MHP Velvet Antler Extract
Concentrated Growth Factors

Extracted in Organic Grape Alcohol

Manufactured for
Max Muscle, San Jose CA
408-269-6299
There has NEVER been an ALL NATURAL supplement that can offer:

1. ANTI-AGING BENEFITS OF HGH
2. HEALING POWERS OF A PLATELET RICH PLASMA
3. ENDURANCE GAINS OF EPO
4. HORMONE BALANCING OF HCG
5. TOTAL SYSTEM REGENERATION OF A FULL MATRIX OF GF(s)
6. TISSUE REPAIRING STEM CELLS
7. REPAIR INTEGRITY OF DNA STRUCTURE

UNTIL NOW.

We are proud to showcase our line of Deer Velvet Antler products. All delivered in a All-Natural solution containing Deer Velvet Antler derived from a patent pending extraction process that produces the purest and most effective Velvet Antler products on the market.
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Deer velvet antler has been used for over two thousand years in ancient Eastern medicine and is only second to ginseng in importance for the mainstay of traditional Chinese medicine. It is one of the world’s oldest raw super foods because of its nutritional density and lack of caloric impact. Nearly 250 papers have been published on the manufacture, composition and biochemical effects of deer velvet antler since 1930. This research has consistently revealed a host of health benefits associated with using deer velvet antler including:

- Improving muscle tone
- Lean muscle mass and strength
- Increasing fat loss
- Lung capacity
- Levels of hemoglobin
- Improving glandular functions
- Enhancing metabolism
- Mental alertness
- Mood
- Memory
- Cognition and sleep
- Recovery from exertion or injury
- Immune system support
- Endocrine and hormonal stimulation

Deer velvet antler may also play a role in aiding the body to self-manage the following: cortisol levels, blood pressure, LDL cholesterol levels, and inflammation in bones and joints.

The long list of benefits associated with deer velvet antler has far-reaching implications for those suffering from everything like obesity, diabetes, arthritis, Alzheimer’s disease, stroke victims and paraplegics. The United States is currently the fifth largest consumer of deer velvet antler products in the world.
More About Deer Velvet Antler

Deer antlers grow at a rate of one inch or more per day, representing the fastest rate of organ growth in the animal kingdom. They can reach over six feet in diameter and weigh several hundred pounds. Deer antlers transform each year from cartilage to a state of calcification before naturally falling off and regenerating itself. Deer velvet antler comes from clipping the antler while in its growth phase during mating season. The stags are never in danger during the process and MHP Technology makes every effort to ensure that the animals are not harmed during the harvesting process.

The harvested deer velvet antler contains over one hundred active constituents, eighteen growth factors (including IGF-1, the metabolite of HGH), somatic stem cells, ectosaponins, all essential and non-essential amino acids, multiple neurotransmitters polypeptide combinations, and a naturally balanced matrix of growth factors with their cofactor/coenzyme counterparts.
Deer velvet antler can offer a wide range of positive benefits providing the baby-boomer generation a safe solution for anti-aging as well as supporting elite athletes to achieve optimal fitness. MHP Technology’s deer velvet antler provides the necessary bio-active molecules to the body so the natural bio-chemical mechanisms in our own bodies can better combat the undesired effects of aging and to support an active lifestyle. The same nutrients that can help the aging baby-boomer generation can also be used by elite athletes striving for maximum performance. The usages of deer velvet antler by Australian long-distance runners to support physical endurance and by Russian Olympic weight lifters to support muscle recovery are both well documented.

Deer velvet antler provides a wider collection of nutritional components than any other single source used to provide raw materials for dietary supplements. The biochemical matrix found in the live, growing deer velvet antler contains a complete range of beneficial growth factors, saturated fatty acid molecules, phospholipids, minerals, glycosaminoglycans, extracellular matrix components and the complete array of amino acids. In one source, all the building blocks that are used naturally in our body to restore and rejuvenate life are found in great abundance.

Additionally, unlike many natural resources, deer velvet antler is RENEWABLE. Each year, a harvest of deer velvet antler can be collected and the animal is supported in a healthy environment. As a matter of fact, in order to sustain our business it is necessary to actively support the year-long health and well-being of each animal involved in our program.

There are two classifications of nutrients found in Deer Velvet Antler:

- Nutrients that can be ingested
- Nutrients that are DESTROYED after ingestion

Thus, there needs to be two classifications of Deer Velvet Antler products:

- Orally ingested capsules
- Sublingually delivered extracts
Two types of nutrients that need two different delivery methods means two VERY DIFFERENT products!

Capsules focus on the types of benefits from the many minerals and digested amino acids and other digestible proteins contained in raw velvet antler.

Products that are bio-active and highly concentrated use a sublingual delivery system to deliver the unique nutrients that offer the full scope of benefits available from MHP Technology’s deer velvet antler supplements.

The MHP Technology Way…
Why We Are The BEST!

We are a vertically integrated velvet antler company and control the entire process from deer conception at our farm facility in Idaho to the bottling of our unique deer velvet antler extract products. We maintain the animals at optimum levels of health which guarantees the highest quality product for our customers.

