The Truth About Aging Skin:
The Structural Changes in Aging Skin
Booklet
When it comes to skin, there are four major distinctions between young and aged skin:

- Epidermal thinning
- Wrinkles
- Flattened DEJ
- Collagen fragmentation

The Aging Epidermis

- Thinner appearance
- Slower cell turnover rate
- Decreased number of melanocytes (pigment producing cells) and Langerhans cells, (the skin’s immune cells)
- Lipids produced by our skin decreases

The Aging DEJ – Dermal Epidermal Junction

The DEJ is the region just below the epidermis, but above the dermis with fingerlike projections called rete pegs. Aging brings about some changes in this region:

- Flattened DEJ
- Less surface area
- Fewer nutrient transfer from epidermis to dermis
- Contributes to the overall thinning of the epidermis

The Aging Dermis and Hypodermis

- Loss of dermal volume
- Less nutrient transfer, as blood vessels are reduced in numbers
- Reduced sensory innervation of skin nerves into the skin
- The dermis and hypodermis become atrophied, with a reduction of collagen and certain glycosaminoglycans (GAGs), and adipose tissue of hypodermis
- Decline in sweat gland numbers and sebum
• Terminal hair turns to vellus hair
• Loss of melanocytes in hair bulb result in graying hair

Photoaging

• UV radiation is the most important factor in extrinsic aging
• UV radiation causes oxidative stress and increases the production of collagen-degrading enzymes, such as matrix metalloproteinases.
• Many skin cells, including immune cells like Langerhans cells, pigment cells like melanocytes, and signaling molecules that trigger inflammation are all altered with UV radiation.
• End result of DNA damage from UV rays is skin cancer, which is prevalent in certain skin types especially in lighter Fitzpatrick scale people.
• The basis in the prevention of skin aging is photoprotection.

Biochemical factors in skin aging

• ROS
  o Reactive oxygen species (ROS) are one of the most important contributors to skin aging
  o ROS damage can cause lipid peroxidation, which is damage to cell membranes resulting in premature aging, skin cancer and even cell death
  o Antioxidants fight the damaging effects of free radicals and ROS

• MMPS
  o Matrix Metalloproteinases (MMPs) are collection of enzymes that break down the extracellular matrix in the dermis
  o MMPs are critical in remodeling connective tissue
  o Inflammation and UV radiation can trigger activation of MMPs
  o The natural inhibitors of MMPs in skin are diminished with aging
  o MMPs can also be inhibited by topical agents such as retinoids

• AGES
  o Advanced glycation end-products (AGEs) are the result of a process called glycation
Glycation results in AGEs and free radicals which contribute to the cross linking of protein fibers, or the loss of elasticity associated with aging.

The net result is that elastin and collagen cannot be broken down.

Skin becomes stiff and yellow-brown.

These biochemical changes, combined with the natural progression of aging, bring about fine lines, wrinkles, pigmentation, texture changes and loss of tensile strength.
IDI From the Beginning

IDI: Setting the Gold Standard for Professional Success

For over 25 years, The International Dermal Institute has pushed the skin care industry envelope to its limits, literally redefining professional excellence and offering skin therapists a unique opportunity to reach their personal best in the process. We do it by offering the most challenging and rewarding postgraduate skin and body therapy curriculum available anywhere today, with 38 postgraduate Training Centers worldwide; 18 of which are located in the U.S.

What we offer our students goes far beyond technical training and access to expertise you won’t find anywhere else. Our mission is to stay in touch with that original sense of “electricity” – the feeling of connecting with destiny, and creating your own future with your own heart, mind and hands. A postgraduate skin care education at The International Dermal Institute offers that connection literally around the world, and gives students their own opportunity to get “plugged in” as part of a uniquely rewarding profession which thrives on human touch and communication.

This charge to be the best in postgraduate skin care is led by Jane Wurwand, a professional skin therapist. Since founding IDI in 1983, she’s continually carried an urgent message to skin therapists: education is the key to improving every aspect of your business, from understanding galvanic current to creating a seamless booking system!

IDI is at the forefront of the evolution of skin care, elevating the respect and success of the skin care industry and the professional skin therapist around the world. Today the industry is just as competitive, and IDI maintains the international gold standard for postgraduate skin and body therapy training. Stand tall as a member of The International Dermal Institute’s worldwide student body committed to professionalism, and having the best hands in the business!

Continuing with our legacy of innovation, we are supporting FITE, Financial Independence Through Entrepreneurship, a global platform to fund women worldwide into their own
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