

REVITA®

HIGH PERFORMANCE HAIR GROWTH  
STIMULATING SHAMPOO

PRODUCT INFORMATION BOOKLET

REVITA®

## TECHNOLOGY

*Revita, the most efficient hair growth stimulating shampoo available in the market is the final result of DS Laboratories efforts on cutting edge research. Revita is a powerful and unique SLS/SLES free combination of active ingredients specially designed to maintain scalp vitality and act on follicle dysfunctions in order to achieve best results in short periods of time. Sodium Lauryl Sulfate and Sodium Laureth Sulfate, commonly used low cost detergents in shampoos and cleansers, are linked to skin irritation, skin drying and hair loss due to follicle attack. Revita is Sodium Lauryl Sulfate and Sodium Laureth Sulfate free, providing a high quality scalp skin safe shampoo product.*

*Revita was developed with a cost-no-object approach. Revita's compounds have been chosen based exclusively on their properties, quality and efficacy (in the opposite of the majority of available products, which are usually developed with production costs in mind). The final result is a very high quality shampoo product with absolutely no equivalent competitor in the market. Revita combines costly first line compounds at high concentrations like Caffeine at 4.0%, Pyrus Malus (Apple) Seed Extract at 1.0% and Spin Traps (SOD Mimic) at 0.1% with other top level ingredients which make Revita a unique product in its class.*

## CHEMICAL-FREE EXTRACTION

*To improve the efficacy of this synergic combination, DS Laboratories developed a unique "chemical free" extraction process that keeps original properties and clinical efficacy of final components. Through gentle mechanical compression, Revita's compounds are obtained as pure and chemically preserved active molecules.*

## RESULTS

*Revita starts acting on your scalp and hair follicle since the first day of use. The time you will need to note the first results will depend of the severity and duration of your hair loss. No matter how long or how intense your hair loss is, using Revita on daily basis will improve the vitality of your scalp, maintaining the quality of your hair and stimulating new hair growth.*

*Through the synergic interaction of very effective compounds, Revita brings you a highly effective product designed to maintain scalp vitality and act on hair loss. By combining an antioxidant effect, anti-DHT properties, powerful hydrating molecules, hair growth stimulants and structural amino acids, Revita brings you the most effective hair growth stimulating shampoo available.*

**Apple Polyphenol (procyanidin B2 and C1)** - phytochemical concentrate found in the skin of unripe apples that acts as potent antioxidant. It protects cells against free radicals, reactive atoms that contribute to tissue damage in the body. These chemical compounds are being studied extensively in labs around the world for their health effects in major diseases including treatment of hair growth. Studies showed that after sequential use, an increase of almost 80% of hair diameter and an increase in number of total hairs was shown, with no side effects.

*In 2000, Japanese researchers presented their findings to the international community on the hair growth effects of apple polyphenols - specifically one known as procyanidin B-2. They identified two successful compounds- one from chardonnay grapes, and one extracted from unripe apples. The procyanidin B-2 fraction clearly outperformed the grape extract. "Procyanidin B-2 purified from apples," stated the research team, "shows the highest activity of more than 300% relative to controls."*

## MECHANISM OF ACTION

*In the same year, in a double-blind placebo-controlled trial, nineteen men with male pattern baldness were studied with a daily topical application of a 1% procyanidin B-2 solution, extracted from apples. Ten other balding men served as controls, receiving a placebo solution. After 6 months, the study concluded:*

- *The increase in number of total hairs and terminal hairs in the procyanidin B-2 group subjects was significantly greater than controls.*
- *78.9% of subjects showed an increased mean value of hair diameter.*
- *"Procyanidin B-2 therapy shows promise as a cure for male pattern baldness."*

*Following the revelations, an attempt was made to further understand the mechanism by which the remarkable hair growth effects occurred. The results were published in the prestigious British Journal of Dermatology: Procyanidin B-2, extracted from apples, promotes hair growth: a laboratory study, Br J Dermatol. 2002 Jan;146(1):41-51. In this study, the researchers concluded that procyanidin B-2 acts to diminish protein kinase C isozymes, which play an important role in the hair growth cycle. Procyanidin B-2 seems to promote hair growth by down regulating PKC in both the anagen (active growth phase) and telogen (resting phase) of the hair follicle. When the anagen phase is prolonged, and the telogen phase is shortened, increased hair growth results.*