Our products are the best, because they work!

What makes us unique?

I. High Quality Deer Velvet Antler

The emphasis at our ranch is the deer velvet antler. Like any farming trade, producing a high quality product requires years of experience, knowledge and a passion for the product. Our breeding program is crafted to produce animals that produce the most abundant and highest quality deer velvet antler possible, while serving the needs of the animals. The timing of harvest and the methods we use to harvest the antler are second to none.
II. The Extraction Process

This is about passion... Like everything in life, if you want it done the right way – you must do it yourself. We have developed a three step extraction process that is unique to MHP Technology. We do not out source this raw material and we do not sell this raw material to other suppliers.

From raw deer velvet antler to bottled product – we are a 43:1 extract, making our products the most potent and bio-actively available deer velvet antler products on the market. This didn’t happen overnight, this is a process that our company proudly sought out and invested into to ensure that we are producing our own raw materials and we control each step of the extraction and the bottling processes.

III. Control of Product, Antler to Body

The only way you can know what you are getting is by cutting out the middle man. When product is purchased from MHP Technology the end user has confidence that the product in the bottle represents quality.

IV. Proud Representation

MHP Technology is proud to represent our products and our methods. We have grown and expanded since our simple beginnings in mid-2001 when we began in California and have grown into the Nation’s Leader in Deer Velvet Antler. Our corporate Headquarters is currently in Tampa, Florida.

Deer Velvet Antler versus... All Other Products

There are many products on the market that are claiming to provide benefits, and in some cases are able to provide the many benefits that they are boasting. The big problem is finding the product that will both improve your immediate overall health without polluting your body with dangerous chemicals. The All – Natural Supplement that aides your ailments without side effect is the Holy Grail in nutritional supplementation. Rarely found – but often mimicked.
The Nutritional Supplement Paradox

It is actually **less expensive** to make an **immediately effective**…
Yet, **dangerous and unhealthy** supplement…

**Than it is...**
To make a Quality Product that produces Long Lasting Health without side effects. Thus, in the sports and anti-aging supplement market, the challenge is to produce a product that includes natural ingredients; is still effective, produces no side effects, and promotes long lasting health and wellness. MHP Technology proudly presents products that only represent the most natural and organic ingredients available. Deer velvet antler will not give you the exaggerated results illegal products or dangerous supplements offer. However, by taking MHP Technology deer velvet antler supplements, you will gain the same long lasting benefits of total body nutrition without the many risks associated with other products on the market.

Pledge for Excellence

MHP Technology’s entire product line consists of 100% all-natural ingredients delivered in a water and organic grape alcohol extract. This delivery of our product allows the nutrient rich bio-active molecules to be absorbed directly into your bloodstream sublingually and through the interior lining of your cheeks, thus avoiding the gastric acid in the stomach, poor absorption in the intestines and metabolism in the liver that may decrease the bioactivity of traditional orally ingested tablets by up to 90%.

Our products are presented to the consumer in a way that allows for maximum absorption via sublingual or buccal absorption, then swallowing to allow for maximum benefit of the other minerals and nutrients. The effect of the organic grape alcohol used in the extraction works to both stimulate absorption as well as preserving the organic nutrients in the solution.
One of the main components in MHP Technology’s products is IGF-1, essentially the end result of human growth hormone (HGH). There has been considerable adverse publicity and misnomers about the effects this polypeptide allegedly has on the human body, notably that it may be a cancer-causing agent. On the contrary, many studies show that natural IGF-1 has a multitude of positive benefits for the treatment of several debilitating conditions. In fact, research actually concludes that increased natural IGF-1 levels have a protective and stimulating effect on the immune system.

The actual negative side effects that can be attributed to IGF-1 isolates and HGH come solely from the synthetic versions of the compound that are developed in laboratories.

**All-Natural IGF-1**

Deer velvet antler provides a natural source of bio-available IGF-1. However, the IGF-1 delivered in MHP Technology’s products is provided as it naturally occurs with all of the bio-active constituents balanced by nature to the levels of IGF-1 and the many other supporting molecules.

When other nutritional supplement companies add isolates to strengthen their products, they are causing the natural balance to be disturbed and the quality of their product to diminish.

Also, because the nutrients provided from MHP Technology’s deer velvet antler products are naturally derived and balanced, if your body doesn’t use the nutrients – they are passed through your urine to prevent overdosing.

Studies showing the benefits and uses of all-natural IGF-1 can be found on pages 13-17.
Sublingual delivery encompasses the administration of a nutrient into the bloodstream by diffusing the nutrient molecules through tissues under the tongue. Because the connective tissue beneath the epithelium contains a profusion of capillaries, the substance then diffuses into them and enters the blood stream.

