Atopic Dermatitis: A Practical Guide to Management 2020

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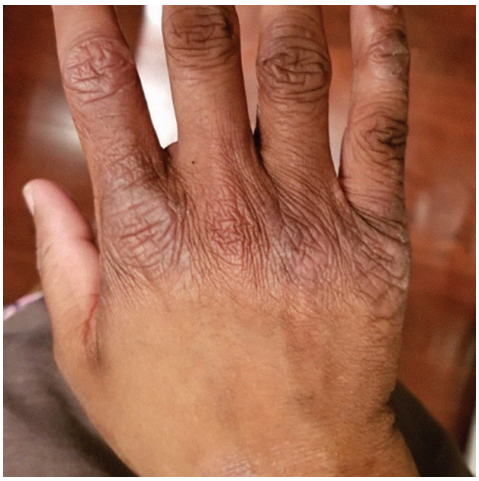

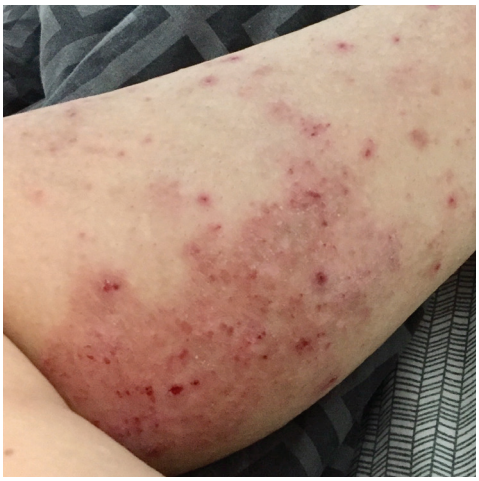

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1. This Guide is written by seven experienced Canadian dermatologists and is intended for use by Primary Healthcare Providers only, not by individual patients. The recommendations are based on the professional experience of these dermatologists and currently available medical evidence.

2. This Guide does not constitute medical advice and is not intended to provide recommendations, diagnosis, or treatment to specific individuals.

3. This Guide is current as of January 2020. It is acknowledged that medicine is constantly evolving, and the document only reflects recommendations as of the date of publication.

4. This Guide reflects general recommendations and is not a substitute for individualized medical care. Healthcare Providers are required to use their own professional judgement and knowledge when diagnosing and treating patients.

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6. This Guide is not to be copied other than the Sample Written Eczema Care Plan. The Plan is not a validated tool and may be customized as the Healthcare Provider wishes.

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ABSTRACT

Background: Atopic dermatitis (eczema), is a chronic pruritic inflammatory skin condition that follows a relapsing course. It affects people of all ages and frequently presents during childhood. Atopic dermatitis (AD) is most often diagnosed and managed by primary care providers.

Objective: This Guide aims to provide practical guidance to primary care providers who care for patients with AD.

Methods: In 2016, the Eczema Society of Canada/Société canadienne de l'eczéma convened a group of Canadian dermatologists with extensive experience in managing paediatric and adult patients suffering from AD, to develop practical recommendations for their management. They developed clinical recommendations based on expert consensus opinion and the best available medical evidence at the time.

This Guide reflects advances in AD treatments and research as of January 2020.

Result: The experts developed AD diagnosis and treatment recommendations that focus on skin care, inflammation control, and patient/caregiver education.

ABBREVIATIONS

AD — Atopic Dermatitis
PDE4 — Phosphodiesterase 4
QoL — Quality of Life
TCI — Topical Calcineurin Inhibitors
TCS — Topical Corticosteroids

ATOPIC DERMATITIS

Atopic dermatitis (AD)—also commonly referred to as eczema or atopic eczema—is a chronic pruritic relapsing inflammatory skin condition that impairs quality of life (QoL) and places a significant burden on patients and families. It can affect people of all ages, but it is more frequent in children. The onset of AD is typically between 2 and 6 months of age. It was previously thought that it resolved or improved by adulthood in most cases, but evidence suggests that it is a chronic condition that persists into adulthood.[1–3]

AD is characterized by periods of acute worsening symptoms, known as flares, alternating with periods of symptom remission. Some patients do not experience any periods of remission. Patients often have conditions associated AD, such as allergic rhinoconjunctivitis, food allergies and/or asthma.

