

Innovative Beauty Solutions Based on Collagen Peptides

**Scientific Update, new Concepts, Claims
and Highlights from Global Markets.**

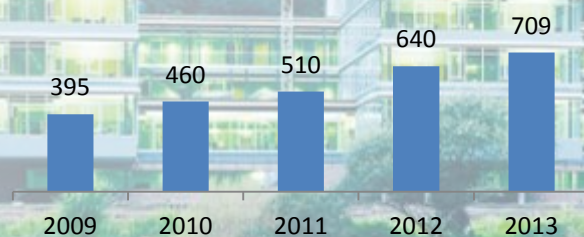
Dr.-Ing. Stephan Hausmanns
GELITA AG – Eberbach, Germany

GELITA

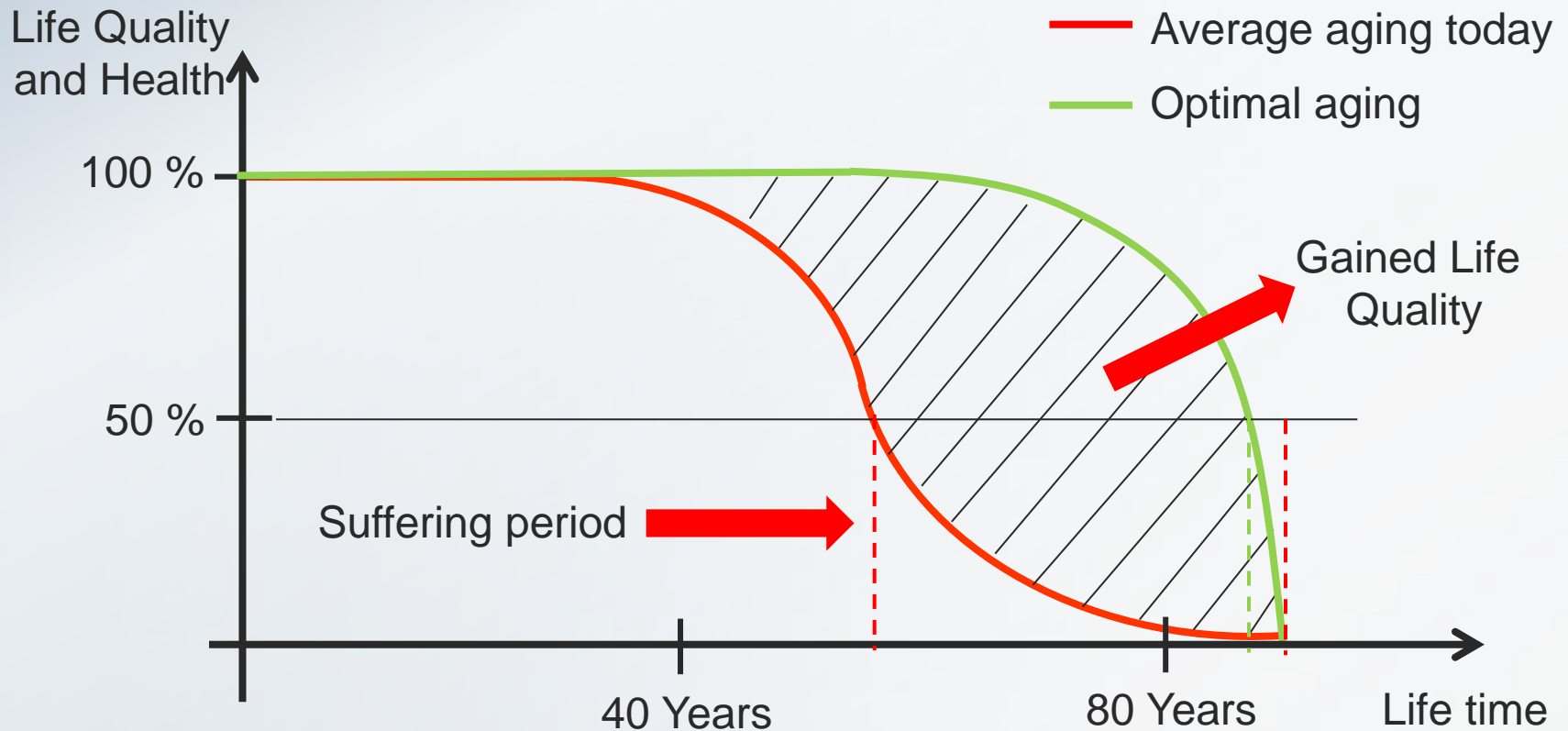
GELITA at a Glance.