**Benefits of Sublingual Delivery**

For sensitive compounds that are subject to high rates of degradation and/or low intestinal absorption, sublingual routes of delivery offer major advantages over traditional oral digestion. The sublingual delivery mechanism allows the nutrients to avoid the degrading action of the gastrointestinal tract, either by stomach acid or bile, or by the many digestive enzymes involved in the digestive process. Furthermore, after absorption through the digestive tract, nutrients then pass to the liver, where they can be severely altered; this is known as the first pass effect of nutrient metabolism.

MHP Technology’s products are designed to achieve maximum bioactivity, absorption and effectiveness. Through its sublingual delivery system, important growth factors are allowed to pass directly into the bloodstream. Our extract ensures that the important ingredients are delivered unaltered into the body and at a high rate of absorption rather than be broken down in the digestive tract into free form amino acids.

**Unique Packaging and Materials**

**Amber Bottles with Glass Droppers**

MHP Technology’s products only use amber glass bottles that prevent the harmful effects of sunlight from degrading the bio-active components of the extract; thus protecting the quality and the effectiveness of our extract before it reaches the consumer. The all-glass environment prevents the polypeptides from binding to things like plastic containers or the plastic tube used for most spray products. Growth factor molecules tend to bind to plastic (plastic bottles, droppers and/or spray nozzles) and not glass, thus our packaging provides a superior environment for the deer velvet antler products.
Organic Grape Alcohol

Organic grape alcohol works to stimulate the tissue under the tongue that is responsible for allowing the diffusion of nutrients into the bloodstream. The unique properties of organic grape sugars make the organic grape alcohol an exemplary extractor of nutrients. The nature of the alcohol works to preserve the organic components of the deer velvet antler. Also, aside from being hypoallergenic; our grape alcohol is also entirely free from genetic modification and is gluten free.

How to Administer the Formula:

Hold the liquid formula under the tongue for 90 seconds. Swish the formula around the mouth for an additional 30 seconds for further absorption. Swallow the remnants of the formula for the final stage of absorption.
MHP Technology’s products ARE NOT ISOLATED SYNTHETICALLY DERIVED IGF-1. Instead, our exclusive 43:1 extract is comprised of 89% organic matter with an 85% protein concentration and an 11% trace mineral content. The active ingredients found in Velvet Antler Extract 450/1000/1500mg include growth hormones and growth factors, minerals, trace mineral elements, protein, collagen, lipids, and glycosaminoglycans.

**Growth Factors**
- Bone morphogenetic proteins (BMPs)
- Epidermal growth factor (EGF)
- Erythropoietin (EPO)
- Fibroblast growth factor (FGF)
- Growth differentiation factor-9 (GDF9)
- Insulin-like growth factor (IGF) I
- Insulin-like growth factor (IGF) II
- Interleukins
- Nerve growth factor (NGF) and other neurotrophins
- Platelet-derived growth factor (PDGF)
- Transforming growth factor alpha (TGF-A)
- Transforming growth factor beta (TGF-B)
- Vascular endothelial growth factor

**Amino Acids (Essential & Non-Essential)**
- Alanine
- Arginine
- Asparagine
- Aspartic acid
- Cysteine
- Glutamic acid
- Glutamine
- Glycine
- Histidine
- Isoleucine
- Leucine
- Lysine
- Methionine
- Phenylalanine
- Proline
- Serine
- Threonine
- Tryptophan
- Tyrosine
- Valine

The active ingredients found in Velvet Antler Extract 450/1000/1500mg include growth factors and amino acids, minerals, trace mineral elements, protein, collagen, lipids, and glycosaminoglycans.
Free Form Amino Acids
- Amino Acid Decarboxylase
- Aminoacidipic acid
- Amino-N-butyric acid
- Aspartic acid
- B-aminoisobutyric Acid
- Beta-alanine
- Beta-amino acid
- Carnitine
- Citrulline
- Dihydroxy-L-phenylalnine (DOPA)
- Gamma-aminobutyric acid (GABA)
- Hydroxlysine
- Ornithine
- Phosphoethanolamine
- Phosphoserine
- Sacrosine
- Taurine
- y-Aminobutyric acid
- 1-Methylhistidine
- 3-Methylhistidine

Hormones
- Androstenedione
- Dehydroepiandrosterone
- Estone
- Estradiol
- Luteinizing hormone
- Progesterone

Vitamins
- Vitamin A Retinol and various Retinoic Receptors

Minerals
- Calcium
- Copper
- Iron
- Manganese
- Phosphorus
- Potassium
- Selenium
- Sulfur
- Zinc

Glycosaminoglycans
- Chondroitin sulfate
- Dermatan sulfate
- GAG proteoglycan decorin
- Hyaluronic acid
- Keratan sulfate
- 15epi PGE
- PGE1
- PGE2
- PGF1a
- PGF1b

Mono/Poly Saccharides
- Arabinose
- Deoxyribose
- Fructose
- Galactose
- Glucose
- Mannose
- Ribose
- Xylose
Saturated Fatty Acids
- C14:0 Myristic acid
- C16:0 Hexadecanoic acid
- C18:0 Stearic acid

