

# Review on Seborrheic Dermatitis Diagnosis and Treatment in Primary Health Care Center

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## Abstract

Seborrheic dermatitis is a common scaly inflammatory skin condition that is induced by *Malassezia ovale* yeast. Seborrheic dermatitis tends to appear in areas that are loaded with sebaceous glands. Recent studies have shown that dermatitis remains a great burden throughout all the decades of life in comparison to acne vulgaris, whose greatest burden is in younger adults a halfway between the late first 10 years and the early third decades of life. This review will discuss the most recent systemic approaches on seborrheic dermatitis, several studies were discussed to increase the understanding of the etiology and clinical evaluation in detecting seborrheic dermatitis relying on important and particular cardinal symptoms to reach the diagnosis. This review aims to evaluate and analyze seborrheic dermatitis clinically for family medicine physicians. This review was performed by the preferred electronic MEDLINE search engine of the PubMed database. This review discussed only published English and English translated documents, articles, systemic reviews related to the subject, and no rejected or papers were included. The etiology of seborrheic dermatitis depends on several factors including dietary pattern and immunity. Using prescribed medications can prevent future relapse of the skin condition.

**Keywords:** Seborrheic dermatitis, Management, Epidemiology, Evaluation

## INTRODUCTION

The human skin serves as a complex ecosystem where it is colonized by various microorganisms including viral, bacterial, archaea, and fungi organisms, relatively known as the skin microbiome [1, 2]. A skin microbiome that comprises 18 species with various strains known as *Malassezia* has a pathogenic role over skin health and initiates several cutaneous disorders such as seborrheic dermatitis, atopic dermatitis, and psoriasis. *Malassezia* genus is lipid dependent group of (Club-shaped) basidiomycetous yeasts and has essential factors of the skin microbiome [3, 4]. Seborrheic dermatitis is a common scaly inflammatory skin condition that is induced by *Malassezia ovale* yeast. The inflammatory skin diseases usually manifest as salmon-pink scaly and itchy lesions. The presenting papulosquamous morphology widely spreads on rich sebaceous glands areas, particularly on the scalp, face, body folds, and trunk. In addition, the pathogenic etiologies in seborrheic dermatitis may be due to immunological or external causes [5-7]. This review is to promote a systemic approach to seborrheic dermatitis, several studies were discussed to increase the understanding of the etiology and clinical evaluation in detecting seborrheic dermatitis relying on important and particular cardinal symptoms to reach the diagnosis. These approaches will

assist Family medicine physicians to develop new clinical skills that will aid their evaluation for skin disorders in the primary health care facility. This review will focus and actively participate in the mainstay of therapy for patients that are affected by seborrheic dermatitis.

## MATERIALS AND METHODS

This review was performed by preferred electronic MEDLINE search engine of PubMed database, using the term "seborrheic dermatitis" including words used in Mesh

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((“Dermatitis”[Mesh])), ((“Seborrheic”[Mesh])), ((“Epidemiology”[Mesh])), ((“Evaluation”[Mesh])), ((“Management”[Mesh])). This review discussed only published English and English translated documents, articles, systemic reviews related to the subject, and no rejected or papers were included.

### Review Epidemiology

In 2013, dermatoeidemiology was investigated to measure the worldwide burden of the disability-adjusted life years rate (DALY) and mortality of skin disorders in younger and older age categories. The study globally estimated 15 skin conditions including seborrheic dermatitis for the years 1980 to 2013 in 188 countries. The results have shown that dermatitis remains a great burden throughout all the decades of life in comparison to acne vulgaris, whose greatest burden is in younger adults a halfway between the late first 10 years and the early third decades of life. All skin conditions are known to contribute about 1.7% of the worldwide burden of diseases. The size of these skin conditions was discriminated in percentages as dermatitis took the lead by 0.38% of the total DALYs including (seborrheic dermatitis, atopic dermatitis, and contact dermatitis) [8].

Seborrheic dermatitis typically affects healthy individuals as well as it is identified in viral immunodeficiency virus infections and also is associated with neurological diseases as in Cerebrovascular, Stroke, Alzheimer dementia, and Parkinson diseases [7, 9]. In general populations, seborrheic dermatitis reaches 1% to 3% and reaches up to 34 & to 83% in immunocompromised patients. Seborrheic dermatitis in males is present in aggressive forms, unlike females. The condition usually increases during stress and favors cold and dry temperatures [7, 10].

### Etiology

Seborrheic dermatitis has a specific dietary pattern. High processed food and meat consumption that is included in the western diet has shown significant association markers of inflammation [11, 12]. Although in some data seborrheic dermatitis females have shown to have higher adherence to the western diet, males have not shown any association with western diet patterns. Sex differences between males and females’ fat distribution, demonstrates different immune response in autoimmune and inflammatory diseases and underline the relations between nutrition and sex as an important source of interaction [12-14].

Other medications that may induce seborrheic dermatitis include cofactors that are linked to T-cell count depression such as inflammatory dermatoses in HIV-AIDS, particularly in cases where CD4 T cell count is less than 400 cell/mm<sup>3</sup> [6]. Seborrheic dermatitis also occurs more frequently with certain psychotropic medications especially on long-term usage; these include buspirone, haloperidol decanoate, chlorpromazine, and lithium [15].