- **Legal Form:** GELITA is an independent, unlisted stock ingredient company owned by the founding families
- **Founding Year:** 1875
- **Headquarters:** Eberbach, Germany
- **Production Plants:** 21
- **Sales Offices:** 4
- **Market Share:** ~ 22% (Collagen Protein Market Leader)
- **Employees:** ~ 2,650

Turnover in Mio. €



Beauty-from-Inside in the Context of Healthy Aging:

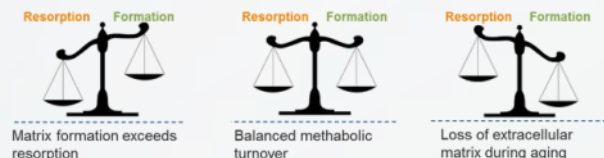


Gaining of Quality in Life, Rather than Living Longer

Different Aging Mechanisms

1. Hormonal aging Decreased hormone production
High levels of stress hormones
2. Inflammatory aging Chronic silent Inflammation (Rheumatism, Asthma
(Skin and cartilage degeneration)
3. Glycolytic aging High intake of carbohydrates
Glycation of body proteins
4. Oxidative aging Increased Oxidative stress, LDL Oxidation, UV-Aging
Decreased antioxidative defense shield
DNA Telomer reduction, Cancer development
Membrane damage, Mitochondrial membrane damage
5. Nutritional aging Malnutrition or over nutrition
Micronutrient deficiencies

- Continues anabolic & catabolic balance








Nutrition and supplements can influence aging processes positively – including Collagen Peptides

Hollywood's Beauty Secret: Collagen Peptides

- Angelina Jolie reportedly eats collagen marshmallows to look youthful
- The marshmallows are enriched with Collagen Peptides and shall replace collagen injections
- Jolie prefers the collagen candy to plastic surgery



Sources:

-  <http://www.bunte.de/meldungen/angelina-jolie-kollagen-marshmallows-als-anti-aging-mittel-65648.html>
-  http://www.gala.fr/l_actu/news_de_stars/angelina_jolie_des_marshmallows_pour_la_ligne_304207
-  <http://www.belfasttelegraph.co.uk/life/fashion-beauty/jolie-eats-collagen-mallows-29838765.html>
-  <http://beleza.terra.com.br/sua-pele/pele-angelina-jolie-aposta-em-doces-de-colageno-dizfonte,098821de176f2410VgnVCM5000009ccceb0aRCRD.html>
-  <http://www.all4women.co.za/entertainment/celebrity-fashion/angelina-jolie-eats-collagen-marshmallows-to-look-youthful>

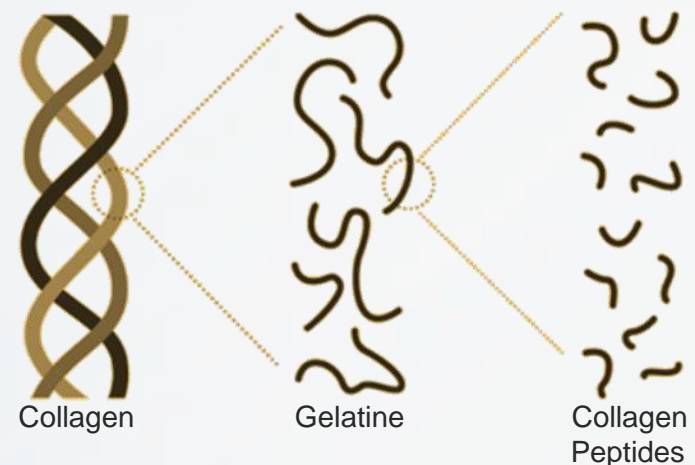
What are Collagen Peptides?

Collagen peptides are food ingredients derived by enzymatic hydrolysis of collagen.

- Clean label, non-allergenic
- Clearly water soluble
- High pH and temperature resistance
- Superior sensorial profile, almost neutral in taste
- High water binding capacity
- High bioavailability
- Bioactive stimulant for physiological effects



**Manifold Solution
to Excellent Functionality**



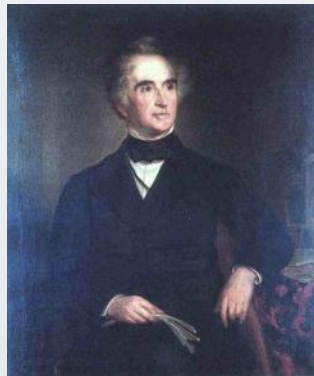
Collagen Peptides are Bioactive



The Nutritional Therapy of Saint Hildegard of Bingen (1098 – 1179)

„He who has stabbing pain in his limbs and joints as well as stomach and intestinal pain, should frequently eat plenty of well-cooked beef trotters, including fat and calluses. That soon gets rid of the pain.“