Mono Unsaturated & Poly Unsaturated Fatty Acids
- Arachidonic acid
- DHA
- Gadoleic acid
- Linoleic acid
- Linolenic acid
- Oleic acid
- Palmitoleic acid

Phospholipids & Sphingolipids
- Cephalin
- Ceramides
- Lecithinc
- Lysocephalin
- Lysolecithins
- Lysophosphatidylcholine
- Phosphatidylinositol
- Sphingomyelin

Extra Cellular Matrix Components
- Protein
  - Collagen
    - type I
    - type II
    - type III
    - type IV
    - type VI
    - type X
  - Elastin
- Glycoconjugates
  - Structural Glycoprotein
    - Fibronectin
    - Laminin
    - Undulin
    - Nidogen
    - Tenascin
    - Vitronectin
    - Osteonectin
  - Glycosaminoglycan
  - Proteoglycan
    - Core
      - Aggreccan
      - Biglycan
      - Decorin
      - Fibromodulin
      - Lumican
      - Perlecanc
      - Sydencecan
      - Versican
- Glycosaminoglycan
  - Chondroitin 4-
  - Chondroitin 6-
  - Dermatan
  - Keratan
  - Heparin
  - Hyaluronic Acid
These 20 amino acids are the most vital amino acids, which are the building blocks for proteins. These Amino acids regulate brain, muscle, organ, and endocrine related functions.

* Free amino acid levels comparison in sections of Elk Velvet Antlers.
* Values given are the means (n=4) in nmol/g.

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**NOTE: ANTLER TIPS HAVE AN 800% HIGHER CONCENTRATION OF AMINO ACIDS**

<table>
<thead>
<tr>
<th>Amino Acid</th>
<th>Velvet Antler</th>
<th>Base</th>
<th>Tips</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARG - Arginine</td>
<td>2,000</td>
<td>10,299</td>
<td></td>
</tr>
<tr>
<td>ASN - Asparagine</td>
<td>387</td>
<td>10,783</td>
<td></td>
</tr>
<tr>
<td>CYS - Cysteine</td>
<td>134</td>
<td>1,730</td>
<td></td>
</tr>
<tr>
<td>GLU - Glutamic Acid</td>
<td>6,144</td>
<td>137,192</td>
<td></td>
</tr>
<tr>
<td>HIS - Histidine</td>
<td>12,566</td>
<td>120,675</td>
<td></td>
</tr>
<tr>
<td>ILE - Isoleucine</td>
<td>1,408</td>
<td>11,132</td>
<td></td>
</tr>
<tr>
<td>LEU - Leucine</td>
<td>5,703</td>
<td>24,827</td>
<td></td>
</tr>
<tr>
<td>LYS - Lysine</td>
<td>3,499</td>
<td>22,656</td>
<td></td>
</tr>
<tr>
<td>MET - Methionine</td>
<td>1,021</td>
<td>5,526</td>
<td></td>
</tr>
<tr>
<td>PHE - Phenylalanine</td>
<td>2,000</td>
<td>7,649</td>
<td></td>
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<tr>
<td>PRO - Proline</td>
<td>4,553</td>
<td>19,157</td>
<td></td>
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<tr>
<td>SER - Serine</td>
<td>2,747</td>
<td>26,633</td>
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<tr>
<td>THR - Threonine</td>
<td>2,972</td>
<td>23,504</td>
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<tr>
<td>TRP - Tryptophan</td>
<td>962</td>
<td>8,589</td>
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<tr>
<td>TYR - Tyrosine</td>
<td>1,258</td>
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<tr>
<td>VAL - Valine</td>
<td>4,698</td>
<td>30,347</td>
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<tr>
<td>ORN - Orthinine</td>
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<td>8,589</td>
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<tr>
<td>TAU - Taurine</td>
<td>11,110</td>
<td>40,474</td>
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<tr>
<td>GLY - Glycine</td>
<td>9,939</td>
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**TOTAL FREE-FORM AMINO ACIDS**

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<th>Base</th>
<th>Tips</th>
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<tbody>
<tr>
<td>86,629</td>
<td>693,137</td>
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</table>
**Research on IGF-1**

Research has shown a multitude of benefits natural IGF-1 can have on the body. From building muscle mass, improving metabolism, nerve regeneration, immune responses, and blood sugar utilization, to slowing the aging process and expanding longevity. Studies have consistently concluded the remarkable effects of natural IGF-1. Chronic conditions such as heart disease, fibromyalgia, multiple sclerosis and obesity have also shown marked improvement with the utilization of natural IGF-1.

Some of the characteristics of IGF-1 deficiency include:

- Decreased hair and nail growth
- Decreased HDL cholesterol
- Depression
- Elevated LDL
- Emotional instability
- Increased abdominal and visceral fat
- Increased body fat percentage
- Insulin resistance, which can lead to type 2 diabetes
- Lack of connective tissue
- Poor memory
- Reduced exercise performance
- Reduced heart output and sweating
- Reduced sex drive and functions
- Reduced skeletal muscle strength and size
- Reduced thyroid function
- Thin skin

**Building Muscle Mass**

There is a tremendous amount of focus in the training of athletes today to get bigger, stronger and faster by any and all means necessary. Unfortunately, this often involves the use of anabolic, synthetic agents that have devastating long-term ramifications on the human body. Growth hormone injections, steroids and other harmful agents have destructive effects on muscle tissues, the endocrine and exocrine systems and even DNA.

