# Chapter 10 / Capítulo 10

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# Impact of Lifestyle on Skin care: A Systematic Review / Impacto del estilo de vida en el cuidado de la piel: Revisión sistemática

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**ABSTRACT**

**Introduction:** lifestyle factors significantly affect skin health and premature aging, yet controversies remain regarding the specific impact of diet, smoking, alcohol consumption, sun exposure, and stress.
**Method:** a systematic review was conducted including observational, clinical, and intervention studies published from 2018 to 2025, analyzing the effects of lifestyle habits on adults with skin conditions or concerns about premature aging. The research used PubMed and Scopus and Web of Science and Google Scholar databases to find relevant studies while following PRISMA guidelines for inclusion and exclusion criteria.
**Results:** the chosen studies show that unhealthy behaviors lead to premature aging signs which include wrinkles and sunspots and loss of elasticity and inflammatory skin conditions. Healthy lifestyle choices led to better skin quality and decreased cutaneous deterioration according to the research findings.
**Conclusions**: healthy lifestyle promotion stands as a fundamental approach to stop skin aging while preserving skin health. Additional prospective research must validate these findings to evaluate the effectiveness of particular interventions.

**Keywords:** Skin Aging; Lifestyle; Smoking; Ultraviolet Rays; Psychological Stress.

**RESUMEN**

**Introducción:** el estilo de vida influye de manera determinante en la salud de la piel y en el envejecimiento prematuro, pero existen controversias sobre el impacto exacto de factores como la dieta, el tabaquismo, el consumo de alcohol, la exposición solar y el estrés.
**Método:** se realizó una revisión sistemática de estudios publicados entre 2018 y 2025, incluyendo investigaciones observacionales, clínicas y de intervención, que analizaron el efecto de hábitos de vida en adultos con afecciones cutáneas o preocupación por el envejecimiento prematuro. La búsqueda se llevó a cabo en diferentes bases de datos reconocidas como PubMed y Scopus siguiendo protocolos establecidos por la guía PRISMA para garantizar la calidad y relevancia de los estudios seleccionados.
**Resultados:** los análisis realizados indican que la adopción de hábitos de vida poco saludables está relacionada a una mayor aparición de señales de envejecimiento prematuro como arrugas pronunciadas y manchas solares junto a la disminución de la elasticidad y enfermedades inflamatorias en la piel. Por otro lado, adoptando estilos de vida saludables se observan mejoras en la calidad cutánea y un menor deterioro fisiológico.
**Conclusiones:** fomentar estilos de vida saludables se presenta como una estrategia esencial para prevenir el envejecimiento de la piel y mantener su integridad. Se necesitan investigaciones a futuro que confirmar estas relaciones y analizar la eficiencia de medidas específicas.

**Palabras clave:** Envejecimiento Cutáneo; Estilo de Vida; Hábitos Saludables; Radiación Ultravioleta; Estrés Psicológico.

## INTRODUCTION

Skin health directly reflects people's daily habits and has become a topic of growing interest in both medicine and public health. Currently, extensive scientific evidence from various studies links lifestyle factors to the onset of dermatological conditions and premature skin aging. Factors such as an unbalanced diet, smoking, excessive alcohol consumption, chronic stress, and unprotected sun exposure have been identified as negative determinants that progressively affect skin function and appearance.

Despite advances in preventive dermatology, significant gaps remain in understanding how these factors interact across different geographical and sociocultural contexts. Likewise, information on the real impact of lifestyle changes on the prevention or reversal of early signs of aging and skin diseases is limited. Therefore, the purpose of this literature review is to analyze and synthesize the current scientific evidence on the relationship between lifestyle and skin health, providing a comprehensive perspective to guide future research and clinical practice.

The aim is to determine whether there is a significant relationship between different behaviors and skin health, and to better understand the skin-aging process from a preventive standpoint.

The hypothesis guiding this work is that adopting healthy habits, a balanced diet, abstinence from tobacco and alcohol, consistent sun protection, and proper stress management reduces the likelihood of premature aging and dermatological conditions. In contrast, negative habits are associated with greater skin deterioration. The overall objective is to evaluate, through a systematic review of the literature, how various lifestyle factors influence skin aging and health, to generate knowledge to support the promotion of healthy behaviors and the development of effective preventive strategies. This approach proposes a comprehensive strategy with implications not only in the clinical setting but also in the development of public health policies focused on self-care and healthy lifestyles.

## METHOD

This analysis corresponds to a systematic literature review whose objective was to examine how lifestyles—such as diet, smoking, alcohol consumption, prolonged sun exposure, and chronic stress—influence skin health, with particular focus on their links to premature aging and the onset of inflammatory skin diseases. The PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) guidelines were followed for the search, selection, and analysis of the available scientific literature.

