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# ENERGY AND AGING

## how your dog can live long and prosper

by Noa Martinsen and Julie Casper L Ac

**T**hinking about aging can be worrying. We feel sadness when we think about the passing of our beloved dog. Typically, a dog's lifespan is much shorter than their human caretaker, so we see many common (though not necessarily normal) signs of aging much more quickly than we might see in ourselves. We watch as disease and degeneration progressively deplete our dog's health and happiness.





**N**ot too long ago this wasn't the case. Before the industrialization of the food supply, unnatural diets, sedentary lifestyles and environmental toxicity, aging was admired.

Growing older meant more wisdom, knowledge, skill, abilities and an overall contentment with one's life - the golden years. Truly healthy senior dogs exhibit these special characteristics. This is beautiful to observe and be a part of.

## aging gracefully

Our dogs can enjoy the contentment of becoming a wise, admired elder. This can be realized simply through appropriate nutrition and lifestyle choices, toxin management and - most importantly - love.

A senior dog whose biochemistry is optimized can experience their golden years as a distinguished elder. And we can enjoy their wonderful companionship for many, many years to come.

The minerals in our bodies determine the biochemical environment in which our organs must work. They provide the cells with the raw materials for adjusting the positive and negative charge of the cell membrane, and thus, the flow of energy. The more favorable the mineral environment is in your dog's body, the better their organs will function, and the more energy they will have.

Premature aging, fatigue, and disease are often the result of biochemical dysfunction resulting from undernutrition, chronic stress, and exposure to environmental toxicity. This aging process can be slowed and managed fairly easily, because nutrition can be improved, and toxins and stress can be mitigated.

## the biochemistry of premature aging

The basic unit for all living organisms is the cell. In complex organisms like the dog, cells are organized to form more complicated structures, such as glands and organs. In each of these cells, unique forms of deoxyribonucleic acid (DNA) molecules are present. DNA can form into genes, which are used to make the proteins and other molecules a cell needs to survive and reproduce.

To survive, organisms need access to energy. Energy is captured in many ways, with photosynthesis (conversion of sunlight for energy) being the primary method. The chemical reactions that cells use to receive energy is called metabolism. Basic cellular function involves intricate structures inside of its membrane, and many of these serve specific purposes.

There are several basic functions that the cell has to carry out for survival: molecule transport, reproduction, and energy conversion. How efficiently, or how well the cell performs, affects how healthy and resilient your dog is.

Sodium and potassium are essential minerals that help keep your dog's body pliable and flexible. These minerals, along with calcium, magnesium and phosphorus, are utilized by the endocrine glands. The efficiency of these glands determines the speed of metabolism. Sodium and potassium are essentially solvents in the body and act as dissolvers. They keep everything flowing in solution.

Calcium is controlled by the parasympathetic branch of the autonomic nervous system. Calcium helps to slow the metabolic rate, while phosphorus helps to speed things up. With chronic stress, the thyroid and adrenal glands become exhausted from overwork.

When this occurs, calcium, sodium and potassium can go either too low or too high.

When these minerals reach unhealthy levels, the body's metabolism is slowed down. Slow metabolism causes premature aging and, in extreme instances, can result in death.

If sodium and potassium levels are too low, it means there isn't enough solvent left in the body. Other minerals begin to drop out of solution and begin to pile up in arteries, joints, heart, skin, and other tissues. Your dog becomes rigid and stiff. In other words, your dog ages prematurely.

This process of exhaustion is the same in dogs of all ages. Essentially, exhaustion is premature aging. It's like a wood stove that isn't getting enough air; if the fire isn't hot enough, combustion is incomplete. This results in creosote (wood-tar) residue and clogs the chimney. Eventually, the chimney becomes so clogged, the fire goes out. This example illustrates how slow metabolizers die. The body essentially suffocates.

When a veterinarian performs an autopsy on the cardiovascular system of a pathologically slow metabolizer, they find iron deposits, manganese deposits and calcium deposits. These mineral deposits lead to tissue rigidity. The slow metabolizer is in a sense, turning into stone.

## stress kills

Under the influence of stress, the body redirects the energy normally allocated for healthy cell functions, such as regeneration and detoxification, to support the physiological systems needed to run away or to fight, commonly referred to as the fight or flight response.

Stress is a common term that refers to the consequences of the failure to respond appropriately to emotional or physical threats to the organism, whether actual or imagined. Subjective stress or perceived stress can have an effect on the dog's response to it, and thus have a profound effect on the immune system (Thornton, 2006).

Biological stress, as defined by Dr Hans Selye, includes a state of alarm and adrenaline production, which transforms into the resistance stage as a coping mechanism. Ideally, what should follow this resistance stage of stress is a stage of recovery.

Dogs with deranged or depleted mineral levels and ratios of the primary macrominerals (sodium, potassium, calcium, magnesium and phosphorus) are frequently unable to return to this recovery stage.

In life, stressors can be real or perceived, and they come in many forms, often with damaging physical and/or emotional health consequences. Dogs are subject to stress from many types of environmental influences, including electromagnetic field exposure, toxic metal exposure, chemical disruptors, and nutrient deficient foods.