AD is caused by a dysfunctional skin barrier and dysregulation of the immune system, due to genetic, immunologic, and environmental factors. Pruritus is its most notable feature and is at the centre of much of the disease burden for patients and their families. Therapeutic education directed to the patient or main caregiver(s) has been demonstrated to improve QoL.[4] While complete guidelines on AD are available,[5–8] these guidelines may not be practical for primary care, nor are they specific to the Canadian healthcare system.

DIAGNOSIS AND ASSESSMENT

AD is most often diagnosed and managed by primary care providers.[9] The diagnosis is based on the morphology and distribution of the patient's skin lesions, associated clinical signs, and family history[10] (**Table 1**). AD can range from mild to severe, based on body surface area involvement, intensity of eczematous lesions, and the impact on a patient's QoL.

Currently, AD remains a clinical diagnosis. In select cases additional testing may be performed, such as a biopsy or patch testing, to rule out other conditions, but this is usually unnecessary. If the diagnosis is unclear, referral to a dermatologist should be considered.

Table 1: Diagnostic Features of Eczema[6]

Condition	Diagnostic Features
Atopic Dermatitis	• Chronic or relapsing dermatitis • Typical morphology and age-specific patterns (e.g. flexural areas in all age groups; extensors, face, and neck in paediatric population) • Early age of onset of AD • Personal and/or family history of atopy

Table continued on next page.

Acute Dermatitis	• Pruritus • Xerosis • Erythema, edema • Blistering, oozing, and crusting • Excoriations (linear crusted erosions)
Chronic dermatitis	• Thickness (induration, papulation) • Excoriations (linear crusted erosions) • Lichenification (increased cutaneous line markings with thickening of the skin)

AD AND QUALITY OF LIFE

AD has a significant impact on QoL for patients and their families. Physicians should consider addressing this QoL impact in addition to assessing the signs and symptoms of the disease. Sleep is disturbed, often for the whole family. Healthcare providers should address itch, sleep loss, and the impact of disease on mood, activities, behaviour, and self-esteem when formulating an AD management plan. The level of QoL impact in AD has been found to be similar to, and at times can surpass, the impact of caring for a child with type 1 diabetes.[11]

MINIMIZING AND CONTROLLING FLARES

AD is a relapsing-remitting chronic disease with cyclical periods of relative remission and periods of flare. Currently, there is no cure. As such, the main goal of AD management is to improve baseline inflammation and xerosis and to reduce the frequency and severity of flares.

For some patients, treating baseline disease activity will involve the use of a moisturizer only. For others, it will involve the use of a moisturizer and anti-inflammatory medications.

In periods of flare, treatment is often intensified. For those with mild disease and mild flares, this often requires the addition of a topical anti-inflammatory medication. For others with more severe AD, it may require a temporary increase in the potency of topical anti-inflammatory medications. For patients with frequent flares and/or flares that require high-potency topical corticosteroids, referral to a dermatologist is recommended.

SKIN CARE

AD causes an impaired skin barrier function, partly due to deficiencies in ceramides (lipids) and filaggrin (a protein). These deficiencies contribute to a degraded skin barrier that allows bacteria, irritants, and allergens to enter the skin, and also allows moisture to escape.[12] The dysfunctional skin barrier also leads to xerosis, which is present to some degree in most patients with AD.

MOISTURIZERS

Frequent application of moisturizers is the cornerstone of AD management[13] and helps to:[14]

- Improve xerosis
- Decrease pruritus
- Prevent and reduce AD flares
- Decrease the need for anti-inflammatory medications
- Reduce transepidermal water loss

For patients with mild AD, frequent and consistent use of moisturizers may sufficiently manage the disease. In moderate to severe disease, moisturizing is still a fundamental part of treatment. Patients may need to be explicitly counselled on how to use moisturizers in conjunction with other topical anti-inflammatory treatments.

Patients should select moisturizers that are soothing and do not irritate the skin. Ideal moisturizers contain varying amounts of emollient, occlusive, and humectant ingredients. While thicker products that both moisturize and provide a barrier are recommended, there are many moisturizers to choose from and patient preference is important. Daily adherence to moisturizer use is more important than the specific product selected.