*Two more clinical trials and a total of seven published studies have now confirmed the surprising hair growth-promoting effects of apple procyanidins. Here is a summary of those findings:*

- *Total Number of Hairs: Significantly Increased*
- *Increase in Hair Diameter: 78.9% Positive*
- *Hair Follicle Activation: Intensive*
- *Total Number of Terminal Hairs: Significantly Greater*
- *Ratio of Thicker (terminal) Hairs: Significantly Higher*

*In the most exciting development yet, Japanese researchers released a new study late in 2005. Once again, procyanidin therapy was proven successful in regrowing hair in subjects with male pattern baldness. The new study, published in the Journal of Cosmetic Dermatology, confirmed the findings of earlier studies, showing clear improvement in the number of hairs and the density of hairs in the treated area. Building on the success of earlier trials, the study was extended to 12 months in the procyanidin group, and proved that longer term procyanidin therapy was even more successful than prior 4 and 6 month trials.*

**Cooper Peptides** - Cooper Peptides have two main properties: (1) potent tissue protective anti-inflammatory agents that limit oxidative damage after tissue injury, and (2) tissue remodeling activation agents, that is, the processes for removal of damaged protein and scar tissue and their replacement by normal tissue. Studies at numerous universities and research institutes have found copper-peptides to improve hair transplant success, increase hair follicle size, stimulate hair growth and reduce hair loss.

*Research scientists at the University of San Francisco Wound Center stumbled upon very interesting results. Their discovery was made while applying a synthetically formulated compound, Copper Peptide, to severe wound areas on several patients. During this process something unusual happened. Not only did the wounds heal about 30 percent faster, but a significant stimulation of the follicular cells occurred. As a side effect, these tripeptide complexes actually grew hair around the wound area.*

*The discovery was so startling that they then applied the same Copper Peptide complex to a female patient who had suffered roughly 90 percent alopecia (hair loss) for years. After about six months of use, she had recovered almost 100 percent of her hair. Dr. Loren Pickart, the leading authority in Copper Peptide technology, describes it as being like a protein injection to the scalp.*

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Tests were then conducted with chemotherapy patients and recent hair transplant recipients, all with great success in stimulating newer and stronger hair follicles.

**Spin traps** – are very special compounds that were originally utilized in measuring free radical activity because they react with free radicals both in vitro and in vivo, producing stable complexes. The most commonly used spin trap and the standard which measures new ones is PBN - alpha-phenyl-N-tert butyl nitron. Hundreds of studies have been conducted over the last ten years that have tested PBN and other “spin traps” in numerous conditions. Later it was discovered that these spin traps had powerful free radical quenching abilities in living systems and could treat a variety of conditions. Spin traps could provide unique protection against free radical damage that complements and enhances the activities of the classical antioxidants such as vitamin C and vitamin E.

Spin traps modulate NF kappa-B regulated cytokines and inducible nitric oxide synthases that are implicated in pro-inflammatory disease conditions. A method for ameliorating a cellular dysfunction of a tissue such as the treatment of hair loss and stimulation of hair growth comprises administering a nitroso or nitron spin trap to the affected tissue. These agents inhibit the reaction of superoxide and nitric oxide to produce peroxynitrite.

Scientists discovered that nitron and nitroso spin traps have properties in the body for ameliorating cellular dysfunction in tissue attributed, in part, to high energy oxygen and hydroxyl free radicals, and enhancing recuperation of the tissue. Alpha-phenyl-N-tert butyl nitron (PBN) can be administered, for example, as an anti-alopecia agent to stimulate hair growth.

Spin traps can be administered to the skin to be treated, such as the scalp. Depending on the type of hair loss or alopecia being treated and the conditions thereof, the stimulation of hair growth can usually be obtained by topical application, preferably repeated daily application. The utility of topically applied spin traps is not limited thereto, however, and the stimulation of hair growth can include an increased rate of growth, increased hair diameter, follicular neogenesis, and the like; inhibiting hair loss or alopecia from progressing.