Paris, National Library, Cod. 6952



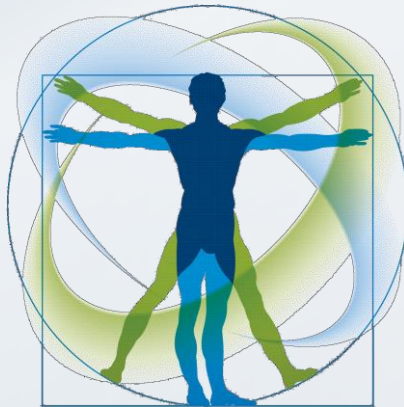
**Justus von Liebig
(1803 – 1873)**

“Collagen glue” can Contribute to Rebuild and Maintain Collagen Structures and could cause an Increase in Collagen Mass

³⁷⁴ Voit (1872) S. 310. Originalquelle: Liebig, Thierchemie, 2. Auflage, 1843, S. 100.

Collagen in Humans

“Adding stability to life” - Collagen is a structure protein and the main component of connective tissue



Collagen (dry mass):

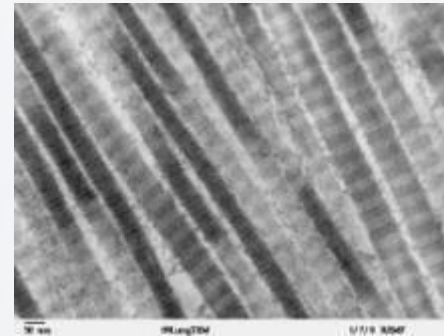
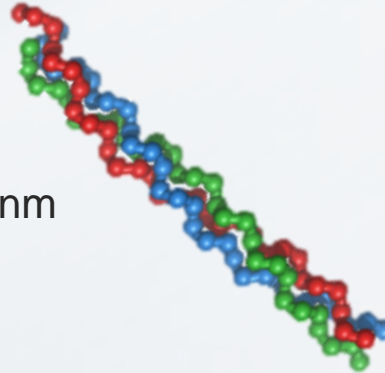
- ~ 75% of skin
- ~ 70% of cartilage
- ~ 85% of tendons and ~ 70% ligaments
- ~ 95% of organic bone matrix (~20% of total bone mass)
- ~ 6% of the weight of muscles
- Also abundant in blood vessels, intervertebral disc, blood-brain barrier, eye (Cornea), dentin & tooth holding apparatus, intestine wall, fascia tissue, etc. etc.

With ~ 30% of the whole body protein content, collagen is the most abundant protein in humans

Role of Collagen in Human: Adding Stability to Life

Collagen Molecule

- Right handed triple helix
- Length ~ 300 nm, \varnothing 1.5 nm
-acts “like a rope”



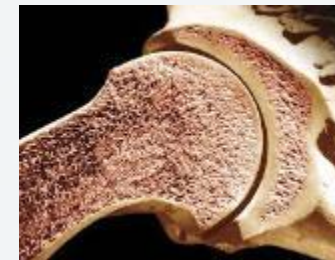
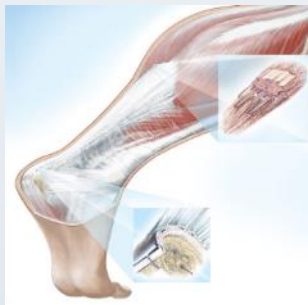
Collagen
(REM picture)

