatment:

- Drinking 500 – 750 milliliters of mineral water in juice on an empty stomach daily
- Underwater massage
- Massage Therapy
- Mud Packs applied to the affected areas wrapped in cloth

*Source: Healing Springs: The Ultimate Guide To Taking The Waters, Nathaniel Altman*

Soaking in warm water mineral springs at neck level for 45 minutes two to three times a day will produce excellent results for **excessive swelling** especially if treatment is for seven consecutive days or more.

### ◆ **Oral Health**

In healthy situations, one's naturally produced mucus lubricates and cleanses one's mouth, gums and throat to prevent oral disease.

Mineral springs can help maintain positive oral health and help heal diseases of the mouth, gums and throat. This includes gum disease, canker sores, inflammation around a tooth, sore throats, inflammation and sores of the tongue and certain growths. Spa treatment for mouth and gum diseases has been part of the medical mainstream in many European countries.

Mouth washing and gargling with undiluted Mineral Spring water is highly recommended for both maintenance of mouth and gums and treatment of affected areas.

### ◆ **Nasal Health**

In healthy situations, one's naturally produced mucus lubricates and cleanses the nasal membranes. This prevents congestion, inflammation, acute or chronic infection and overall leads to normal breathing. Unfortunately, in today's hostile environment of polluted air, an estimated 35 million Americans (1 out of 7) suffer from sinus problems. In fact, it is one of the most common complaints of people seeing a doctor and is the number one complaint in many areas with cold, damp climates. Chronic sinusitis is hard to treat because the causes can vary so widely. Typical causes can be bacterial, fungal or viral infection, allergy, anatomic defects, rapid changes in temperature or air pollution. Chronic sinusitis often makes

people feel miserable in their daily lives. It impacts ones relationship with others, results in lost time from work, and costs money.

When the sinuses become inflamed and/or infected, the nasal mucosa swells and thickens. The mucus in the sinus cavities thickens and often becomes yellow or greenish. Because the openings from the nose into the sinuses are very narrow, they quickly become blocked trapping the mucus inside the sinus. Trapped mucus causes sinus pressure and can easily become infected leading to acute sinusitis. Symptoms of sinusitis may include:

- Nasal congestion
- Difficulty breathing through clogged nasal passages
- Pressure/pain behind the eyes and nose
- Postnasal drip
- Loss of sense of smell or a foul odor in the nose
- Nasal discharge
- Headache or even toothache

Typically, a health professional will examine the patient and prescribe all or some of the following medications for control of chronic sinusitis (Goal: Relieve pain by restoring drainage):

- Oral and/or nasal spray or drop decongestant to relieve congestion
- Over-the-counter or prescription antihistamine to control allergy attacks
- Allergy shots to increase tolerance to allergy-causing substances
- Nasal saline spray for maintenance
- Mucus-thinning medication
- Steroid or non-steroidal nasal spray to reduce the swelling of the mucosa and open the nasal passages

When the sinuses become infected, the physician will typically prescribe an antibiotic to kill the bacteria (antibiotics are not effective against viral or fungal infections) for 10 to 14 days and may add or increase the dosage of one of the drug therapies already mentioned.

If the symptoms of headache, pressure and difficult breathing persist, the doctor may order a CT (CAT) scan of the sinuses to determine the extent of the disease.

If extensive disease is present, an examination will be made to ensure that there are no structural problems that need to be corrected (small growths in the nose called polyps), injury of the nasal bones (deviated septum) or dental problems (TMJ Syndrome). For complicated conditions, Endoscopic Sinus Surgery, or ESS, may be recommended.

A referral to a Natural Health Practitioner for sinus problems would encourage active participation of the patient in treatment with a heavy emphasis on prevention:

- Daily diary of activities to spot trends
- Daily hot shower
- Morning and night use of Netti Pot (nasal douche)

- Liberal use of nasal saline spray
- Keen awareness of negative environmental conditions
- Cool mist humidifier at night during winter months with window open for fresh air if needed
- Careful awareness of diet:
  - Limited caffeine;
  - Limited alcohol, especially red wine;
  - Limited sugar;
  - Limited wheat and dairy products, especially during an acute attack; and
  - High intake of water
- Daily exercise program
- Use of stress management techniques
- Daily vitamin/herbal supplements and/or homeopathic medicines
- Keen awareness of allergic tendencies
- Knowledge of all drugs taken for both acute and maintenance conditions; understanding the danger of routine antibiotic use
- Careful examination by qualified medical professionals to ensure that no structural abnormalities are causing problems
- Routine use of natural health care services especially acupuncture and/or acupressure
- Training in the self-use of acupressure techniques to relieve sinus pressure

The healing waters of mineral springs can help sinus sufferers and maintain positive nasal health and excellent for nasal cleansing and lubrication of mucous membranes. Use undiluted mineral water morning and night as a safe and effective nasal douche.