**Ketoconazole** - Topical ketoconazole shows itself to have an anti-DHT binding effect in the scalp. Nevertheless, it is likely that ketoconazole exhibits other methods to its anti-hair-loss effect. One such theory of ketoconazole anti-alopecia effects may be on its activity upon the removal of sebum, a fatty substance that accumulates in the scalp around the hair follicles. In addition, ketoconazole is an antifungal medication and is significant for people combating hair loss since acting as an antifungal agent it reduces scalp irritation caused by fungal colonization or infection. Reduction of the inflammatory process that occurs in male pattern alopecia is crucial.

If we first examine the role of androgens, specifically dihydrotestosterone (DHT), we find that this hormone has been thought to slowly "choke" the growth of the hair follicle by inhibiting the function of an enzyme in the hair follicle called adenylate cyclase. Suffice it to say that when DHT concentrations remain high in the scalp, we see terminal (thick, coarse) scalp hair become reduced to vellus hair (fine, thin peach fuzz).

On March 04, 2001, at the American Academy of Dermatology Meeting in Washington DC, scientists presented the findings of a study done on 1% ketoconazole shampoo which had good news for hair loss sufferers. In the study presented, one hundred male volunteers with mild to moderate dandruff and somewhat oily scalp, were using in a double-blind fashion either a 1% ketoconazole shampoo or a 1% zinc pyrithione shampoo, 2-3 times a week for 6 months.

Analysis of the different parameters set up in the study shows that the hair diameter gradually increased with ketoconazole use (+8.46%) over a 6 month period, whereas the diameter showed a trend to decrease with zinc pyrithione use over the same period (-2.28%). The sebum excretion rate was reduced with ketoconazole (-6.54%) while it increased with zinc pyrithione (+8.2%) over the same period of time. The number of hairs shed over a 24-hour period was reduced by 16.46% with ketoconazole and 6.02% with zinc pyrithione after 6 months. Finally, the percentage of hairs in the anagen phase increased by 6.4% and 8.4% respectively during the study.

The results are similar to a previous study done on 2% prescription strength Ketokonazole where it was shown that use of 2% ketoconazol yielded an increase in hair shaft diameter similar to what was achieved by the control group using 2% Minoxidil and a non-medicated shampoo.

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**Rooibos** - Rooibos or Red Bush Tea - a hardy shrub indigenous to the North Western Cape of South Africa - is an exciting new botanical ingredient with potent antioxidant and anti-inflammatory properties well documented in medical literature. In alternative medicine Rooibos is often prescribed for nervous tension, allergies, stomach and digestive problems. Results from an independent study also showed a significant improvement in hair loss.

Studies were initiated at an independent laboratory (Dermascan, France) to study the effect of the use of Rooibos in a hair lotion on a group of healthy persons who were suffering from the problem of hair loss. A 90 day trial was conducted comparing a hair lotion containing Rooibos with a placebo lotion.

After 90 days results showed a significant increase of the hair growth in the lotion containing Rooibos compared with the placebo. An increase in the hair growth was observed with 89% of the volunteers with no undesirable reactions (irritation or allergy).

The participants were next asked to fill in a questionnaire. When the results were tallied, 67 percent rated their hair loss as zero or low, 78 percent saw a low to medium improvement, 45 percent saw a low to medium regrowth of hair, and 63 percent considered their hair had become smoother and shinier. Conclusion: results show that most of the volunteers had a remarkable improvement in both the increase of hair growth and the decrease in hair loss.

**MSM** - Sulphur is present in protein-rich foods containing high levels of the amino acids methionine and cysteine. These foods include meat, fish, legumes, nuts, eggs, and vegetables, especially onions. However, sulphur has recently become a popular nutritional supplement and topical treatment thanks to the discovery of methylsulfonylmethane, or MSM.