Strict criteria were applied to select research published between 2018 and 2025 in Spanish and English, including observational designs (cross-sectional and longitudinal), clinical trials, and systematic reviews focused on the influence of lifestyle on adult skin health. The study group included individuals of both genders aged 18 to 60 who showed visible signs of skin aging or dermatological conditions such as sun wrinkles. In addition, cases of persistent acne were explored. The presence of rosacea and atopic dermatitis in the study sample is also reported by

Hiraldo et al.[1] and Morillo Gallegos et al.[2].

Documents that lacked adequate methodological rigor, trials that were not supported by empirical evidence (e.g., opinions or editorials), duplicate publications, and studies focused on the pediatric population or that did not directly examine the influence of lifestyle on the skin were omitted. The suitability of the

Documents were assessed through critical review by expert colleagues and cross-verification.

Literature searches were conducted in the electronic databases PubMed, Scopus, Web of Science, and Google Scholar. An advanced search strategy was used, combining MeSH descriptors and free terms in English and Spanish such as “skin aging,” “lifestyle,” “diet,” “smoking,” “ultraviolet radiation,” “psychological stress,” “alcohol consumption,” and “dermatological health.” The operators “AND” and “OR” were used to refine results and cover a range of topics, yielding a successful, comprehensive search of the relevant scientific literature.

The Cochrane Risk of Bias Assessment tool was used to evaluate the methodological quality of the selected studies, thereby allowing us to assess the internal validity of the results and minimize the risk of systematic bias. The articles were classified and organized in a database that included variables such as year of publication, methodological design, sampling details, lifestyle factors evaluated, and main findings.

A descriptive, qualitative approach was used to analyze the data, prioritizing comparisons of findings across studies with different methodologies. Potential biases were also identified, such as diversity in the designs and measures used to assess skin health, the prominence of observational studies, and publication bias, given that studies with positive results are more likely to be reported.[3,4]

## RESULTS

A total of 25 studies published between 2018 and 2025 were included, addressing the influence of Various lifestyle habits and premature skin aging. Most of the studies were observational (n=18), supplemented by systematic reviews (n=5) and clinical intervention studies (n=2).

### Demographic and population characteristics

The population samples analyzed in the aforementioned studies mainly comprised adults aged 18 to 60 years of both genders. These individuals had a variety of common dermatological conditions, including acne vulgaris (juvenile acne), atopic dermatitis, rosacea, hyperpigmentation, as well as visible signs of premature skin aging, such as reduced elasticity, pronounced wrinkles, and sunspots. These studies were conducted in clinical and university community settings to address the aesthetic concerns or lifestyle-related skin problems of adults in a diverse and representative manner.

A considerable number of individuals examined in these studies exhibited behaviors considered harmful to the skin. Among the most common behaviors were a diet low in nutrients and high in refined sugars, unhealthy fats, and highly processed foods. In addition to smoking and drinking alcohol regularly. Likewise, prolonged exposure to ultraviolet radiation without adequate protection and high levels of chronic psychological stress are identified as potential causes. This stress is often related to adverse work or social situations, according to Morillo Gallegos et al.[2], Garnacho Saucedos et al.[3], and Celis-Martel et al.[5]. These risk factors were

directly associated with a gradual weakening of the skin barrier, leading to increased skin sensitivity, persistent inflammation, and accelerated aging from external factors.

In addition, according to some studies, the combination of several unfavorable factors—such as poor diet, smoking, and stress—can have a synergistic effect, considerably increasing the risk of structural skin damage. This underscores the importance of considering these components together.[4,6] The existing literature strongly supports the idea that lifestyle factors play a fundamental role in the skin aging process and the development of inflammatory dermatological conditions.

**Relationship between diet and skin health**

Several studies have reported that an unbalanced diet, characterized by high consumption of refined sugars and trans fats, is significantly associated with an increase in the incidence of acne and accelerated skin aging, manifested in loss of elasticity, appearance of wrinkles, and spots.[3,5] In contrast, the antioxidant compounds present in specific diets—especially polyphenols—have been shown to protect against oxidative skin damage, acting as modulators of inflammatory and degenerative processes characteristic of skin cell aging.[4]

**Impact of tobacco and alcohol consumption**

The studies mentioned mainly included adults aged 18 to 60, both sexes, in the analyzed population sample. These individuals had various common dermatological conditions, such as juvenile or vulgar acne and atopic dermatitis; problems such as rosacea and hyperpigmentation were also observed, along with visible signs of premature skin aging, including loss of facial elasticity and marked wrinkles, as well as sunspots. This Research was conducted in both the clinical and university communities settings to address a diverse, representative set of aesthetic concerns and lifestyle-related skin problems in adults.

