

Environmental Pathological Aspects of Skin Aging

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Aging has three main components, intrinsic related to DNA and heredity, extrinsic through the effects of environment, nutrition and the lifestyle and a third component related to emotions and psychology. Telomeres are repeated sequence of DNA containing no genetic information. They cap and seal the ends of the chromosomes and protect them from damage. With time, there is progressive shortening of the telomeres with each cell division. They could be the clock that determines loss of proliferative activity of the cell leading to apoptosis. Wrinkles, dilated pores, telangiectasias and hyperpigmentation are some manifestations of skin aging. Aging causes serious decrease in metabolic activity of fibroblasts, protein synthesis and quantity of collagen. There is loss of adhesion capacity of fibroblasts to collagen fibers and disorganization of elastic fibers. The percentage of collagen production in wrinkle is reduced by 70%, the contractile bundles of actinomyosin are formed and composition of the dermis and the structure of macromolecules of the skin are modified. The etiology of skin aging may include impaired production of collagen and elastin, thickening of stratum corneum, laxity, impaired tone, texture and elasticity, fat atrophy and loss of support. Aging and sun exposure may lead to hyperpigmentations, telangiectasias, laxity, elastosis, wrinkles and enlarged pores. Solar UV radiation induces matrix metalloproteinases, resulting in impaired integrity of collagenous extracellular matrix, attacks keratinocytes and fibroblasts, resulting in activation of cell surface receptors, breakdown of collagen in extracellular matrix and shutdown of new collagen synthesis. Treatments may include laser, collagen, elastin stimulation, rejuvenation, surgery.

Biography:

Professor M F Al Homs completed MD at the University of Damascus, School of Medicine in 1980. He did his postdoctoral studies at the University of Illinois, School of Medicine in USA. He became Diplomat of American Board of Pathology and Fellow of the College of American Pathologists in 1990. Currently, he is Chairman of Pathology Department, College of Medicine, RAK University and Senior Consultant Pathologist at the University Hospital in UAE. He presented more than 90 conference papers, published 5 books and book chapters and more than 40 papers in reputed journals.