Rope



Physiological functionality

- Tensile strength of collagen fiber > steel
- High water binding capacity

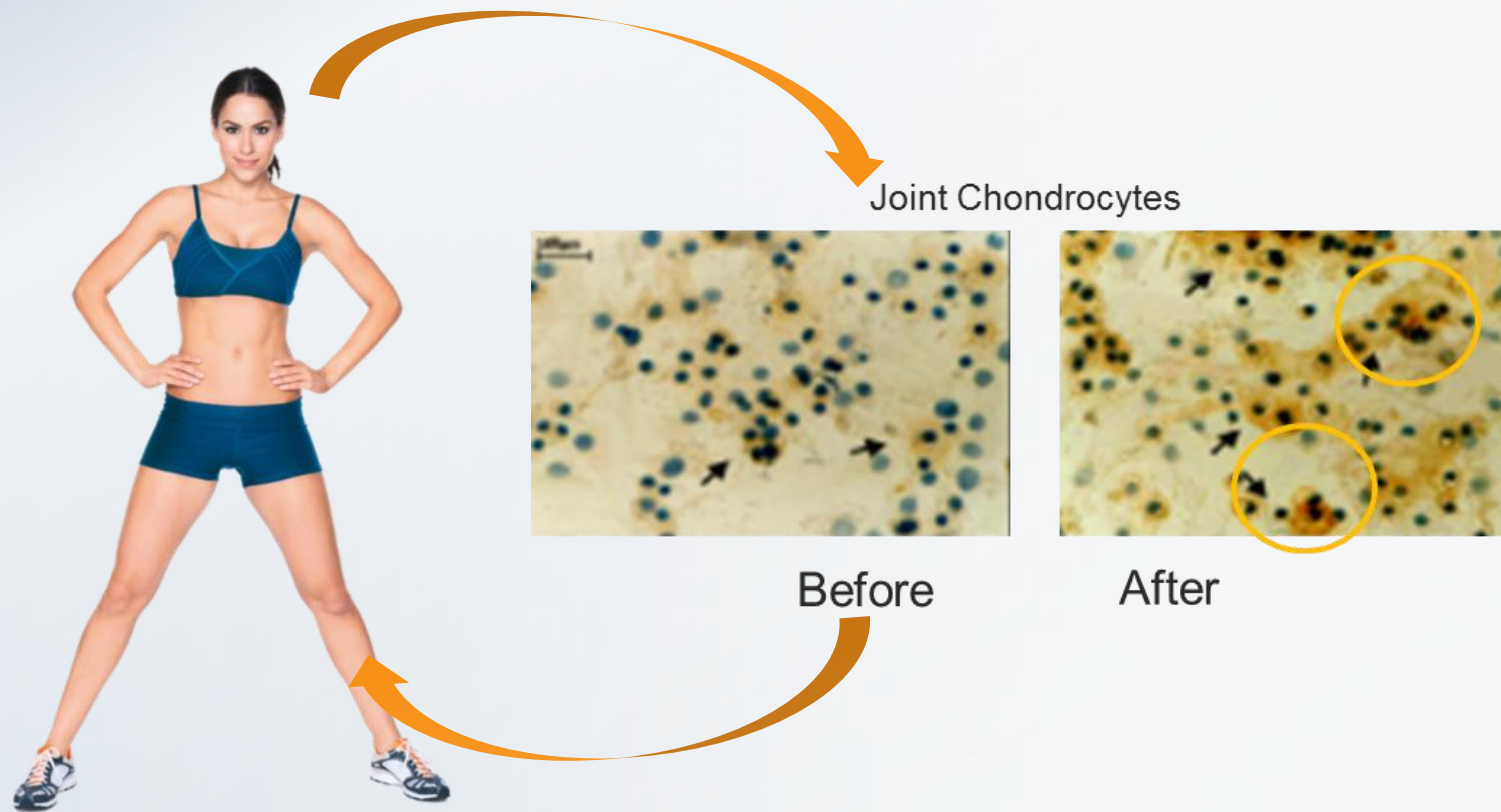


Bone

Bridge



Mechanism: Cell Stimulation after Oral Ingestion, Partially Intact Absorption & Distribution to Target