### ◆ ***Joints/Muscles/Lower Back Pain***

Spa therapy has been used for the relaxation and healing of joints and muscles since the times of the Ancient Greeks. So, it comes as no surprise that Warm Mineral Springs has long been celebrated as a sacred haven for individuals with joint and muscle diseases. In fact, it may be the number one reason why people from all over the world travel annually to the magical waters.

While treatment protocol and success will vary by individual, all guests with joint and muscle diseases experience reduced pain, increased joint mobility, reduced inflammation and, for many, improved well-being while soaking in the waters of warm water mineral springs.

#### ***Lower Back Pain***

Lower back pain mostly affects adults and is considered a form of rheumatism (acute and chronic soreness, muscle stiffness and pains in the joints). Lower back pain is one of the number one reasons people see a doctor and why they

miss work. Lower back pain is often treated with a variety of medications to relieve pain and inflammation, such as analgesics, narcotics and nonsteroidal anti-inflammatory drugs known as NSAIDS. Lower back pain can lead to serious emotional issues including drug addiction and suicide.

The goal of treatment for lower back pain sufferers soaking in warm water mineral springs is to improve the overall health status of the back (reduce pain, increase mobility, reduce inflammation) and **reduce drug consumption**. It is highly recommended that treatment include adjunct therapies especially aerobic exercise in the waters, massage, acupuncture and mud packs. Soaking in Warm Mineral Springs is also useful for treating postoperative conditions involving back pain.

### ***Osteoarthritis***

Osteoarthritis is a painful degenerative disease affecting the joints. It involves the destruction of cartilage (which serves as a “shock absorber” to the joint) and overlapping of bone and the formation of spurs. Osteoarthritis is the number one form of arthritis that affects 75% of the population over 60 years of age.

The goal of treatment for individuals with osteoarthritis soaking in warm water mineral springs is to reduce pain, relax muscles, increase joint motion, increase well-being and reduce drug consumption.

**It is highly recommended that treatment last for 2 – 4 weeks and includes adjunct therapies especially aerobic exercise in the waters, massage, acupuncture and mud packs.**

Scientists studying the power of mineral waters to heal patients with osteoarthritis suggest that the warm water, high level of chloride and sulfates in the water and other known factors may interfere with diuresis and blood dilution. In addition, the resulting anti-inflammatory action attributed to the drainage of extra cellular fluids and reduced tension of the structures and analgesic and relaxant actions caused by the release of analgesic substances by the body.

Patients with more serious forms of arthritis such as rheumatoid arthritis and psoriatic arthritis can also realize positive results from soaking in warm water mineral springs.

*Source: Healing Springs: The Ultimate Guide To Taking The Waters, Nathaniel Altman*

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## ◆ ***Other Health Problems and Medical Conditions***

According to the art and science of balneology, mineral waters are used to treat many other medical conditions including:

### ◆ *Gastrointestinal Problems*

Mineral waters have long been used for treating a wide range of gastrointestinal disorders including problems with the stomach and duodenum, gastroenteritis, ulcer and constipation.

### ◆ *Liver, Kidneys and Urinary Tract*

The use of mineral water to treat diseases of the liver, kidneys and urinary tract is among the oldest forms of spa therapy. Waters containing bicarbonate, sulfates, chlorides and sodium facilitate the healing of a variety of liver complaints including hepatitis, and also help improve liver and gallbladder function such as the synthesis of bile by the liver and its release by the gallbladder into the duodenum, or small intestine, which aids digestion.

### ◆ *Heart and Circulatory Diseases*

### ◆ *Gynecological Problems*

### ◆ *Anal Problems*

### ◆ *Glandular and Metabolic Disorders*

### ◆ *Respiratory Problems*

### ◆ *Other Health Problems:*

- Cancer
- Migraines
- Depression
- Nervous System Disorders
- Foot Health
- Ear Diseases
- Detoxification
- Hair Loss

*Source: Healing Springs: The Ultimate Guide To Taking The Waters, Nathaniel Altman*

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