

# HAPLEX® Plus

Clinically-Proven Beauty from within and Joint care Sodium Hyaluronate

Sodium Hyaluronate (Hyaluronic Acid, HA, Hyaluronan) is a mucopolysaccharide composed by repeating disaccharide units of D-glucuronic acid and  $\beta$ -acetyl-D-glucosamine. It is a substance found in all vertebrates, mainly in connective tissue such as cartilage, bone, skin



## 1 Absorption

- The decrease of HA in the body with age
- Oral absorption of HA

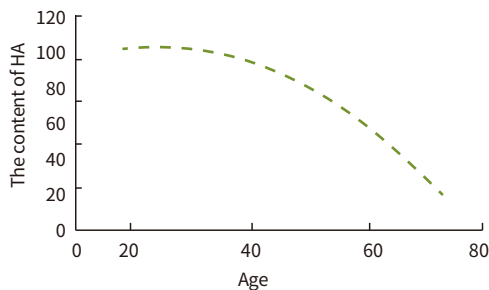


Fig.1 Tendency chart for HA content in the body decreases with age. (Longas MO, Russell CS, He X-Y, 1987)

Aging slows down the metabolism of cells, and HA synthesis in our body is decreased. As a result, there is not enough water in the collagenous fiber and elastic fiber of the skin, thus wrinkles appear. Because of the loss of HA within the synovial fluid of joints, it can lead to osteoarthritis.

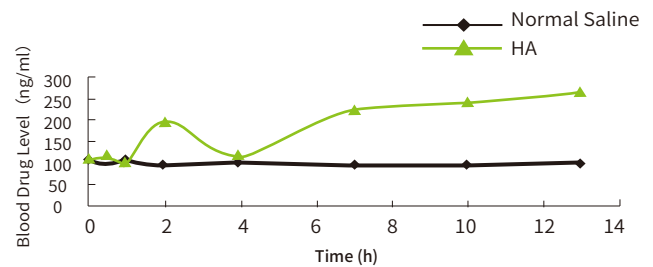


Fig.2 Mean serum concentration-time curve of HA after a single oral dose of HA. (JIANG Qiu-yan, LING Pei-xue, et al. 2005.)

The synthesis and degradation of HA in the body is a dynamic balanced process. It is proved by numerous studies that oral intake of HA can increase the precursors of HA and promote the synthesis of HA. So oral administration of HA can increase endogenous HA to achieve health and beauty from within.

## 2 Functions

- Beauty from within

### Anti-wrinkle

The study was run by A&G laboratories in Spain with 29 volunteers who consented to participate in the study. Oral HAPLEX® Plus has proved to be effective, with statistically significant results on the parameters of skin firmness and elasticity. Oral administration of HAPLEX® Plus can nourish skin from within and make it more elastic.

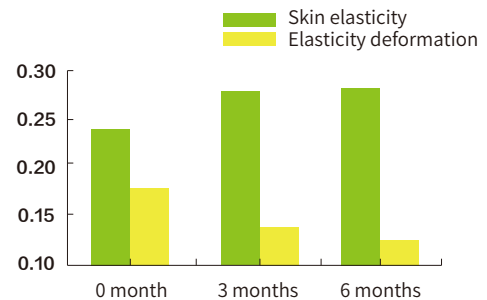


Fig.3 Changes in skin elasticity and elasticity deformation HAPLEX® Plus 150mg/day

## ● Joint Care

### Improvement of degenerative osteoarthritis

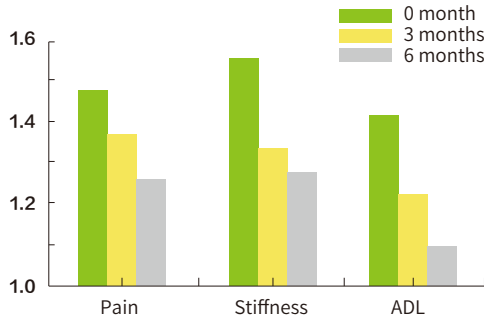


Fig.4 Changes in WOMAC scores  
ADL: Difficulties in the Activities of Daily Living

By A&G laboratories, Spain;  
HAPLEX®Plus 150mg/day, chondroitin sulfate 800mg/day;  
Volunteers: N=29, diagnosed with osteoarthritis of the knee.

In the Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC), score 0 represents lightest symptom, whereas score 4 represents the severest symptom for each variable. Score for each category decreased significantly after the 180 days study. Oral administration of HAPLEX®Plus and chondroitin sulfate decreased the symptoms of the osteoarthritis. The effect of chondroitin sulfate in a dose which is below the therapeutic dose is most probably insignificant and therefore we can conclude that the effectiveness in this study is mainly from HAPLEX®Plus.

### Improvement of joint health for people who practice intense physical activity

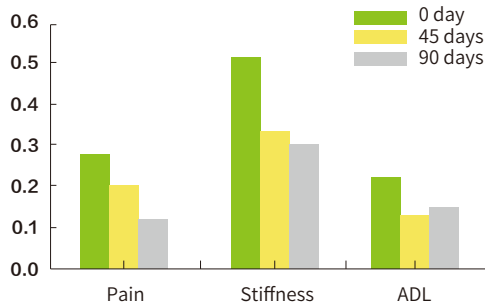


Fig.5 Changes in WOMAC scores  
ADL: Difficulties in the Activities of Daily Living

By A&G laboratories, Spain; HAPLEX®Plus 150mg/day;  
Volunteers: N=33, performing very intense physical activity.

In this study, it was observed that the pain suffered by the volunteers is relieved and the functionality of their articular cartilage is significantly improved. Oral administration of HAPLEX®Plus can promote joint health.

### Improvement of osteoporosis for postmenopausal women

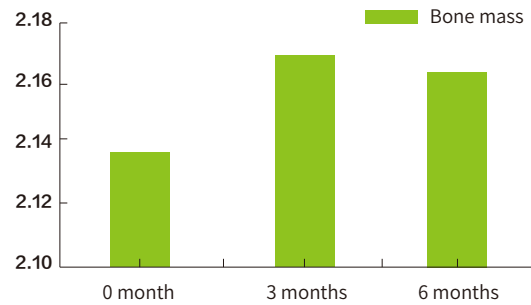


Fig.6 Changes in bone mass

By A&G laboratories, Spain; HAPLEX®Plus 150mg/day;  
Volunteers: N=29, postmenopausal women with osteoporosis.

In this study, it was observed that the osteoporosis care of postmenopausal women is improved. Oral administration of HAPLEX®Plus has proved to be effective, with statistically significant results on the bone mass and generalized pain.

## 3 Applications

Application & Dosage forms	Functional Claims
<p><b>Common food:</b> beverage, jelly, dairy products, etc.</p> <p><b>Health food:</b> usually in combination with Collagen, Vitamins, Chondroitin Sulfate, or Glucosamine to make tablets, capsules or oral liquid these popular forms</p>	<p>Joint Care</p> <p>Beauty-From-Within</p> <p>Antioxidation</p> <p>Digestive &amp; Eye Health</p>



CREATIVE TECHNOLOGY FOR VIBRANT LIFE

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