The emotional stressors they encounter can include inadequate exercise and access to natural environments, prolonged confinement, and even include empathetic responses to their guardians under stress.

If one is unable to recover due to persistent exposure to stressors, or due to inadequate cellular response, one adapts to a stage of stress that may result in chronic disease conditions of all kinds (including premature aging and cancer). This is referred to by Selye



as the General Adaptation Syndrome. This means the dog's body has, at least temporarily, learned to live with it. At some point on this path, your dog moves into the exhaustion stage of stress. This refers to the failure of a body to adequately respond. If your dog cannot recover from the exhaustion stage, the ultimate result is death.

## forever young

We have all heard the phrase "age gracefully." The idea of being graceful as one's body deteriorates through various physical, chemical, mental and emotional stressors often seems like nothing more than a kind hearted thought. But dogs can age gracefully, provided the cellular energy is there to support this process.

## three simple steps to aging gracefully

### Step 1: Appropriate Diet

Your dog is a carnivore. What this means is that they require muscle and organ meat, bone and fat in their diet, every day.

Take a look inside your dog's mouth. It is an evolutionary work of bio-engineering excellence. The jaws are hinged and powerful. This design is specific to allow for effective tearing and crushing of raw meat and bones.

A canine's stomach is highly acidic and their saliva lacks amylase. The high acidity facilitates the breakdown of raw meat, bones, and bacteria. The lack of amylase makes carbohydrate, cellulose and fiber breakdown and digestion very difficult. Your dog is anatomically and physiologically designed to eat a carnivorous diet. Ideally, you can feed him this way from weaning through old age.

Although many raw feeders and raw feeding advocates recommend adding vegetables to a dog's diet, we think dogs do best on a starch free, meat based diet. Vegetables provide a multitude of essential vitamins, minerals and roughage for nourishment. Some animals, particularly ruminants and termites, can digest cellulose with the help of symbiotic micro-organisms that live in their guts. Humans can digest cellulose to some extent, however it mainly acts as a hydrophilic bulking agent for feces and is often referred to as dietary fiber.

Dogs are not physiologically designed to eat roughage and carbohydrates. The challenge of dissolving plant cellulose without a digestion designed to do so can easily cause pH imbalances in their stomach, leading to the raw muscle and organ meat sitting in the stomach and small intestine for longer than is biologically appropriate, where it can start to putrefy.

Carbohydrates also slow the digestive process. Therefore, if you do have vegetables (plant cellulose) or carbohydrates in your dog's diet, they should be cooked and run through a food processor so they can pass through the digestive system more easily.

### Step 2: Appropriate Lifestyle

Canines live in many different environments, but it's unnecessary to address each specific situation. A dog living in a studio apartment in New York City can have just as great a quality of life as a dog living on a sprawling ranch in the foothills of the mountains of the Pacific Northwest. The key is to understand some basic things

about dogs. Dogs are pack animals and do not thrive when left alone. Socialize them, with every species you can - they love it.

Dogs are powerful and agile; their physical and mental health decline when their lives are too sedentary. Even the smallest dog needs room to run and play every day. They also need to sleep and nap frequently. Dogs' bodies are working hard when they sleep; this is when they build and rebuild their bodies starting at the cellular level. Let them sleep.

### Step 3: Balanced Biochemistry and Toxin Management

The importance of this step is commonly misunderstood. It is a fact that we all live in an environmentally toxic world. Our dogs live in an even more toxic world because they live closer to the ground, where dangerous chemicals and heavy metals settle. These toxic metals have antagonistic effects on the important nutrient minerals and cause biochemical havoc.

Common toxin sources in dogs are antibiotics, pharmaceutical drugs and topical flea and tick medications containing pesticides.

Common sources of toxic metals in dogs are vaccinations and food processed using industrial machinery (the vast majority of all commercial foods). Vaccine related illness (vaccinosis) is almost entirely avoidable as there is simply no need to revaccinate for the same core diseases.

Stress also dramatically upsets biochemistry and leads to additional biochemical chaos. Chronic stress, over time, wears down the immune system and leaves the dog more vulnerable to disease and premature aging.

## summary

When biochemistry is balanced, cellular energy production is optimized. If diet and lifestyle changes are not enough to balance your dog's biochemistry and eliminate the toxic elements, you can use hTMA testing (a non invasive hair Tissue Mineral Analysis) to determine whether mineral and glandular supplementation are needed.

Homeopathy and traditional Chinese medicine are additional effective and non-invasive methods of addressing illnesses brought on by these mineral imbalances and toxins.

A biologically appropriate diet, a lifestyle that avoids stress, balanced biochemistry and manageable levels of toxins directly impact the body's ability to produce and utilize energy from the cellular level on up.

Simplicity is the key; put the correct things into the body (positive energy), minimize the harmful things put into the body (negative energy), use the body as it was designed to be used, avoid unnecessary stressors (physical, environmental, emotional), and enjoy watching your dog age with integrity and grace. 🐾

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