HYALURONIC ACID BENEFITS RESEARCH REPORT



Hyaluronic acid (HA) offers a range of benefits, particularly in skincare and medical applications:

1. Skin Hydration:

One of the most well-known benefits of HA is its ability to retain moisture. HA molecules have a unique capacity to hold water, making them highly effective in hydrating the skin. This property helps in maintaining skin moisture levels, resulting in a plump, supple, and youthful appearance.

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8347214/

Conclusion from the above research report:

The cosmetic industry is increasingly developing active cosmetic products and cosmeceuticals with hyaluronic acid (HA) and its derivatives, known for their hydrating, regenerating, and anti-aging properties. The efficacy of HA largely depends on its molecular weight, necessitating further research on its metabolism and biological effects. Despite their growing popularity, HA-containing products still make up a small market share and often include additional active ingredients like plant extracts, vitamins, and peptides, which can enhance product claims but may also cause minor side effects. Continued technological advancements are essential to fully realize HA's potential in cosmetics.

2. Anti-Aging Properties:

HA plays a crucial role in maintaining skin elasticity and firmness. As we age, the body's natural HA production decreases, leading to a loss of volume and the formation of wrinkles and fine lines. Topical application of HA can help diminish the appearance of wrinkles and improve skin texture by replenishing lost moisture and supporting collagen synthesis. <u>https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3583886/</u>

Conclusion from the above research report :

The data indicate that HA homeostasis varies significantly between intrinsic and extrinsic skin aging. To better manage skin moisture and improve treatments for skin aging, further research is needed to understand HA metabolism in skin layers and its interactions with other skin components. This knowledge could enhance existing drugs and lead to the development of new treatments for skin aging.

3.Wound Healing:

HA is involved in the wound healing process due to its ability to promote tissue repair and regeneration. It creates a moist environment that accelerates wound closure and reduces the risk of infection. In medical settings, HA is used in various forms, such as gels or dressings, to facilitate wound healing and improve outcomes after surgeries or injuries. <u>https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8065935/</u>

Conclusion from the above research report :

Hyaluronic acid (HA), a key component of the extracellular matrix (ECM), plays various roles in wound healing, including promoting inflammatory cytokines, triggering angiogenesis, and activating keratinocytes and fibroblasts. This study investigated the effects of exogenously administered HA across a full spectrum of molecular weights (MW) and concentrations on wound healing factors both in vitro and in vivo. The results showed that high molecular weight (HMW) HA significantly promoted fibroblast and keratinocyte proliferation, enhancing granulation tissue formation. HMW HA also enhanced keratinocyte migration and upregulated genes such as IL-1 β , IL-8, VEGF, MMP-9, and MMP-13 in keratinocytes, suggesting its potential benefits for wound treatment. However, fibroblasts did not show MW dependency, with significant gene expression enhancement only for TGF- β 1 by low molecular weight (LMW) HA. In vivo, HMW HA effectively treated wounds in mice, likely through interactions with CD44 on keratinocytes and fibroblasts. Future research should explore the relationship between these effects and CD44-HA interactions.

4. Joint Health:

In the field of orthopedics, HA injections are commonly used to alleviate symptoms of osteoarthritis. HA acts as a lubricant and shock absorber in joints, reducing friction and improving mobility. Intra-articular injections of HA can help reduce pain, inflammation, and stiffness associated with osteoarthritis, allowing patients to maintain an active lifestyle. <u>https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4469223/</u>

Conclusion from the above research report:

Intra-articular hyaluronic acid is a valuable therapeutic option for managing osteoarthritis. It appears to reduce pain and improve joint function while being highly tolerable. Additionally, it can prevent structural joint damage and delay the need for prosthetic surgery, making it a safe and effective long-term treatment.

5.Eye Health:

HA plays a vital role in maintaining eye health and lubricating the ocular surface. It is present in the vitreous humor and synovial fluid of the eye, providing hydration and lubrication to ocular tissues. In ophthalmic surgeries, such as cataract surgery or corneal transplantation, HA-based viscoelastic solutions are used to protect delicate eye structures and maintain intraocular pressure.

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9790727/

Conclusion from the above research report:

Hyaluronic acid, in concentrations between 0.1% and 0.4%, is a safe and effective treatment for dry eye disease (DED). It offers lubricating, anti-inflammatory, antioxidant, and anti-toxic benefits at the ocular surface, improving both the signs and symptoms of DED. Hypotonic HA drops may provide more clinical benefits compared to isotonic

drops, though further research is needed to understand the effects of tonicity. There is a need for studies to determine the optimal HA concentration, drop frequency, molecular weight, and the best treatment approaches for different severities and sub-types of DED.

6.Hair Health:

HA is also beneficial for hair health, as it helps hydrate the scalp and hair follicles, promoting hair growth and preventing dryness and breakage. HA-infused hair care products can nourish the scalp, improve hair texture, and enhance overall hair health. Overall, hyaluronic acid offers a myriad of benefits for skin, joints, eyes, and hair, making it a versatile ingredient in skincare products and medical treatments. Its hydrating and rejuvenating properties make it a popular choice for individuals seeking to maintain youthful-looking skin and improve overall well-being. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8572598/

Conclusion from the above research report:

Overall, this study demonstrated that HYDRO DELUXE BIO (Matex Lab SpA) has dual benefits: it protects dermal papilla cells from oxidative stress and increases VEGF levels. Further in vivo experiments are needed to explore its potential for mesotherapy, a minimally invasive technique using intradermal injections for medical and cosmetic applications.

Conclusion:

In conclusion, hyaluronic acid (HA) stands as a remarkable compound with multifaceted benefits across various aspects of health and wellness. Its unique ability to retain moisture, support tissue repair, and promote overall well-being makes it a valuable asset in skincare, wound healing, joint health, eye care, and hair health.

HA's role in skincare is particularly noteworthy, as it effectively hydrates the skin, diminishes the signs of aging, and enhances skin texture and elasticity. In medical applications, HA demonstrates its efficacy in promoting wound healing, alleviating joint pain, and ensuring optimal outcomes in ophthalmic surgeries. Additionally, HA contributes to scalp and hair health, fostering hair growth and preventing dryness and breakage.

The versatility and safety profile of HA make it a preferred choice for both consumers and healthcare professionals seeking effective solutions for various health concerns. As research continues to unveil its potential and refine its applications, hyaluronic acid remains at the forefront of innovation in the fields of dermatology, orthopedics, ophthalmology, and beyond.

In essence, hyaluronic acid emerges not only as a cosmetic ingredient but also as a vital component in medical treatments and wellness routines, empowering individuals to achieve healthier skin, joints, eyes, and hair. Its profound impact on health and beauty underscores its significance in enhancing quality of life and inspiring confidence in individuals worldwide.

*The information displayed herein has not been evaluated and/or approved in any form by the Japan Ministry of Health, FDA and/or similar body in Japan or elsewhere.