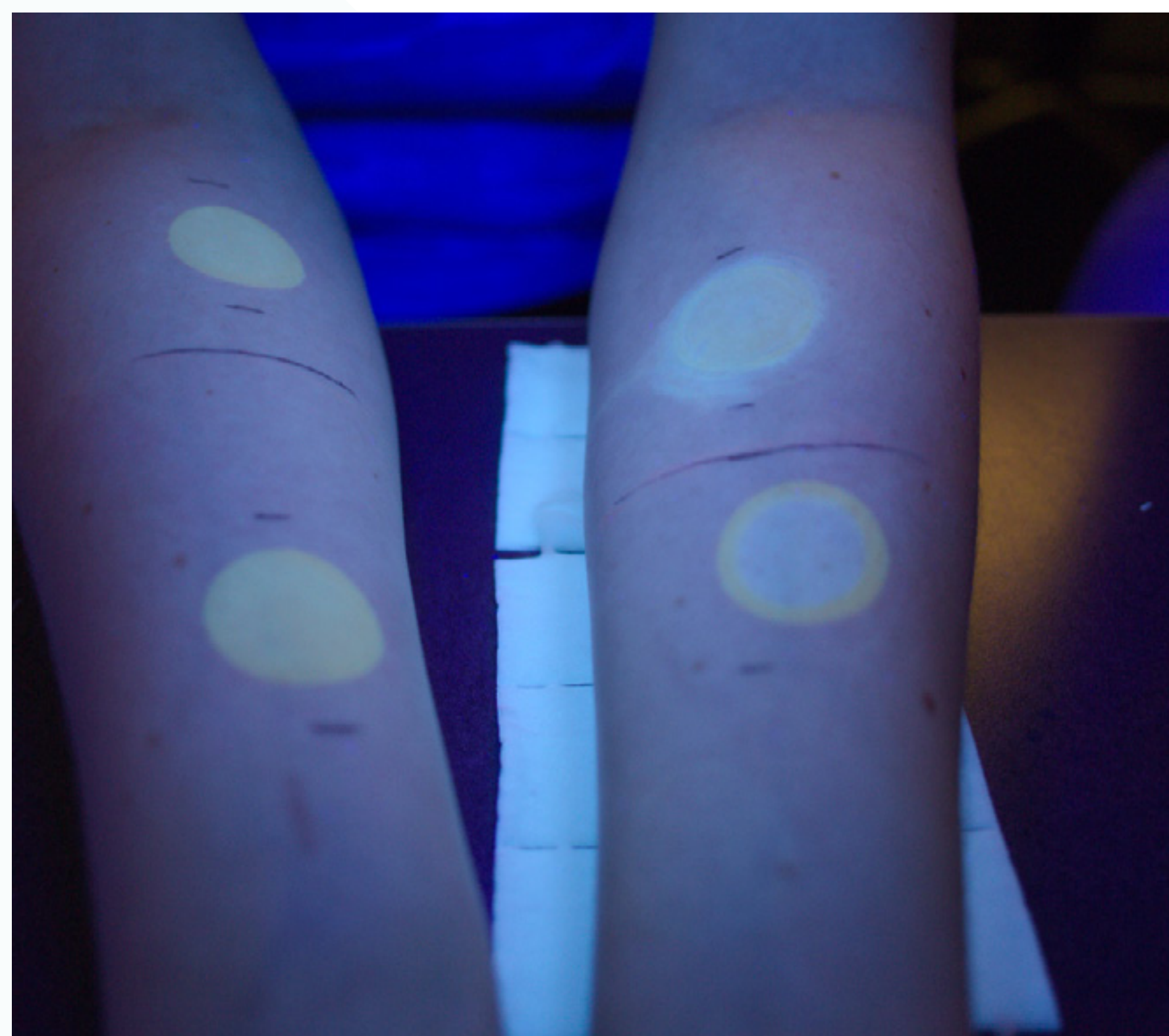


# Anti-Aging Test Strategies: Characteristics of the Skin Layers

## Environmental stressors

- Sun, HEV
- Pollution
- Tobacco
- Temperature
- Nutrition
- Stress
- Lack of sleep



## Protective layer

- Acid mantle
- Microbiome



## Epidermis

- Lipid content decreased (SC)
- Flattening of dermal-epidermal junction
- Number of enzymatically active melanocytes decreases by 8% to 20% per decade
- Number of Langerhan's cells decreases
- Capacity for re-epitheliazation diminishes

- Skin hydration ↓
- Sebum secretion ↓
- Elasticity ↓
- Skin surface pH ↑
- Protection and permeability barrier ↓
- Pigmentation ↑
- Decreased lipid content and altered lipid organization
- Desquamation and proliferation ↓
- Healing and immune function ↓