The use of MSM as a nutritional supplement and topical application is relatively recent. An American chemist named Robert Herschler, began studying MSM in 1955. However, another man, Dr. Stanley Jacob with Oregon Health Sciences University in Portland, is considered by many to be the father of MSM. Dr. Jacob found that simple marine life like algae and plankton convert inorganic sulphur to organic sulphur compounds. These compounds are known as dimethylsulfonium salts. These salts are transformed into dimethyl sulfide (DMS), which is released into the atmosphere and is converted by ultraviolet light into dimethyl sulfoxide (DMSO). When DMSO oxidizes, it turns into MSM and is absorbed by plants that become food for animals and humans. MSM is a white, crystalline powder that is odorless and nearly tasteless. When taken as a dietary supplement, MSM proved to have the same health benefits as DMSO without side-effects such as bad breath, itchy skin, nasal congestion, and shortness of breath.

Why does MSM help with the development of stronger hair? Various scientific studies have proven that MSM contributes a definite normalizing effect on body functions. The sulfur normally provided to the body by MSM is required for healthy collagen and keratin which are essential for healthy hair, skin and nails. MSM also has proven antioxidant benefits which can disrupt or alter damaging chain reactions of lipid peroxidation in the cell membranes.

MSM has been widely used as a dietary supplement without any reports of allergy or intolerance related to its use. Supplements of MSM are comfortably assimilated without side effects. There are no known contraindications.

**Caffeine 4%** - Active caffeine ingredient helps to regulate the effects of testosterone levels. Male pattern baldness is known to occur in individuals with sensitivity to testosterone, causing damage to hair follicles that eventually leads to baldness. Caffeine is a xanthine alkaloid compound that acts as a stimulant in humans. Caffeine is a central nervous system (CNS) stimulant, having the effect of warding off drowsiness and restoring alertness.

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*The independent study at the University of Jena used hair samples from the scalps of young men entering into the first stages of hormone-related hair loss. The study relied on a hair organ culture that used four different types of testing samples. The first was a nutrient-based sample, the second a testosterone only sample, the third was a caffeine only sample and the fourth a mixture of caffeine and testosterone.*

*According to the research, the results showed that the samples containing the caffeine nutrient helped to stave off hair loss and encouraged new hair growth, while the sample that relied on testosterone only led to increased hair loss. But perhaps the most impressive was the testosterone and caffeine sample, which helped to prevent further hair loss.*

*The results showed that using the caffeine treatment average growth was increased by around 46 per cent and the life cycle of the hair was extended by 37 per cent, when compared to the control study.*

**Carnitine Tartrate - L-Carnitine**, a vitamin-like nutrient, occurs naturally in the human body and is essential for turning fat into energy. Active energy metabolism is an essential prerequisite for the growth of strong and healthy hair. In biological systems ATP acts as the universal energy currency. One of the most potent bio-actives that significantly increases cellular ATP content is carnitine tartrate.

*Statistical evaluation demonstrated a significant increase in ATP equivalents in human hair roots treated with carnitine tartrate, showing that carnitine tartrate is an ideal ingredient for hair care formulations, providing energy for the optimal environment to produce strong and healthy hair.*

*Throughout the test period ATP content within plucked hair follicles was determined twice daily using a commercially available test kit. Statistical evaluation of baseline adjusted values demonstrated a significant increase in ATP equivalents in human hair roots treated with carnitine tartrate. These effects were absent in the placebo group, thus underlining the stimulating activity of carnitine tartrate.*

*The outstanding bio-activity of carnitine tartrate was furthermore demonstrated in a second study, assessing the effects after a single application of a shampoo formulation supplemented with carnitine tartrate. Again, ATP levels in plucked human hair follicles were significantly increased.*

**Amino Acids: Ornithine, Taurine, Cysteine** - Amino acids are the building blocks of protein, from which hair is created. They are assembled in the correct sequence by stem cells to form keratin, a complex and immensely strong hair protein. Vital amino acids have to be replaced consistently, as damage is accumulated over time. We can replace a combination of these lost amino acids directly into the hair, where they are shown to provide significant tensile benefits to the hair shaft.