Natural IGF-1 is a far safer alternative to building muscle mass and is ten times more effective than growth hormone itself. In fact, the majority of increases in strength and muscle as well as the anti-aging effects of growth hormone are because of its ability to raise IGF-1 levels in the body.

MHP Technology’s Velvet Antler Extract 450/1000/1500mg includes an all-natural version of IGF-1 and growth factors. It will not harm or cause any of the negative side effects that are often experienced with these synthetic formulas.
Improving Muscle Building

- Increases proliferation and growth of lean muscle cells without a corresponding rise in fat tissue
- Increases uptake of amino acids into muscle cells, helping to regenerate muscle tissue after exercise and assure that muscle protein synthesis takes place
- Increases uptake of glucose into muscle cells
- Improves utilization of fat for energy
- Decreases utilization of carbohydrates
- Reduces catabolism (muscle break down) after training and workouts

Increasing Human Metabolism

- Improves white blood cell production
- Restores the immune-promoting lymphoid tissue
- Stimulates the proliferation of both B and T lymphocytes that help to kill viruses
- Increases the uptake and degradation of dangerous LDL cholesterol by macrophages
- Improves nitrogen retention (muscle preservation) and increase sodium excretion
- Improves parathyroid function vitamin D interaction to produce a dense bone matrix
- Reduces the urinary hydroxyproline excretion

Losing Fat

One of the major issues with losing weight and restricting calorie intake is the accompanying loss of muscle mass. Lean muscle mass has been directly proven to stimulate an increased metabolism and fat loss. Studies have shown that individuals receiving growth hormones lose 12% of their body fat every six months. HGH increases the fat burning mechanism intrinsic to IGF-1, thereby not only preserving lean muscle mass but also increasing it. IGF-1 also reduces cortisol levels and improves and regulates hormonal levels, which can be affected by calorie-restricted diets.

Improving the preservation of lean muscle mass when fat loss is experienced would also benefit the health of an individual during weight loss procedures. Studies have shown that the pituitary gland contains the same amount of growth hormone through an individual’s lifetime. With age, however, the ability to release that growth hormone is somehow blocked in the feedback loop between IGF-1 in the liver and the hypothalamus in the brain. Instead of reduced levels of IGF-1 signaling to the brain to direct the pituitary gland to make more growth hormone, this feedback loop is broken down with age. It is for this reason why supplementing IGF-1 is not associated with negative feedback loops.
Slowing the Aging Process

In a study at the International Anti-Aging Systems in London, IGF-1 and HGH were isolated and administered to separate muscle tissues. The IGF-1 injection had an anabolic effect on the muscle tissue, with a marked increase in its size whereas the HGH administered muscle remained the same. This study shows that HGH must be converted into IGF-1 before it can be metabolized by the body.

HGH is the primary hormone of the endocrine system. As it pulsates out from the pituitary gland, it is quickly converted by the liver into IGF-1, the metabolite form of the hormone that is ready to use by the body. Levels of HGH significantly decrease as humans get older, especially after the age of 40. The decline in HGH is directly associated with certain aging signs like wrinkling skin, graying hair, decreased energy and sexual function, increased body fat, heart disease, and weak and brittle bones. All of these symptoms of aging can be slowed down and even reversed with administering natural IGF-1 to counteract the biological aging process.

The International Anti-Aging Systems concluded that a mere 2,500 nanograms of IGF-1 taken sublingually is a therapeutic amount to help slow down the aging process. In addition, research by Dr. Keith Kelly has shown that IGF-1 reverses the shrinking of the thymus, which is one of the most important immune modulation organs in the body. This research shows exciting benefits of IGF-1 for those looking to halt and reverse the aging process.

Increasing Lifespan

IGF-1 has the potential to increase lifespan. The blueprint of life that determines age is DNA. Dr. Vincent Giampapa, Director of Clinical Research at the Longevity Institute International has studied how natural sources of IGF-1 may soon be able to turn old cells into new ones. IGF-1 can help produce new healthy cells and keep them in a healthy state for as long as possible. The cells ability to function relies on the genetic material of DNA. This resides in the nucleus of the cell that codes for all proteins, hormones and enzymes that make the cell run. Oxygen radicals and other factors such as UV light are constantly damaging DNA. It has the ability to repair itself but this ability is dramatically reduced within the aging process. Certain antioxidants can reduce the damage to DNA, but none have been shown to be as effective as IGF-1 in doing so.