* Oesser et. J. Nutr. (1999) 129

Stimulation of Connective Tissue

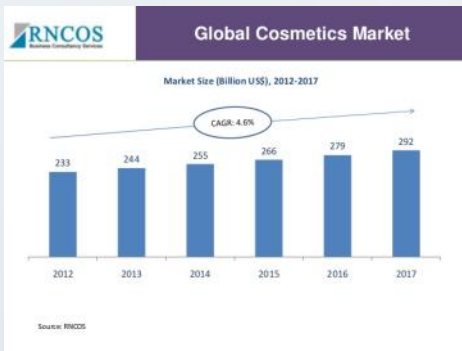
3 Different Cells as Targets



Collagen Peptides Bridging Gaps between Food & Cosmetics



- **Cosmeceutical**
- **Nutraceutical**



Beauty from Within

- Scientifically approved elasticity improvement and wrinkle reduction

VERISOL®
Beauty from Within

Reduces Cellulite Considerably

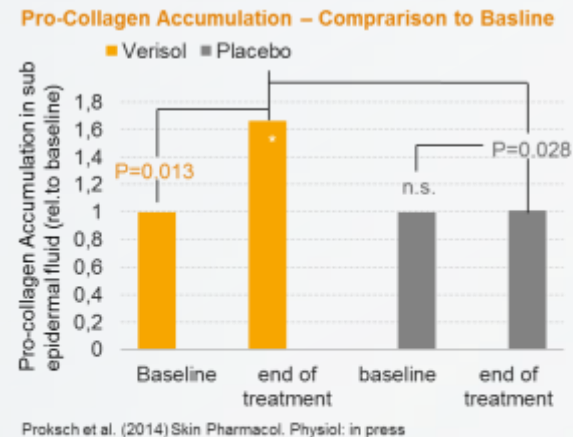
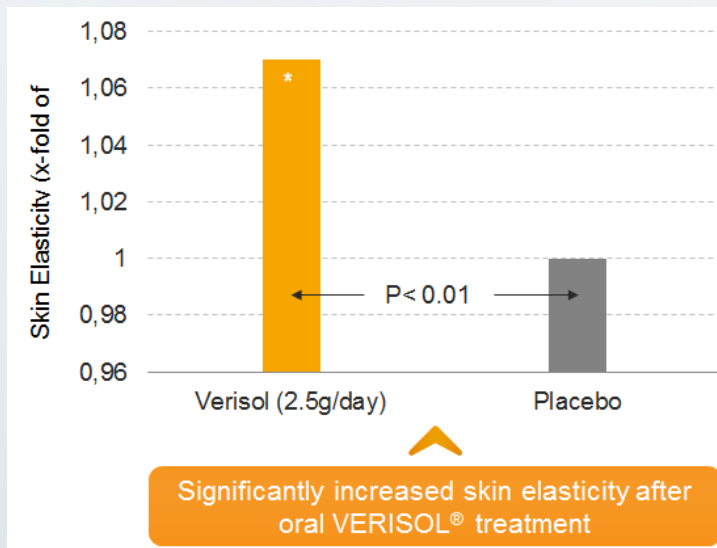
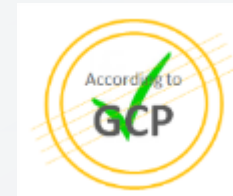
- Increases dermis density

VERISOL®
Beauty from Within

Collagen Peptide Skin Appearance Studies

Three double-blind, randomized, placebo-controlled studies (2012 - 2014)

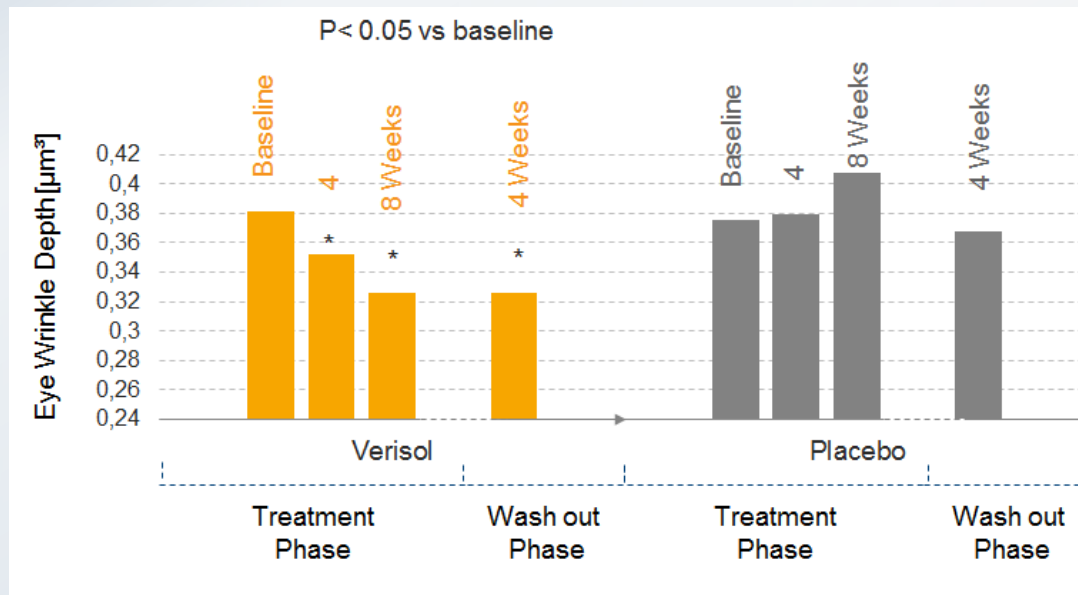
- Total >250 participants, Caucasian women, healthy skin
- Age ~ 30 - 65
- Test period 8 weeks, 4 weeks wash-out (in one study)
- 2.5 g daily dose of Collage Peptide vs. placebo