Many of the participants analyzed in these studies exhibited behaviors considered harmful to the skin, often associated with factors such as a diet deficient in nutrients and high in refined sugars and unhealthy fats, highly processed foods , smoking, and regular alcohol consumption. It is also noted that prolonged exposure to ultraviolet radiation without adequate protection and high levels of chronic psychological stress can be potential causes of skin problems. This level of stress is often linked to challenging work or social situations, according to Morillo Gallegos et al.[2], as well as Garnacho Saucedos et al.[3] and Celis-Martel et al.[5] These risk-increasing factors are directly related to a progressive weakening of the skin barrier, resulting in increased skin sensitivity, persistent inflammation, and accelerated aging due to external factors.

Furthermore, according to some studies, it has been mentioned that the combination of various adverse factors, such as poor diet, smoking, and stress simultaneously, has a synergistic effect that significantly increases the risk of structural damage to the skin. This highlights the importance of considering these elements holistically.[4,6] Previous research strongly supports the notion that lifestyle habits play a significant role in skin aging and the onset of inflammatory skin problems.

**Sun exposure and photoprotection**

Prolonged exposure to ultraviolet (UV) radiation is one of the main external factors contributing to Premature skin aging and various dermatological conditions, such as non-melanoma skin cancers. This radiation is particularly harmful at high altitudes and in areas with little atmospheric protection, increasing oxidative stress in the skin and leading to cumulative

damage that affects its structure and function over time.

Ultraviolet type A radiation penetrates deep into the skin and degrades collagen and elastin by activating metalloproteinases. At the same time, UV-B directly affects keratinocyte DNA, causing mutations that can initiate carcinogenic processes. Both forms generate reactive oxygen species (ROS) that damage the extracellular matrix and disrupt natural antioxidant mechanisms, causing a continuous inflammatory response.

In the fight against these harmful external agents affecting the skin, scientific research highlights the fundamental importance of protecting oneself appropriately from the sun as a preventive measure. It has been proven that regular and correct use of broad-spectrum sunscreens that protect against UVA and UVB rays and have a sun protection factor (SPF) of over 30 significantly reduces the visible signs of sun-induced aging and also lowers the risk of skin cancer.[6] In addition, measures such as wearing sun-protective clothing, wide-brimmed hats, and avoiding sun exposure during peak radiation hours have been shown to be cost-effective.

Sun protection should not be promoted solely for aesthetic reasons; it is also a fundamental pillar of skin health for the general population, especially in areas with constant, intense sun exposure. In the long term, the systematic habit of protecting oneself from the sun could help reduce skin diseases and decrease the burden on health services, thus improving people's quality of life.

**Stress and skin health**

Chronic stress is a very important psychological and physical factor in the development and progression of various skin diseases.

Several studies have shown a significant association between prolonged stress and worsening of skin conditions such as acne vulgaris, eczema, rosacea, and psoriasis, among others.[5,7] This relationship is based on complex mechanisms of the nervous, endocrine, and immune systems that work together to disrupt the skin's natural balance and trigger ongoing inflammatory responses.

From a pathophysiological point of view, stress activates a system in the body that includes the hypothalamus and pituitary gland, leading to the release of certain hormones such as corticotropin and cortisol. When these hormones are present at high levels for prolonged periods, they can disrupt the immune system, increase levels of certain inflammatory substances (such as IL-6 and TNF-$\alpha$), and impair the skin's protective function. This inflammatory environment can promote bacterial growth, attract inflammatory cells, and alter our skin's microbiome, worsening symptoms in susceptible dermatological patients.

In addition, psychological stress can impair the skin's ability to heal and regenerate cells. It can also cause increased skin itching and a greater subjective perception of skin discomfort, as well as reduced adherence to both topical and systemic treatments, which complicates the clinical treatment of these skin conditions. This reciprocal relationship between emotional state and skin health has led to the emergence of a field called psychodermatology, which seeks to integrate interventions to address psychosocial and dermatological factors simultaneously.

Therefore, it should be noted that stress assessment and proper management are key elements in any preventive or therapeutic plan aimed at maintaining skin health, especially

in people exposed to stressful lifestyles, emotionally charged environments, or a history of inflammatory dermatological conditions.

Table 1 below summarizes the main characteristics of the studies examined in this review, categorizing the methodological approach used, the population under analysis, the lifestyle factors evaluated, and the most notable findings related to skin health.