Hair is composed primarily of proteins (88%). These proteins are of a hard fibrous type known as keratin. Keratin protein is comprised of what we call "polypeptide chains." The word, polypeptide, comes from the Greek word "poly" meaning many and "peptos" meaning digested or broken down. In essence, if we break down protein, we have individual amino acids.

Many (poly) amino acids joined together form a "polypeptide chain". Two amino acids are joined together by a "peptide bond", and the correct number of amino acids placed in their correct order will form a specific protein; i.e. keratin, insulin, collagen and so on. The "alpha helix" is the descriptive term given to the polypeptide chain that forms the keratin protein found in human hair. Its structure is a coiled coil. The amino acids link together to form the coil and there are approximately 3.6 amino acids per turn of the helix (coil). Each amino acid is connected together by a "peptide bond". The peptide bond is located between the carbon atom of one amino acid extending to bond with the nitrogen atom of the next amino acid.

In many individuals the extremities, including the top of the head, are the most difficult places to maintain blood flow. Follicles which are constantly deprived of blood, and therefore nutrients, cannot produce hair properly. Lack of proper nutrients, amino acids, minerals and vitamins can certainly hamper hair growth.

L-Arginine is a semi-essential amino acid synthesized by the body from L-Ornithine. Arginine + Ornithine support protein synthesis because they are involved in the transport and storage of nitrogen. The usage of taurine corrects the "rigidification" of the connective sheath that surrounds the Pilosebaceous unit and hair follicles, specifically those affected by pattern hair loss. This is a novel and previously undisclosed angle on hair loss treatment that has yet to be touched upon in any of the medical literature or prior publications.

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*The amino acid, L-cysteine speeds up hair growth and increases hair shaft diameter resulting in fuller hair. L-cysteine has been reported to facilitate longer hair growth, beyond what is genetically programmed. L-cysteine also provides potent antioxidant protection to the hair follicle. Users of topical n-acetyl-cysteine have reported hair regrowth.*

**Emu Oil** - *The emu, dromaius nova hollandiae, is a flightless bird part of a group called ratites which also includes the ostrich and the kiwi. Modern Australians learned early on from the Aborigines the many valuable qualities in the emu and its oil. The earliest research studies in emu oil come from Australia, and Australia continues to export emu oil to this day.*

*In the United States today there is a growing network of research labs interested in emus and their incredible oil. Emu oil is rendered from a thick pad of fat on the back of the bird that was apparently provided by nature to protect the animal from the extreme temperatures in its Australian homeland. Emu oil is deep penetrating and super hydrating to the skin - an all-natural tissue nutrient. Michael Hollick, MD, Ph.D., Professor of Medicine, Physiology, and Dermatology at Boston University School of Medicine conducted a study involving emu oil and hair growth. His study found that there was a 20% increase in growth activity of skin that received emu oil compared to skin that received corn oil. Looking at the hair follicles Dr. Hollick realized they were much more robust, the skin thickness was remarkably increased suggesting that emu oil stimulated skin growth and hair growth. Additionally, the study showed that over 80% of hair follicles that had been "asleep" were woken up, and began growing.*

*Emu oil is anti-inflammatory, which may be in part why it stimulates hair growth. Emu Oil has also been shown to be a 5 alpha reductase inhibitor in target tissues when topically applied, which likely contributes significantly to its hair growth properties. A third important property of emu oil is that it is bacteriostatic.*

*Emu Oil contains a multitude of Essential Fatty Acids (EFA) which helps to "feed" the skin. Consumers who suffer from natural forms of baldness have reported hair re-growth. Since Alopecia Areata only suppresses the hair follicle (vs. killing the hair follicle), emu oil may have an effect to assist with hair regrowth.*

**Biotin** – Biotin is a member of the B-vitamin family and a major component in the natural hair manufacturing process -- it is essential to not only grow new hair, but it also plays a major role in the overall health of skin and nails. The beneficial effects of biotin on hair may be linked to its ability to improve the metabolism of scalp oils. Biotin when absorbed by the scalp may promote hair growth and it is able to penetrate the hair shaft making it expand which actually thickens the hair cuticle.