Pro-collagen increased by 60%

Eye Wrinkle Assessment

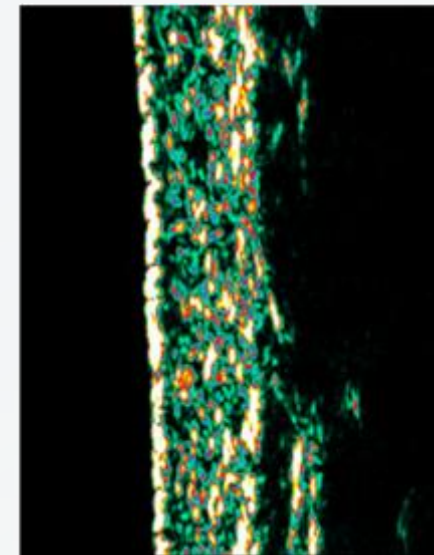
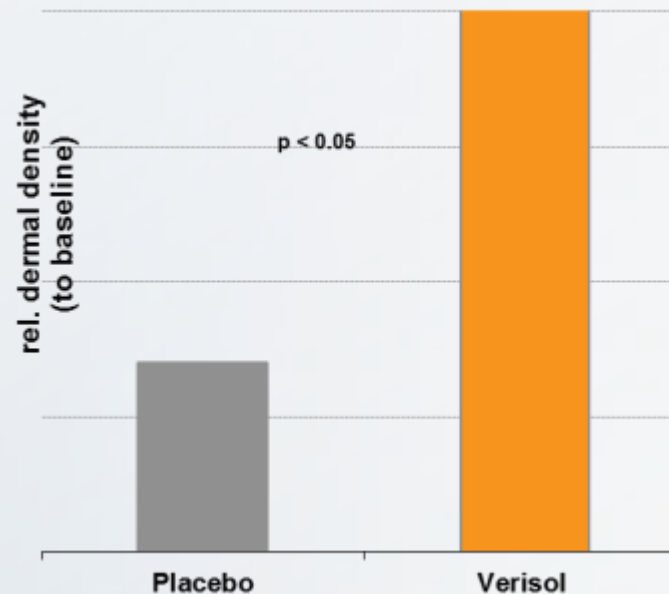
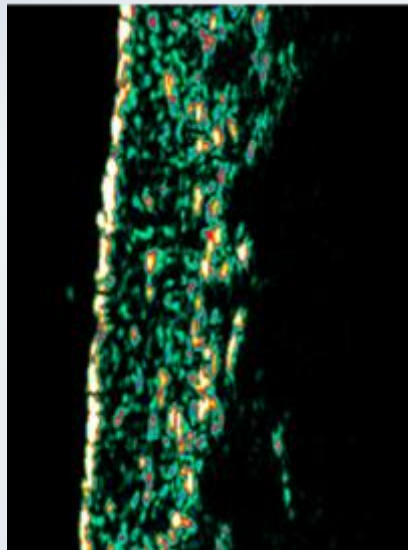
Wrinkle Depth - Comparison to Baseline



Proksch et al. (2014) Skin Pharmacol. Physiol 27: 113-119

Significant Changes of Dermis Density

Significant higher dermis density with
VERISOL® supplementation vs.
placebo after 6 months



Collagen Peptide Scientific Clinical Substantiation on Skin Health & Beauty

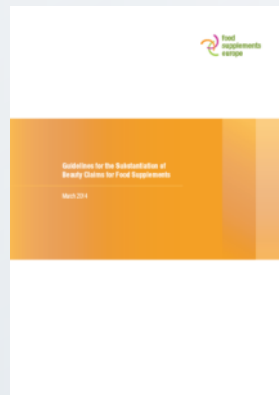
- Scientific substantiated claims for VERISOL® with regard to Beauty-from-Inside:
 - Increases skin firmness and elasticity
 - Reduces wrinkles and fine lines
 - Stimulate metabolism of collagen, proteoglycans and elastin in the (deeper) skin
 - Enhances skin smoothness and reduces the appearance of fine surface lines
 - Offers nutrients for healthy skin
 - Rejuvenate skin from within



Mai 2015: VERISOL® Claims approved by Health Canada

What's about „Beauty Claims“

- Claims related to only beauty like e.g. elasticity increase or wrinkle reduction are measure along the general rule (VO 1169/2011 EU). These s.c. „beauty claims“ are recommended by Food Supplement Europe **as long as supported by published & positive clinical RCT studies**



