

Clinical Study on Injuv®: Demonstrates Improvement of Skin Moisture Content

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Abstract

The efficacy of a patented, low molecular weight hyaluronic acid complex in a soft gelatin capsule (Injuv®) was evaluated in a human clinical study. The moisture content and pH of the skin's surface were measured to assess the barrier function of the skin. After taking Injuv® for 30 days, the subjects in the test group showed significant improvement in skin moisture without any adverse effects.

Introduction

Hyaluronic acid (HA) is a natural biopolymer, non-toxic, and fully biocompatible with the human body. It is an essential compound for maintaining healthy skin, joints, and connective tissue. Almost fifty percent of the total HA found in the body is found in the skin. The most important biological function of HA is cellular hydration, since it has good water absorption and retention capability. Retaining and holding moisture is vital to healthy skin. HA helps regulate the life cycle of skin cells, increasing their longevity and increasing the efficiency of maintenance and repair.

The *stratum corneum* layer found in the epidermis is most important for the moisture balance of the skin. The living layers lying beneath are almost constantly hydrated. For many years it was thought that HA is found in significant concentrations only in the underlying dermis layers of the skin. Researchers now know that the visible epidermis also contains significant amounts of HA. The half-life of HA in the epidermis is less than 24 hours. Without the proper levels of HA in the upper layers of the epidermis, the skin appears dull and wrinkled.

In its natural state, the molecular weight of HA is impossible for the body to absorb orally. However, a process has been developed whereby HA is treated enzymatically to produce lower molecular weight polymers that are capable of absorption through oral administration. This process results in a low molecular weight HA (a unique formula branded as Injuv®), which easily enters the epithelial cells for absorption by the intestinal tract.

Materials and Methods

Subjects

There were 107 volunteers between the ages of 30 to 50 years, (average age 44.79 ± 6.44 years). Subjects were randomly assigned to receive Injuv® (test group) or placebo (control group) using random number tables.

Product Sample

The test group received Injuv® soft gels containing 70 mg HA complex from enzymatically digested rooster comb, standardised to 9% hyaluronic acid (6.3 mg HA); the control group received placebo.

Dosage Regimen

According to a recommended dosage regimen, subjects were administered two soft gels of Injuv® or placebo twice daily for 30 consecutive days, during which they were instructed to maintain their normal dietary and lifestyle habits.

Dermatological examination

Skin surface moisture content and pH were measured before and after supplementation.

Analyzer

A SHP88 probe (Corneometer®) with pH-meter was employed. This compact device measures moisture and pH of the skin surface.

Measurement

The dermatological measurements were performed in a well-ventilated room under controlled temperature (23°C) and humidity (60% relative humidity) conditions.

Site of Measurement

The midpoint of the glabella—the space between the eyebrows and above the nose on the forehead.

Test Procedure

Under quiet ambient conditions, a single experienced operator conducted the measurements before and after administration of the sample or placebo. The moisture content and pH were measured at the test site on the forehead within 15 minutes after rubbing the area with a piece of clean cotton soaked with distilled water.

Statistical Analysis

The data from the test results was calculated and analyzed using common statistical analysis software, SPSS10.0. The comparison between groups was conducted by t-test, and comparison of the data from the same group before and after the test was conducted by paired t-test.