

SHIELD TECHNOLOGY

The skin is the first and most important barrier organ that is subject to lifelong exposure to a large variety of environmental factors. The term "exposome" describes the totality of exposures to which an individual is subjected from conception to death. It includes both external and internal factors as well as the human body's response to these factors.

Skin aging is a complex process affected by both genetic and environmental factors, which leads to a progressive loss of cutaneous function and structure.

Intrinsic aging is predominantly genetically determined and occurs as a natural consequence of physiological changes over time. The clinical changes associated with chronological skin aging include skin atrophy, loss of elasticity, fine wrinkles, dryness and prominence of vasculature.

Extrinsic aging is related to the cumulative effects of environmental factors such as solar radiation, smoking, pollution, nutrition and lifestyle factors. Extrinsically aged skin is characterized by deep wrinkles, rough texture, telangiectasia, lentigines and irregular pigmentation.

The overall appearance of the skin with age is related to the relative contribution of environmental factors superimposed on the degree of intrinsic aging. It was proposed that environmental factors which are part of the **skin aging exposome** fall into the following major categories:

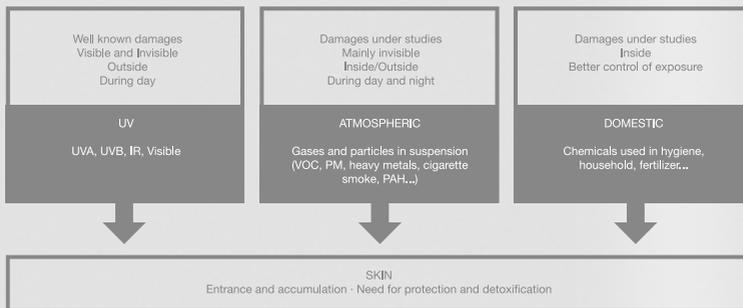
- Sun radiations: ultraviolet radiation, visible light and infrared radiation,
- Air pollution
- Tobacco smoke
- Nutrition
- A number of less well studied, miscellaneous factors (temperature, lack of sleep, stress, ...)



Fig 1. These Exposome factors have been identified to potentiate skin aging. Exposure to sun, pollution and tobacco are now well known to trigger molecular processes that damage the skin structure, leading to the aged skin appearance. Other, less well studied factors are recognized as potentiators for skin aging. These factors have been shown to act either separately or by interacting with each other and potentiating the process.

Because exposure to solar radiation is not the only thing you need to be aware of, **SHIELD TECHNOLOGY** targets all the possible skin problems caused by sun radiation; UVA, UVB, IR and visible light; enhancing the natural skin resilience for an optimum global skin protection.

The exclusive **DNA-Protect complex** offers a state of the art defense against aging and prevents from the harmful effects caused by the sunlight and the environmental pollution: the erythema, aging, spots, and DNA damage. Its formulation combines the power of biotechnological green ingredient from a red calcified algae, diatomaceous sea bottom powder and natural fermented polysaccharides in order to globally protect the skin.



Decrease in

- DNA damage
- Particle & Heavy metal deposition
- Cell toxicity
- Free radicals release
- Cell membrane lipoperoxidation
- Mitochondrial toxicity
- Intracellular oxidative stress
- Temperature

DNA-Protect complex: a Global Protection

a "breathing" interactive shield acting as a screen against solar radiation, pollutants and their damages:

- **DNA protection**
- Protection of membrane lipids > **Lipid cell membrane protection**
- Protection of Keratinocytes against Ultra Violet, Infra Red & visible radiations > **Keratinocytes protection & Photo-aging prevention**
- Protection of Langerhans cells against Ultra Violet & Infra Red radiations > **Immune cells protection**
- Thermoprotective (thermal insulation) profile due to its bioceramic behavior > **Thermal aging protection**
- Protects against intra and extracellular damage from pollution. Preventing oxidative stress, inflammation and premature aging caused by pollution > **Shields skin from atmospheric & domestic pollution (carbon particles, particulate matter, heavy metals & chemicals)**