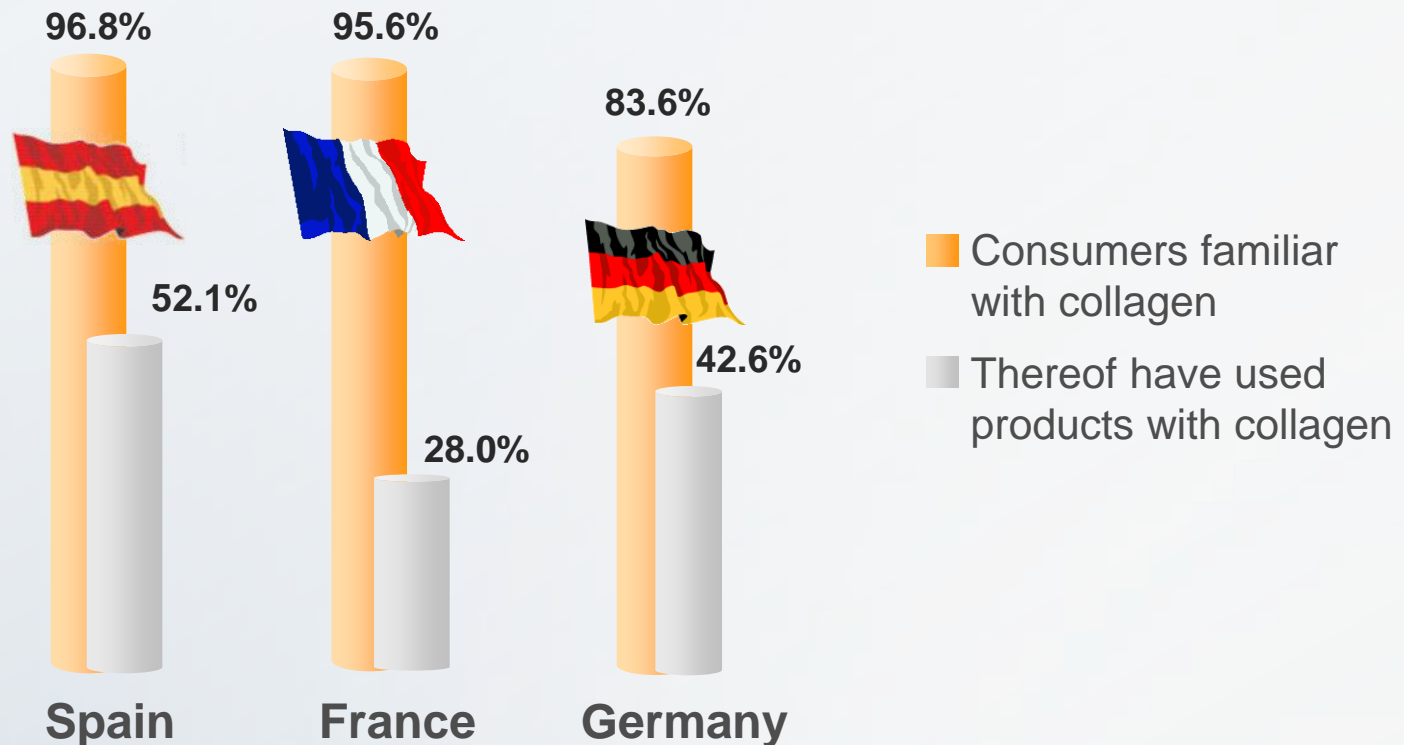
Guidelines for the Substantiation of Beauty Claims for Food Supplements, Mar

• Skin

Examples of correct beauty claims	Rationale for these claims to fall outside the scope of the NHCR
<ul style="list-style-type: none"> improve/maintain/increase* the appearance of wrinkles (decrease in wrinkles) Helps to improve skin elasticity, skin surface structure Helps to improve skin tonicity, skin firmness <p>* depending on clinical trial results</p>	<p>Appearance linked to beauty AND it is not a claim that states, suggests or implies that a relationship exists between a food category, a food or its constituents and health (Art 2.2.5)</p> <p>See EFSA guidelines, 2012: <i>Guidance on the scientific requirements for health claims related to bone, joints, skin, and oral health</i>, NDA Panel, EFSA Journal 2012, 10(5): 2702, (page 11): <i>"Health claims on the maintenance of normal structure, hydration, elasticity or appearance of the skin do not necessarily refer to a particular physiological function of the skin as required by Regulation (EC) No 1924/2006."</i></p> <p>EFSA Journal 2011;9 (4):2059: <i>Maintenance of normal structure, elasticity and appearance of the skin.</i> <i>"The claimed effects are "helps to maintain elasticity, tenderness and health of skin, structure and function of skin and mucous membrane", and "membranes cell structure". The target population is assumed to be the general population. In the context of the proposed wordings, the Panel assumes that the claimed effects refer to the maintenance of the normal structure, elasticity and appearance of the skin. The Panel considers that the claims do not refer to a function of the body as required by Regulation (EC) No 1924/2006."</i></p> <p>EFSA Journal 2011;9(7):2264: <i>Maintenance of normal skin tonicity</i> <i>"The claimed effect is "menopause/skin and hair health during menopause/cholesterol management". The target population is assumed to be post-menopausal women. In the context of the proposed wordings and the clarifications provided by Member States, the Panel assumes that the claimed effect refers to the maintenance of normal skin tonicity. No evidence has been provided on how skin tonicity could be related to skin function. The Panel considers that the claim does not refer to a function of the body as required by Regulation (EC) No 1924/2006."</i></p>

