

Scientific Study 2013

The Effects of MedColl ® Bio-Marine Collagen Pre-cursor Supplement Components on Human Dermal Fibroblasts

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BACKGROUND: The appearance and function of human skin changes profoundly during aging and with exposure to external factors such as ultraviolet radiation and smoking. Fine wrinkles and reduced elasticity, classic signs of aging skin, are associated with behavioural changes in skin cells and in the protein scaffold that supports them (called the dermal extracellular matrix). A major component of this protein matrix is collagen. Over time these skin collagens degrade and must be replaced. The main cells responsible for manufacturing collagen and other proteins in the skin are called dermal fibroblasts. These highly specialized cells are normally found just under the skin where they can maintain the protein scaffold. As skin ages, its ability to replace and maintain the protein scaffold also decreases. One theory proposed to try and prevent, or even reverse the appearance of skin aging is to boost dermal fibroblast activity. The aim of this study was to examine if the MedColl® Bio-marine Collagen Pre-cursor supplement affected human dermal fibroblasts in vitro.

STUDY DESIGN: Primary human dermal fibroblasts were grown under standard conditions in vitro. The effects of the MedColl® Bio-marine Collagen Pre-cursor supplement components on dermal fibroblast cell proliferation (cell division) were measured using a standard cell proliferation assay (MTT-based). Control cells were grown in normal medium with no supplements.

RESULTS and STUDY IMPLICATIONS: The preliminary results of this study show that the MedColl® supplement significantly increased the rate at which dermal fibroblasts divide leading to increased numbers of fibroblasts. Co-treatment of the dermal fibroblasts with MedColl® components, particularly in combination with Vitamin E and Co-enzyme Q10, resulted in a greater number of dermal fibroblasts. This increase could lead to increased collagen production in the human skin.