**Table 1.** Characteristics of the included studies and main findings

| Author(s) | Year | Type of study | Population (age/gender) | Factors evaluated | Main findings |
|---|---|---|---|---|---|
| Picón-Jaimes et al.[8] | 2020 | Observational | Adults aged 18-60, both sexes | Diet, smoking, stress | Association between diet/smoking and acne and premature aging |
| Ceron Erazo et al.[4] | 2024 | Systematic review | Adults 18-60 | Polyphenols, antioxidant diet | Protective effect on skin aging |
| Morillo Gallego et al.[2] | 2019 | Observational | Adults with chronic kidney disease | Tobacco, alcohol | Greater skin damage and premature wrinkles |
| Garnacho Saucedo et al.[3] | 2020 | Review | General adult | Sun exposure, photoprotection | UV radiation as the main factor in skin damage |
| Chastaing et al.[7] | 2020 | Review | Adults | Stress | Stress associated with worsening acne and dermatitis |

The studies analyzed in this research consistently show a significant relationship between lifestyle and skin health; this helps establish a solid explanatory framework for how behaviors affect premature aging and dermatological problems. Practices such as an unbalanced diet, regular smoking and drinking, sun exposure without sunscreen, and ongoing stress are linked to a gradual deterioration in both the structure and function of the skin. These manifestations include decreased skin flexibility, the appearance of pronounced wrinkles, sunspots, and changes in skin pigmentation; alterations in the immune system and an increase in chronic inflammatory skin diseases can also be observed.

What is interesting about this evidence is that these connections have been consistently found in studies using different methodological approaches—whether observational or experimental—and in diverse populations, which reinforces the relevance of the results.

Outside the original context and their clinical and preventive usefulness in different geographical and sociocultural settings.
Likewise, several studies have demonstrated a directly proportional relationship between exposure to these risk factors and the severity of skin conditions, supporting the biological consistency of the causal connection.

In addition, factors were found that could help in the fight against skin aging and deterioration caused by external factors. These include regular consumption of antioxidants—such as polyphenols and flavonoids found in fruits and vegetables, along with vitamins A, C, and E—which are also found in natural oils; as well as consistent use of broad-spectrum sunscreen

and appropriate clothing to limit direct exposure to the sun during peak hours of solar radiation. These components have significant preventive potential in addressing the pathophysiological processes involved, such as oxidative stress, chronic inflammation, and collagen loss in the skin.

In summary, this analysis highlights the importance of including measures to promote healthy lifestyle habits as an essential part of dermatological prevention in both clinical settings and public health policies. This is done to maintain health and delay premature skin aging.

## DISCUSSION

This comprehensive review underscores the crucial role of lifestyle in skin health and the early manifestations of skin aging. The results found are perfectly consistent with those reported by Garnacho Saucedo et al.[3] and Morillo Gallego et al.[2], who describe the harmful effects of smoking, excessive alcohol consumption, and sun exposure without adequate protection on the skin structure. A close relationship was also noted between chronic psychological stress and the onset or worsening of skin problems, according to Chastaing et al.[7], who highlight the connection between the neuroendocrine systems and inflammatory processes in dermatological diseases.However, it is important to note some Methodological limitations are presented in the studies reviewed. The diversity of research designs, together with the prevalence of observational studies, makes it difficult to establish definitive causal relationships. Likewise, the use of non-standardized scales to assess the aging process and dermatological conditions complicates direct comparisons across studies. In addition, potential publication bias must be considered, as studies showing positive results tend to be published more frequently; this bias could lead to an overestimation of the protective effectiveness of certain healthy habits.[8,9]

The distinctive value of this analysis lies in its critical, up-to-date integration of scientific evidence, highlighting the importance of approaching skin care from a multifaceted perspective. This approach should not only encourage healthy behaviors but also actively address modifiable risk factors, which is crucial for reducing the burden of dermatological diseases, improving quality of life, and slowing the external aging process.[10,11]

The findings also underscore the importance of conducting future research using prospective designs and controlled clinical trials in larger samples to validate the effectiveness of interventions focused on healthy lifestyles.[12,13] It is also essential to assess the feasibility and economic impact of these preventive strategies in different geographical and cultural contexts,[14,15] especially in vulnerable communities or those with limited access to dermatological care.[16,17]

In summary, it is once again confirmed that promoting healthy lifestyle habits—such as eating a balanced diet, regularly protecting the skin from the sun, avoiding tobacco and alcohol, and managing stress appropriately—is essential for maintaining healthy skin overall.

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