“Collagen + Beauty“ Association Well Established at the Consumers

- Collagen & Beauty association is well established at the consumers:
>80% associate collagen with Beauty (care, elasticity, connective tissue, protein)



Exemplary Collagen Beauty-From-Within Products



GELITA Health
Germany



Chocolife
Brazil



Snella
Brazil



Esentico
Hungary



Berry.En
Germany



Snella
Brazil



Ylafrut
Brazil



Probiotica
Brazil



Nestlé
MY



Grape King
Taiwan



IHS/Pura Femina
Germany



Interherb Vital
Hungary

Collagen Peptide makes Beauty go Ready-to-Drink



Rios LifeStyle Pharma, Australia: Collagen Water™



Voda Naturalna, PL: Voda Collagen



HealthVerve, USA: BBGLO

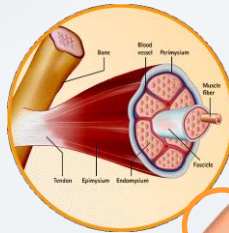


Protein drinks on the rise. It's amazing how fast industry is changing. Last year protein drinks weren't in the list. Everyone knew them, however, companies didn't see an opportunity in the market. Currently we see a huge interest in protein drinks all around the Europe. We vote that this is the biggest trend in functional beverage industry for 2014.

Collagen Peptides Stimulating Body Functions

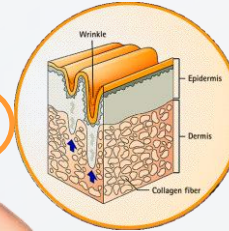
Body Toning / Sarcopenia

- Increasing muscle mass, decreasing fat mass



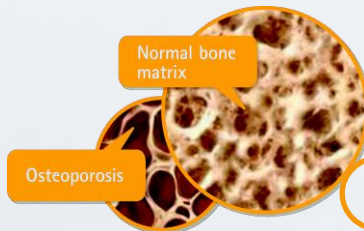
Beauty from Within

- Scientifically approved elasticity improvement and wrinkle reduction



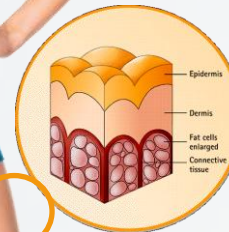
Bone Health

- Improving bone stability and flexibility



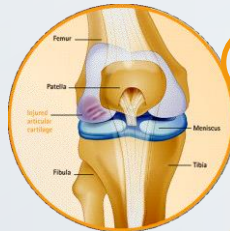
Reduces Cellulite Considerably

- Increases dermis density



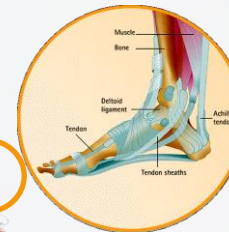
Joint Health

- Measurable recovery of joint cartilage



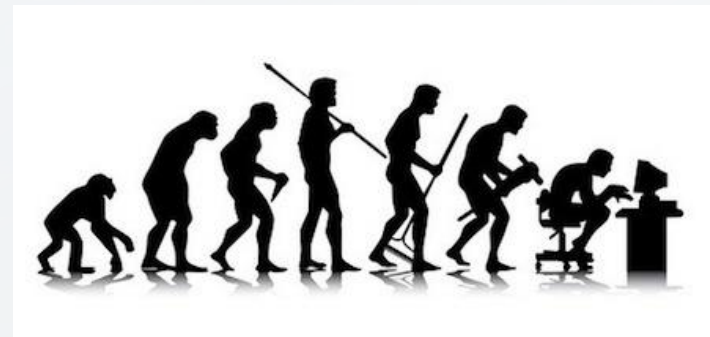
Connective Tissue Improvement

- Strengthening ligaments and tendons



Supplementation of Food – Tool for Aging Management

Human life & nutrition dramatically changed within last 50 years



“Unfortunately” human life circle of 25 years is too long for fast evolutionary adaption

*(to walk the evolutionary way humans went from 2000 BC to 2000 AC,
E. coli needs ~ 53 hours)*

Collagen Peptide in the Context of a Healthy Diet

Human bodies are conditioned to certain food composition since millenniums
Supplementation can adjust today's eating habits & life style with basic human needs

- Example: Omega-3, Fibers, Collagen



“Thank You”

“Let food be thy medicine and medicine be thy food.”

Hippocrates
470 – 370 a.d.