There is insufficient evidence to recommend a specific moisturizer regimen. However, this consensus group suggests that generous application, one to several times a day, is necessary to help minimize skin dryness. It is highly recommended to apply moisturizers immediately after bathing or any water exposure to improve skin hydration.[15,16]

BATHING AND SHOWERING

Daily bathing is often recommended for patients with AD; however, there is no evidence to support a standard recommendation for the frequency, duration, or method of bathing. Clinicians can recommend that patients bathe or shower (5-10 minutes) in warm, plain water once daily, or every other day, based on patient preference (e.g., baths may sting open lesions making daily bathing challenging). Gentle cleansers are only recommended on areas that need cleaning and should be used at the end of the bath or shower. Evidence is lacking to support the use of bath additives such as oils, emollients, and bath salts.

INFLAMMATION CONTROL — TOPICAL THERAPIES

TOPICAL CORTICOSTEROIDS

Topical corticosteroids (TCS) are safe and effective first-line treatments for the inflammatory component of AD.[17] Healthcare providers should consider factors such as patient age, areas of the body being treated, xerosis, and patient preference when prescribing TCS. Selecting the appropriate agent, including the appropriate strength, can be challenging. In general, low potency TCS (classes VI and VII) are recommended for the face, neck, skin folds, and groin, for both paediatric and adult patients. Moderately potent TCS (classes III, IV, and V) are recommended for the trunk and extremities. Higher potency TCS (classes I and II) may be required for refractory eczema or lichenified areas. Consider referral to a dermatologist in these cases.

Once to twice daily application of a TCS is generally recommended during an acute AD flare. Treatment should be stopped once the affected areas are smooth to the touch and no longer pruritic or red. If no response to treatment is seen after 1 to 2 weeks, healthcare providers should re-evaluate and consider other diagnoses or treatment plans. With appropriate use, the incidence of adverse events is minimal.[18] When prescribing combination treatments containing a TCS, the TCS strength should be taken into consideration. The TCS in these combination treatments could be of higher potency than is appropriate for the patient's AD.

In patients who have good adherence to their treatment plan and experience periods of remission, but flare frequently in predictable areas, maintenance treatment with topical corticosteroids may be suitable. Intermittent application (one application 1 to 2 times a week) of a moderately potent topical corticosteroid is recommended for proactive treatment on areas prone to flare.[19]

TOPICAL CORTICOSTEROID SIDE EFFECTS

As with all medications, TCS can have side effects (**Table 2**). However, when they are used appropriately, the incidence of side effects is low, and patients should be counselled accordingly.[20] The burden of under- and untreated AD usually outweighs TCS risk.[21]

Fear of TCS is common amongst patients and caregivers, especially in paediatric patients. This should be recognized and addressed. Addressing fears and concerns may help improve adherence and avoid under-treatment or non-treatment. Patients who are using TCS over the long-term should be monitored and have regular physical examinations to watch for cutaneous side effects. Monitoring of AD patients for systemic side effects from TCS is not routinely recommended.[22]

Table 2:
Potential Adverse Effects of Topical Corticosteroids[23]

- Skin atrophy
- Purpura
- Telangiectasia
- Striae
- Focal hypertrichosis
- Acneiform or rosacea-like eruptions
- Impairment of wound healing and re-epithelialization
- Allergic contact dermatitis
- Hypothalamic-pituitary-adrenal axis suppression

TOPICAL CALCINEURIN INHIBITORS

Topical calcineurin inhibitors (TCI) (e.g. tacrolimus and pimecrolimus) are safe and effective second-line anti-inflammatory treatment of acute AD flares.[24] TCS are generally considered first-line topical treatment for AD, but TCI can be used off-label as first-line therapy in select cases, particularly for areas that are potentially sensitive to the adverse effects of TCS, such as the eyelids. TCI are also appropriate for AD that does not respond to TCS or in patients intolerant of TCS. TCI can also be used as a preventive therapy, 2 to 3 times a week in areas of predictable flares similar to the preventative strategy described for TCS.[19] Proactive, intermittent use of TCI has been shown to be more effective than the use of emollients alone.[25,26]

TOPICAL CALCINEURIN INHIBITOR SIDE EFFECTS

A mild to moderate local burning or stinging sensation can occur with the initial applications of TCI. Patients and caregivers should be counselled that this side effect is almost always transient and improves with continued use. Patients who use tacrolimus may have flushing of the face when they consume alcohol.