### Clinical Evaluation

#### Presentation and Manifestation of Seborrheic Dermatitis

Seborrheic dermatitis tends to appear in areas that are loaded with sebaceous glands (**Table 1**). The areas of spread in seborrheic dermatitis are considered because they share many clinical features that provide valid directions for future laboratory assessment and treatments. One of the main features is that seborrheic dermatitis lesions are presented in a symmetrical pattern and it is neither fatal nor contagious, however, it is associated with painful and physical discomfort issues [16].

**Table 1. Seborrheic dermatitis anatomical locations**

Site of lesion	Description
Scalp	- Mild honey crusty dandruff - Red- yellow greasy cradle cap plaques
Face	- Butterfly distribution. - Seborrheic blepharitis between the eyelashes with honey crusts on the margins.
Chest	- Petaloid: Oily scaly red peri-follicular and follicular papular patches, often described as flower petals. - Pityriasisiform: Scaly 5-15mm oval-shaped macules and patches, common on the intertriginous areas and face
Generalized	- Extensive forms of erythrodermic seborrheic dermatitis, which might be associated with immunodeficiency, are presented in unusual sites such as extremities and are usually associated with psoriasis, acne, and rosacea.

Adults’ seborrheic dermatitis is generally more common than infantile seborrheic dermatitis and is mostly presented as scaly pityriasisiforms and ill-identified erythematous patches [17]. As for children, tinea capitis is often confused with seborrheic dermatitis. To confirm the diagnosis of seborrheic dermatitis clinicians need to identify the differential diagnosis related to seborrheic dermatitis (**Table 2**) [5, 7].

**Table 2. Differential Diagnosis of Seborrheic Dermatitis [5, 7]**

Differential Diagnosis	Distinguishing Signs
Tinea capitis	Erythema and ring worm pattern
Psoriasis	Skin rash and muscular inflammation (Dermatomyositis).
Contact dermatitis	Characteristic lesion distribution pattern from allergen
Atopic dermatitis	Lichenification
Rosacea	Edematous and erythematous
Systemic lupus	Discoid lesions
Impetigo	Vesicles with fragile roof
Nummular dermatitis	Coin-shaped plaque lesions common in the extremities
Secondary syphilis	Influenza-like symptoms and scaly copper-colored plaques.

## Management

Seborrheic dermatitis does not need routine investigation to confirm the diagnosis. The approach of treatment will vary according to age, skin condition, site and distribution of the lesions, and other systemic factors associated with the flare of seborrheic rash. Seborrheic dermatitis medication is usually over-the-counter preparations including topical fungal, keratolytic, antipruritic, shampoos, and corticosteroids to decrease symptoms (Table 3) [7].

**Table 3.** Medications of Seborrheic dermatitis in adults and young adolescents [7]

Medication	Site	Dosing Frequency
Ciclopirox 1% shampoo	Scalp	Recommended to daily use then twice per week.
Ketoconazole 2% shampoo	Scalp	Recommended to daily use then twice per week.
Ciclopirox 0.77% cream or gel	Face and trunk	Daily use, twice per day for four weeks.
Ketoconazole 2% foam or cream or gel	Face and trunk	Daily use, twice per day for eight weeks, then use when needed.
Sertaconazole 2% cream	Face and trunk	Daily use, twice per day for four weeks.
Betamethasone valerate 0.12% foam	Scalp	Twice per day
Clobetasol 0.05% shampoo	Scalp	Used twice for two weeks
Fluocinolone 0.01% solution	Scalp	Used once or twice daily
Fluocinolone 0.01% shampoo	Scalp	Daily application
Fluocinolone 0.01% cream, oil, or solution	Face and trunk	Used once or twice daily
Pimecrolimus 1% cream	Face and trunk	Twice per day
Tacrolimus 0.1% ointment	Face and trunk	Twice per day
Hydrocortisone 1% cream or ointment	Face and trunk	Used once or twice daily
Betamethasone valerate 0.1% cream or lotion	Scalp	Used once or twice daily
Desonide 0.05% foam, cream, gel, lotion, or ointment	Face and trunk	Used once or twice daily

Steroids are beneficial on scalp seborrheic dermatitis and reduce the severity of inflammation [7, 18]. Using this medication as prescribed can prevent any relapse of the skin condition. Often patients with delayed response to any of the therapy's regimens should be referred to a dermatologist for further assessments and follow-up [7].

## CONCLUSION

Seborrheic dermatitis is a common scaly inflammatory skin condition that is induced by *Malassezia ovale* yeast. The inflammatory skin diseases usually manifest as salmon-pink scaly and itchy lesions. The etiology of seborrheic dermatitis

depends on several factors including dietary pattern and immunity. The areas of spread in seborrheic dermatitis are considered because they share many clinical features that provide valid directions for future laboratory assessment and treatments. Moreover, Seborrheic dermatitis does not need routine investigation to confirm the diagnosis. The adopted medications for seborrheic dermatitis reduce the severity of inflammation. Using the list of medications available in this review can prevent any relapse of the skin condition.

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