

Dermatological Manifestations of Stress in Normal and Psychiatric Populations



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KEYWORDS

- Psychodermatology • Psychosomatic • Stress • Mind • NICS • Psoriasis • Acne • Vitiligo

KEY POINTS

- Stress is a key factor that affects all organs including the skin.
- Stress has been associated with premature aging of the skin and neoplasia.
- Psychological stress takes its own toll on the skin, being a known trigger for several dermatological disorders.
- Stress may be the result of how a person deals with dermatological disorders that affect the skin from the cosmetic and functional standpoints.
- Diseases that affect the skin have important effects on the emotional well-being and quality of life of the individual.
- The dermatologist, psychiatrist, psychologist, and family physician need to become familiar with this subject so as to be able to provide a proper bio-psycho-social approach to the patient with a skin disease or the cutaneous manifestations of a psychiatric disorder.

INTRODUCTION

The skin is the largest organ of the body, and one that is constantly challenged by our environment. It is well adapted to serve as the first line of defense against invading microbes and penetration of toxic substances and irritants. It allows us to regulate our body temperature through the microcirculation of the skin and perspiration.

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Abbreviations	
ACTH	Adrenocorticotrophic hormone (corticotropin)
BDD	Body dysmorphic disorder
CRH	Corticotropin-releasing hormone
CSE	Cigarette smoke extract
DRES	Drug rash with eosinophilia and systemic symptoms
DSM-V	<i>Diagnostic and Statistical Manual of Mental Disorders, 5th edition</i>
DSM-IV-TR	<i>Diagnostic and Statistical Manual of Mental Disorders, 4th edition text revision</i>
HCP	Health care professional
HPA	Hypothalamic-pituitary axis
HRQoL	Health-related quality of life
HSV	Herpes simplex virus
IL	Interleukin
NE	Neurotic excoriations
NICS	Neuro-immuno-cutaneous system
OCD	Obsessive-compulsive disorder
PSP	Pathological skin picking
QoL	Quality of life
RAAS or RAS	Renin-angiotensin-aldosterone system
ROS	Reactive oxygen species
SAM	Sympathetic-adrenal-medullary system
SJS	Stevens-Johnson syndrome
SPD	Skin-picking disorder
TEN	Toxic Epidermal Necrolysis
Th	T-helper cell
TTM	Trichotillomania
UVR	Ultraviolet radiation

The skin is also a sensory organ that allows us to perceive subtle changes in our environment, both pleasurable and noxious, and to react to them accordingly. It allows us to communicate socially and sexually. It is intricately involved with the immune, endocrine, and neural systems, resulting in the ability to elaborate important hormones, peptides, neuromediators, and other important immunomodulators.

The intact skin is perfectly designed to provide mechanical support for proper function. It is thicker on acral areas and very delicate on the eyelids. It can be moist when and where needed and lubricated where necessary. Its sensory nerves, which vary according to anatomical region, provide us proprioception and protection from noxious stimuli and enjoyment from pleasurable stimuli.

Despite all these blessings in health, from the psychological standpoint the skin may become a curse in disease. Whereas internal organs may malfunction in a way that may not be readily apparent to others, the skin is noticed immediately in the setting of social interactions. When it becomes scarred, scaly, blistered, excoriated, or inflamed, the person may be subjected to stigma and rejection, which can be devastating to the self-esteem of the individual and a great a source of significant distress, resulting in impairments in social, occupational, or other areas of functioning.

As discussed herein, many dermatological diseases can be triggered or exacerbated by emotional stress. In other cases the disease process itself may provoke cutaneous changes that can affect the cosmetic and/or functional level to such an extent that it becomes a source of stress, anxiety, depression, and shame.

The skin is an excellent barometer of these stressors because it is clearly visible to the naked eye for clinical observation. Biopsies may be readily taken for further histopathological, immunological, or biochemical studies. Moreover, it is easily accessible not only in humans but also in experimental animals.

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