

## SCIENTIFIC ABSTRACT

### AGING SKIN WITH ASSORTED COSMETIC CONCERNS - WHAT REALLY WORKS?

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The concept of rejuvenation is the hottest topic among the public and doctors. Some factors interact to produce the evolving picture of the aging face. These are atrophy of fat, facial osteoporosis, muscular hypertrophy, gravity/senescence of cells, and collagen loss.

The various strategies to treat include repair, recovery, replace, redrape and rejuvenate. The therapies: topical, non invasive, and surgical, which include cosmeceuticals, chemical peels, fillers, botulinum toxin, soft tissue augmentation, fat transplantation, non laser light devices, non invasive lasers, resurfacing, hair removal, radiofrequency lasers, liposuction. On the face, the aging manifest as wrinkles, sallowness, dryskin, pigmented blemishes, solar lentigenes, seborrhoeic warts, sebaceous hyperplasia and telangiectasia.

Cosmeceutical actives will be discussed as the other modalities are covered in the congress. Cosmeceuticals help to restore the skin barrier, deliver sun protection, a source of photoaging. Novel ingredients, antioxidants, peptides, growth factors, are intended to reverse and prevent effects of aging on the skin.

- a) Topical retinoids, tretinoin (trans retinoic acid), adapalene, tazarotene, serve as agonists for RAR and RXR nuclear receptor family, regulate gene expression profiles, have effect on photodamaged, aging skin attributes. Naturally occurring derivatives of betacarotene are retinol, retinaldehyde, retinyl esters, retinoic acid. Retinoids regenerate collagen.
- b) Vit E, tocopherol, scavenges lipid peroxy radicals, antioxidant protection.
- c) Vit C: regenerate Vit E. Also neutralizes free radicals, protect intracellular structures from oxidative stress.  
Ultraviolet light accelerates photo aging by 90%. ROS reactive oxidative species, superoxide anion, peroxide, singlet oxygen are generated with UVL, producing deleterious effects, causing direct DNA changes to cells, cell membrane, proteins.  
ROS upregulate AP-1, transcription factor, increase matrix metalloproteinase, (MMP) enzymes which break down collagen. Sunscreens and sun avoidance are needed.  
NF kB is another transcription factor induced, it contributes to inflammation and aging. Elastin is lost too. Inflammation leads to metabolism, and production of more damage.
- d) Topical B3, niacinamide, proVit B5 panthenol help in reducing TEWL, pigment spots, sallowness, improve texture, reduce wrinkles, increase collagen.
- e) Ceramides, cholesterol, free fatty acids, are used in physiological lipids to repair the skin barrier.
- f) AHAs, BHAs, PHAs. As special ingredients in moisturizers increase dermal G glycosaminoglycans.
- g) Botanical anti oxidants: soy (glycine soja), silymarin (milk thistle), pycnogel (pine bark)
- h) Botanical anti inflammatories: ginkgo biloba, green tea (Camillia sinensis), flavinoid, polyphenol, epigallocatechin 3 gallate reduce UVB induced inflammation. Others are grapeseed, echinacea and garlic.
  - i) Nutritional antioxidants: a lipoic acid, ubiquinone, genistein soy isoflavone, help UV protection, retard aging.
  - j) Metals: Selenium (metal antioxidant)
- k) Endogenous growth factor: role in growth of collage, elastin, GAG.
- l) Wrinkle "botox" creams: Peptides; a new hexapeptide, argireline, has anti wrinkle effects, like a botox cream. It inhibits neurotransmitter release by interference with protein complex, and increase the threshold for muscle activity.

These need more clinical trials to substantiate their claims.

The " X" factors often missing include healthy living, balanced diet, positivity, activity e.g. yoga and a peace of mind.