

Aging and Botox

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Many factors play in to why over time, people eventually accumulate wrinkles on their face and their body. In order to discuss this in depth, we must first understand the integumentary system and what exactly is changing in the body.

So what makes up the skin?

The skin is divided up into layers: epidermis, dermis and subcutaneous layer. Within these layers are many accessory structures, but one of the most important structures concerning aging is collagen. Collagen is the “scaffold” of the skin. It helps keep the skin strong and firm. Elastic fibers also have a big impact. They're similar to a rubber band. They help the skin retract after being stretched or pulled.

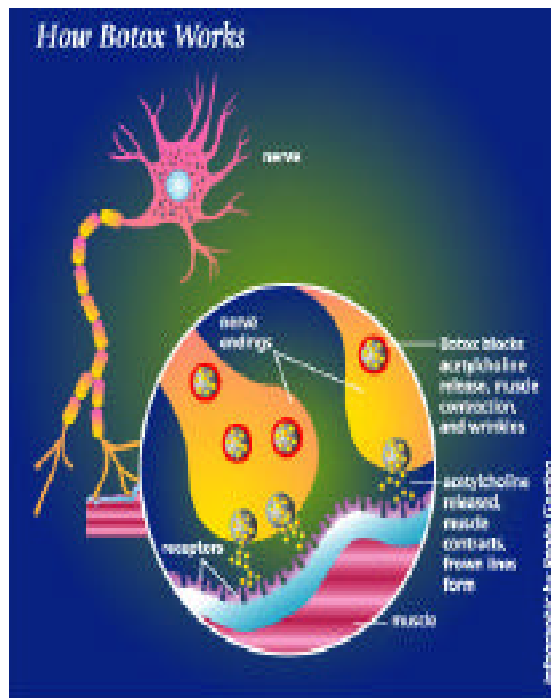
So what happens as we age?

Collagen fibers create a cross-link which strengthens the skin and keeps it stable. However, there is a strong parallel between stiffness of the skin and increase in cross-links. According to Purba's article, there is an enzyme controlled process that develops and matures the cross links. These cross links become mature and stable. A non-enzymatic glycosylation process of proteins, Maillard process, produces endproducts that induce molecular damage by forming cross links in long lived proteins, collagen in particular.

This is not the only thing that happens. Elastic fibers become weaker and loose elasticity. The number of Langerhans cells diminish significantly. They become somewhat impaired and lose its function, which may be a reason why the dermal immune function decreases as we get older.

Treatment:

Avoid smoking, and excessive exposure to sun. A study shows that people with high intakes of vegetables, olive oil, mono-unsaturated fat and legumes, lower dairy intake had less skin wrinkling. Another solution is botox. Botulinum Toxin Type A.



Citations:

- Skin, Aging and Natural Photoprotection, Wulf, HC, Micron (Oxford, England) v35(3) pg 185-91
- Skin Wrinkling: Can food make a difference?, Purba MB; Kouris-Blazos, A, Journal of American College of Nutrition, 2001, February; v20(1); pg 71-80
- www.fda.gov