## Dermis

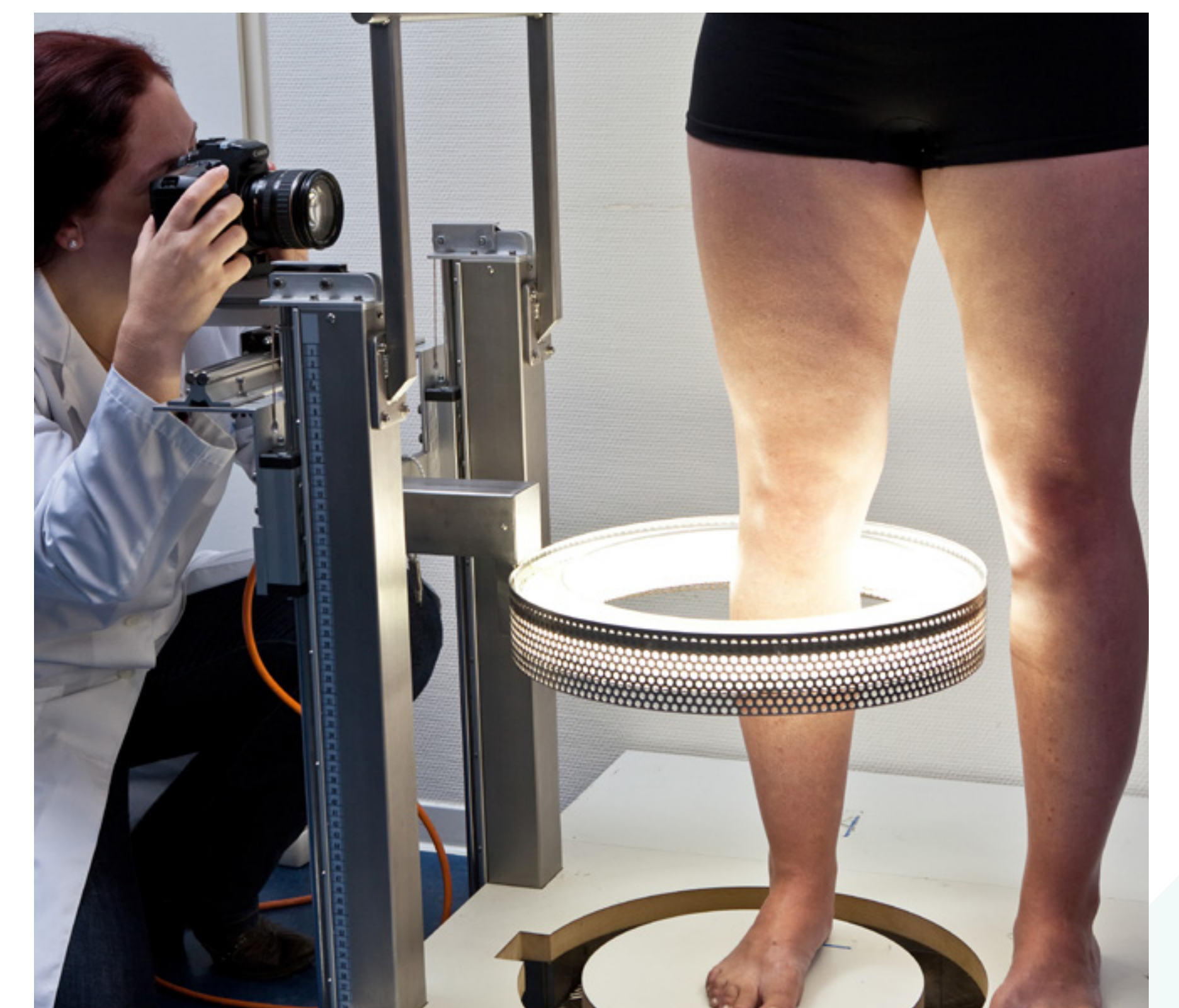
- Decrease in thickness
- Decrease in thickness (atrophy)
- Vascularity decreases as does cellularity
- Decrease in collagen synthesis
- Pacinian and Meissner's corpuscles degenerate
- Structure of sweat glands becomes distorted, numbers of functional sweat glands decreases
- Elastic fibers degrade
- Decrease in number of blood vessels

- Degradation of Collagen and Elastin ↓
- MMP-1 ↑
- HA-production ↓
- Glycation ↑
- Deep Wrinkles ↑
- Sagging ↑



## Subcutis

- Change in distribution of subcutaneous fat.



## Appendages

Sebaceous, apocrine, and eccrine glands and hair follicles

- Hair loses normal melanin
- Hair thinning
- Decreased number of sweat glands
- The nail plate becomes abnormal
- Reduced sebum production

- Sebum secretion ↓
- Inflammaging ↑
- Pore size ↑
- Hair ↓