Biotin is used in cell growth, the production of fatty acids, metabolism of fats and amino acids. It plays a role in the Krebs Cycle, which is the process in which energy is released from food. Biotin is so important to hair health, that many dermatologists prescribe biotin supplements to their patients as part of their medical treatment for hair loss.

**After applying Revita with a gentle massage, you should leave it on the scalp from 1 - 2 minutes before rinsing. Then repeat and leave on the scalp for 3 - 5 minutes. If desired, follow with a high quality conditioner. For optimal results, Revita should be used at least 5 times per week.**

**This formulation is contraindicated in individuals with a history of sensitivity reactions to any of its components. It should be discontinued if hypersensitivity to any of its ingredients is noted.**

## MECHANISM OF ACTION

## DIRECTIONS OF USE

## CONTRAINDICATIONS

**Q. Is Revita safe ?**

A. Revita primarily contains compounds that are not only safe in topical use, but actually dramatically enhance overall skin health. The other active ingredients such as Ketoconazole have been tested in clinical studies and have been shown safe.

**Q: Can I use hair sprays, mousses, gels, etc.?**

A: Hair spray, gel, and other styling aids are not recommended since they tend to clog the hair shaft. However, you can use them while using Revita.

**Q: Can I have my hair colored or permed while using Revita ?**

A: While there is no evidence that coloring or perming hair can lead to or even worsen hair loss, it is generally not recommended for people with hair loss. If you are experiencing hair loss then perming and coloring hair is not recommended. However, this will not interfere with Revita.

**Q: What is SLS/SLES free ?**

A: SLS means Sodium Lauryl Sulfate and SLES means Sodium Laureth Sulfate, commonly used low cost detergents in shampoos and cleansers. They are linked to skin irritation, skin drying and hair loss due to follicle attack. Revita is Sodium Lauryl Sulfate and Sodium Laureth Sulfate free, and that means that Revita does not irritate you scalp and preserves your hair follicle health.

**Q: Can I blow dry my hair after using Revita ?**

A: Extreme heat damages the proteins in the hairs making them fragile. Nevertheless, if you need or want to blow dry your hair, you can do it after using Revita.

**Q: Who is a candidate for Revita ?**

A: Ideal candidate is someone with little hair loss or at the beginning stages of hair loss, since it is much easier to prevent hair loss than to grow new hair. Someone who is concerned with hair loss prevention should start using Revita immediately.

**Q: What type of results should I expect with Revita ?**

A: When deciding to use Revita, it is important to have realistic expectations. Depending of severity and duration of your hair loss, it could take some time to see hair growth. In fact, during the first 2 weeks of treatment you may actually notice increased hair loss as old hairs are being pushed out and the hair follicles start growing new hair. Do not become alarmed with this and just stick to the treatment.

**Q. Does Revita have any systemic side effects ?**

A. No, when used as directed, Revita active ingredients have a long history of use both orally and topically.

**Q. Does Revita work for women?**

A. Yes. In most cases, the cause of hair loss in women is surprisingly similar to men. Fortunately for women, estrogen helps to protect the hair follicle from the destructive effects of DHT. However, many women develop thinning hair and loss due to fluctuation of estrogen levels and/or over production of DHT. Revita can help protect the hair follicle from DHT resulting in a thicker, fuller and healthier hair.

**Q. I am using other topical treatments. Can I use Revita at the same time ?**

A. Yes. Revita has no side effects and does not cross react with other topical treatments. You can safely opt to use Revita with other products, and we strongly recommend the association with Spectral.DNC for more severe hair loss or Spectral.RS for thinning hair.

**Q. Do I need to use Revita for a long time ?**

A. Once you have reached the desired results, you should continue to use Revita as your regular shampoo to maintain the revitalized hairs and a healthy scalp.

**Q: Is stress a factor in hair loss ?**

A: When the body is under significant physical and emotional stress it is possible that the immune system will produce anti-bodies that attack hair follicles, and this results in bald patches or diffuse loss. Stress-induced loss will respond very well to Revita and you should keep using Revita as your regular daily shampoo to keep your scalp healthy.



**PERFORMANCE**

**REVITA®**



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