European researchers have shown that IGF-1 is capable of doing what other antioxidants cannot. IGF-1 initiates the transportation of nucleic acids into the nucleus of the cell where DNA resides. It provides the raw materials necessary to repair damage to DNA and initiate cell division, helping to retard the aging process.
Improving Blood Sugar Utilization

HGH can cause insulin resistance and further complicate the conditions of type 2 diabetics. On the other hand, IGF-1 actually has similar properties to insulin and helps improve the blood sugar profiles in these individuals. Studies were conducted by researchers at the Nemours Children’s Clinic in Jacksonville, Florida, on three groups of individuals with insulin resistance. They concluded that patients treated with IGF-1 had less muscle loss, improved outcomes from surgery and normalized blood sugar levels, even when administered with conflicting pharmaceuticals that are known to cause insulin resistance.

Improving Heart Functions

IGF-1 has been shown to improve the cardiac functions of patients with congestive heart failure. In a randomized double-blind study conducted by Dr. Marc Donath at the University Hospital of Zurich, the administration of IGF-1 to patients was associated with a 27% rise in the cardiac index and a 21% boost in the stroke volume index. The heart improved in strength and pumped more blood. This was also accompanied by a reduction in systemic vascular resistance, a 25% decline in pulmonary artery pressure and a 33% decrease in the right arterial pressure, while the placebo group experienced no such improvements.

Repairing Nerve Damage

IGF-1 has been shown to repair and reconnect severed nerve endings up to a distance of six millimeters. According to scientists at the Institute of Neurobiology at the University of Gothenburg, IGF-1 by itself or in a combination with other growth factors can stimulate nerve regeneration. IGF-1 has been shown to have a remarkable growth effect on spinal cord motor neurons by increasing neural activity in the spinal culture by 150-270%. It has also been shown to significantly decrease the preprogrammed cell death in embryos and to have a tenfold increase on the intramuscular nerve sprouting in laboratory mice.

Researchers at the University of Michigan have also demonstrated that IGF-1 can stimulate the protective covering around the nerves, the myelin sheath. In debilitating diseases like multiple sclerosis and ALS (Lou Gehrig's disease), damage around the myelin sheath prevents signals between the brain and the nerves from being transmitted. IGF-1 and other growth factors have been shown to re-grow this protective sheath. IGF-1 was the most effective of the growth factors in inducing the growth of the myelin sheath and neuron cell and also help the nerves remain normal and re-grow even when diabetic conditions were present.

The results of these studies are tremendous for individuals with MS and ALS who experience a loss of cortical motor neurons and for other diseases that affect the peripheral nerves.
Relieving Fibromyalgia

Individuals with fibromyalgia are growth hormone and IGF-1 deficient. They experience muscle weakness, a reduced exercise capacity and chronic fatigue syndrome. A recent study found that 40% of fibromyalgia patients had lower IGF-1 levels as compared to normally healthy adults in their age and gender group. The study then looked at fifty of these same individuals and found that over 82% of them lacked the ability to properly secrete growth hormone.

IGF-1 is the metabolite of growth hormone. It is proven to improve muscular endurance, strength and immune response. Directly administering a natural IGF-1 substitute in lieu of this lack of proper growth hormone secretion could prove to be an ideal natural alternative for those thousands of individuals suffering from fibromyalgia.

Improving Immune System Responses

There is an interesting relationship between IGF-1 and the immune system. The activity between all major immune cell types such as T-cells, B-cells, natural killer cells and macrophages is altered with increased IGF-1 levels. This is because increased IGF-1 levels are involved in the production of lymphocytes, and in turn, can actually produce more IGF-1. This provides an alternate source of IGF-1 production other than the liver and a baseline for cellular communication between the immune system and the neuro-endocrine system.

Reducing Prostate-Specific Antigens

In a study by Dr. L. Cass Terry of the Medical College of Wisconsin, IGF-1 levels were found to not be associated with heightened prostate specific antigen (PSA) levels. The findings, published in the International Journal of Anti-Aging Medicine, indicated that prostate cancer incidences rise as men increase in age, whereas the blood levels of IGF-1 significantly decrease over the same timeframe at a rate of about 14% per decade after the age of thirty. In fact, IGF-1 may reduce PSA readings that are greater than four. The study also found that in over 3,000 patients, no increase in prostate cancer or any other malignancy was found in long-term treatment.

In another study, Dr. Ronald Klatz, President of the American Academy of Anti-Aging Medicine, found that there were no reported cases of cancer among 800 treated patients, proving that increased IGF-1 levels may have a protective and stimulating effect on the immune system. Further studies have shown that alternative therapies in treating prostate cancer with direct supplementation of endocrine hormones have actually significantly reduced PSA levels above fifty down to normal ranges of zero to four. This is attributed to the natural production killer immune cells that were able to destroy the cancer cells.
The biological activity of deer antlers may originate in the gangliosides.


Phosphatidylcholine is a major constituent of cell membranes found in deer antlers and is an immune modulator through the proliferation of concanavalin-A.


The concentration of water-soluble protein in freeze-dried antler extract was 13.1 times higher than that of heating processed antler.


Velvet antler extract accelerates fracture healing by stimulating the proliferation of chondrocytes and osteoblast precursors.


Velvet antler is capable of promoting nerve regeneration and antler extract can help prevent nerve damage.

Velvet antler contains therapeutic amounts of IGF-1 that have a healthy assimilation into the human body.


Expressions of neurotrophin-3 and vascular endothelial are found in therapeutic amounts in deer antlers.


Tribulus is shown to improve sexual performance and function.


Velvet antler contains concentrated stem cells and bone marrow.


Powder derived from quality elk velvet antlers affects the proliferation and differentiation of mesenchymal stem cells that are derived from adult bone marrow.

Doron, Ran, Zvi Nevo, and Itay Fenichel. The effect of powder made of quality elk velvet antlers on the proliferation and differentiation of mesenchymal stem cells derived from adult bone marrow. European Orthopaedics and Traumatology. 1.3 (2010): 125-129.

Velvet antler polypeptides have a biological effect on the neural stem cells of embryonic rat brains.

Velvet antler is highly potent in increasing white blood cell counts in humans and defending against leukemia cells.


Velvet antler increases muscle and nerve strength thereby helping in recovering from injury and surgery.


Velvet antler contains 20 essential and non-essential amino acids.


Nutrients found in velvet antler are important in treating rheumatoid arthritis, osteoarthritis and osteoporosis.


The growth factors, growth hormones and other constituents of velvet antler can combat many of the deteriorating effects associated with the aging process.

The alcohol extract of velvet antler may help those suffering from gastric and duodenal ulcers and aid in the recovery of gastrointestinal surgery.


**Velvet antler improves cell growth and demonstrates anti-tumor and anti-viral properties.**


**The oral administration of velvet antler reduces blood glucose levels in diabetic rats.**


**Velvet antler reduces cholesterol levels in rats.**


**Velvet antler helps reduce arterial blood pressure.**


Velvet antler increases sperm count and mobility in treating impotence.


Velvet antler contains nutrients that increase testosterone levels in men and estrogen levels in women.


Velvet antler helps protect organs because of its ability to stimulate protein synthesis.

Velvet antler has an ability to prevent and reduce shock and stress responses.


Velvet antler is a natural dietary whole food supplement that does not produce drug related side effects.


Velvet antler inhibits monoamin oxidase activity and decreases the breakdown of neurotransmitters in the brain resulting in enhanced mood and memory, sustained energy levels and a restful sleep.

The process of antler regeneration is linked to the reproductive cycle.


There is an expression of PTHrP and the PTH/PTHrP receptor in growing red deer antler.

IGF-I may be an important hormone in the breeding habits of male white-tailed deer.


IGF-1 stimulates the proliferation of antlerogenic cells from all four ossification stages (intramembraneous (IMO), transitional (OPC), pedicle endochondral (pECO) and antler enchondral (aECO)) in a dose-dependent manner.


Lysophosphatidylcholine derived from deer antler extract suppresses hyphal transition in Candida albicans through the MAP kinase pathway.


Cells in regenerating deer antler cartilage provide a microenvironment that supports osteoclast differentiation.


The water-soluble extract from the antlers of wapiti effects the growth of fibroblasts.


New Zealand Deer Antler Velvet (NZDAV) may have positive effects on body composition and strength/power in resistance training.

**Glossary of Terms**

**Bone morphogenetic proteins:** a group of growth factors and cytokine that are primarily responsible for inducing the formation of bone and cartilage; vital for any bone or joint issue

**Calcium (Ca):** provides structure for bones and teeth and is essential for nerve impulse conduction, muscle contraction and blood clotting

**Chondroitin sulfate:** an extremely potent anti-inflammatory agent. It has been clinically proven to reduce blood clots, improve blood circulation, decrease the risk of strokes, improve cardiovascular health and act as an anti-cancer agent for a wide variety of cancers. It works synergistically with chemotherapy and other cancer medications.

**Collagen:** a major structural component of bones, tendons, ligaments and cartilage. Collagen helps with skin elasticity and anti-aging. It also stimulates T cell and interleukin production and has been shown to reduce swelling and pain in joints caused by rheumatoid arthritis (Trentham et al. 1993). This same study also showed collagen to have a major impact in improving autoimmune diseases such as MS.

**Copper (Cu):** necessary for red blood cell development, bones and nerves

**Epidermal growth factor (EGF):** has growth promoting actions on the skin and is vital in the care of skin disorders. It is thought that at least some effects of normal aging, wrinkling and loss of elasticity in the skin are due to a lack of GH secretion and thus the reduced production of EGF.

**Erythropoietin:** a hormone produced in the kidneys and released into the bloodstream in response to low oxygen levels, thus helping to increase the oxygen-carrying capacity of the blood.

**Fibroblast growth factor:** affects the central and peripheral nervous systems and regenerates the pituitary gland. It also induces the formation of new blood vessels and is used in skin grafts. It synthesizes what is known as the extracellular matrix.
Gangliosides: a fatty acid and sugar combination that helps to regenerate nervous system tissue, especially in the brain and endocrine system.

Glucosamine sulfate: an amino acid sugar that occurs naturally in the body. Its glue-like qualities help to hold tissues together as well as being a potent anti-inflammatory and wound-healing agent. It is also a major component of synovial fluid, which lubricates and serves as a shock absorber for the joints.

Glycosaminoglycans (GAGs): one of the most powerful anti-inflammatory agents known to regenerate and repair cartilage and is clinically proven to be more powerful than the anti-inflammatory drug dexamethasone. GAGs stimulate the immune response against viral, bacterial and fungal infections and inhibit cell division in malignant or benign tumors. GAGs are one of the most abundant substances in Velvet Antler Extract 450/1000/1500mg and are extremely bioactive.

Glycosphingolipids: involved in cell metabolism and growth.

Growth factors (somatomedins): small proteins produced naturally in the human body by the liver through the stimulation of growth hormones. It has been theorized that most of the growth effect of growth hormones are directly attributed to the stimulating effects it has on the production of IGF-1 rather than the direct effect of the growth hormone itself.

Growth hormones: affect the growth and maintenance of bones, promote protein and fat metabolism, stimulate cartilage growth, and strengthen and lengthen bones, especially in children.

Hematopoietic: the formation of cellular blood components. All cellular blood components are derived from hematopoietic stem cells. They reside in bone marrow (antler is a bone once hardened). Velvet Antler Extract 450/1000/1500mg has been clinically studied and is proven to have immunocytochemical reactions, indicating that the studied cell populations contain stem cells.

Hyaluronic acid: the cement material of connective tissue and a component of synovial fluid that cushions joints. When applied topically, it has been proven to instantly remove or reduce the appearance of wrinkles for almost 24 hours.
**IGF-1 (insulin-like growth factor):** IGF-1 or somatomedin C is the most important of the four growth factors in the human body. See the IGF-1 section for an in depth look at this master growth factor. (IGF-2 works synergistically with IGF-1 to produce many of the same benefits).

**Interleukins:** responsible for the production of white blood cells, lymphocytes and cytokines. Produces killer T and B cells and initiates inflammatory response and immune functions. Interleukins are vital in the treatment of cancers and other immune disorders.

**Iron (Fe):** essential for blood cells transporting oxygen throughout the body

**Lipids (all essential fatty acids including omega 3 and 6):** build cell parts and boost energy for cellular activities. Sphingomyelin and phospholipids help to regenerate nerves and nervous system tissues.

**Luteinizing hormone:** responsible for health stimulation and regulation of testosterone and other sex hormones in both men and women. It has a gonadotropin effect in regulating healthy levels of sex hormones. It is vital for menopause, PMS, andropause, and weight loss.

**Magnesium (Mg):** needed in metabolic reactions and for storing and releasing energy in cells

**Manganese (Mn):** needed for the development of bones and connective tissue and for normal functioning of the nervous system

**Nerve growth factor:** stimulates the growth of sympathetic and sensory nerve cells required for neural repair. It also affects the peripheral nervous system and promotes healthy development and regeneration of neurons. It is vital in the treatment of Alzheimer’s and Parkinson’s diseases, dementia, and other neurological disorders.

**Neurotrophin growth factor:** regulates growth, development and survival of neurons in the peripheral and central nervous systems. It works synergistically with nerve growth factor to promote neurite and nerve survival and development.

**Phospholipids:** effective structural materials in cell membranes. They help to facilitate the passage of fat in and out of cells and blood.
**Phosphorus (P):** provides structure for bones and teeth and is a component of nearly all metabolic reactions

**Potassium (K):** needed for nerve and muscle function

**Pro hormones and sterols:** types of chemicals that are involved in sending messages in the body. They help to lower LDL (bad) cholesterol, raise HDL (good) cholesterol and improve cellular communication.

**Prostaglandins:** chemical massagers produced in virtually all tissues, causing a broad range of positive effects on many parts of the body’s defense systems. Some of the physiological effects include vasodepression, smooth muscle contraction or relaxation. Prostaglandins also reduce swelling associated with arthritis and injuries. They function on lipid metabolism, as seen in its ability to lower cholesterol and reduce blood clotting (Church, 1999).

**Proteins (including all essential amino acids):** the structural materials in cells that aid in the growth and repair of all tissues. Proteins are the second most abundant building block in the human body.

**Selenium (Se):** powerful antioxidant

**Sulfur (S):** a component of various amino acids and insulin

**Transforming growth factors A & B:** promote normal wound healing and anti-inflammatory responses. Without these growth factors, wound healing would be nearly impossible. They are vital for normal tissue development to occur whether in wound healing or regeneration. Diabetics lack these growth factors, which is why they have wound healing issues.

**Vascular endothelial growth factor:** promotes venous, venule, artery, arteriole, and capillary health by providing the essential cofactors for repairing and restoring damaged vessels

**Zinc (Zn):** part of the enzymes involved in digestion and respiration and is necessary for normal wound healing and skin health
VELVET ANTLER EXTRACT
CONCENTRATED GROWTH FACTORS
Extracted in Organic Grape Alcohol