Based on concerns regarding an increased cancer risk with TCI use, the US Food and Drug Administration and Health Canada issued a black-box warning shortly after TCI came on to the market. However, TCI have been available for over a decade and published data does not support these concerns.[27–30] The Canadian Dermatology Association reviewed the medical literature and their policy statement (2018) clearly supports the safety of TCI.[31] Healthcare providers should be aware of the black-box warning and discuss it with patients. Following a Health Canada review of safety data in 2019, the long-term use and safety limitations for topical pimecrolimus have been removed.[32]

TOPICAL PDE4 INHIBITOR

Crisaborole topical ointment 2% has been approved in Canada for the management of mild-to-moderate AD in patients ≥ 2 years of age. It is a phosphodiesterase 4 (PDE4) inhibitor that blocks the release of inflammatory cytokines from T-cells, thus controlling the inflammation associated with AD.[33,34] Crisaborole is applied to affected areas twice daily.[35]

TOPICAL PDE4 INHIBITOR SIDE EFFECTS

The most commonly reported treatment-related adverse effects were application site pain (4%), dermatitis, and pruritus.[34–36] Patients and caregivers should be counselled with regard to this potential side effect.

REFRACTORY AND SEVERE AD

Phototherapy,[37] systemic therapies, or biologic agents may be necessary for refractory and severe AD. These therapies should be used by healthcare providers versed in their use.[51] Referral to a dermatologist is recommended in patients with refractory and severe AD in whom phototherapy or systemic therapy is being contemplated.

PHOTOTHERAPY

Phototherapy, specifically broad– and narrowband UVB, can be used for paediatric and adult patients with AD. It is a safe and effective treatment for most patients. Accessibility is a major barrier to its use, as it requires office visits 2–3 times per week for at least 6–12 weeks. In addition, it does not effectively treat areas covered by hair (e.g. scalp) and those not easily exposed (e.g. skin folds).[38]

SYSTEMIC THERAPIES

Although most patients respond satisfactorily to topical anti-inflammatory agents, approximately 10% require systemic treatments to achieve adequate AD control.[39] Cyclosporine, methotrexate, azathioprine and mycophenolate mofetil are systemic agents commonly used off-label for AD by dermatologists. Many patients with AD respond well to these systemic agents, with each leading to an improvement in symptoms and overall QoL.[38–40] The dosing and onset of action varies with each of the individual agents.[38,39]

All of these medications can cause significant adverse events and require regular monitoring. They should be used with caution and after discussion of their risks and benefits with patients and their families.

BIOLOGIC AGENTS

Dupilumab, a monoclonal antibody targeting the interleukin–4 and –13 pathway, is the first targeted biologic medication approved for use in patients ≥ 12 years of age with moderate-to-severe AD refractory to topical therapy.[41] Trials in younger children are ongoing and use in that population is currently off-label. In clinical trials up to 1 year in duration, dupilumab led to significant improvements in AD severity and symptoms, including pruritus and sleep.[42] It was also associated with improvements in patient QoL. While most patients tolerate dupilumab well, common side effects include conjunctivitis and injection site reactions.

SYSTEMIC CORTICOSTEROIDS

Systemic corticosteroids, such as prednisone, are not recommended for routine AD management. While they can rapidly ameliorate the signs and symptoms of an acute flare, patients often have a relapse upon withdrawal. Given the long-term side effects of chronic systemic corticosteroid use, they should be avoided whenever possible in patients with AD.[43]

ADJUNCTIVE THERAPIES

ANTIMICROBIALS

Skin infections can worsen AD and should be addressed when present. Clinical signs of infected AD include crusting, oozing, and pus. Gram-positive bacteria, in particular *Staphylococcus aureus*, is frequently found on the AD affected skin.[44] Mild infections may be treated with a topical antibiotic adjunctively with a topical anti-inflammatory agent. The routine use of topical antistaphylococcal antibiotic treatment in the absence of clinical signs of infection is not recommended.[45]

When clinical signs of bacterial infection are seen, swabs for culture and sensitivity should be considered due to the increased prevalence of resistant organisms. The use of oral antibiotics targeting streptococcal and staphylococcal infections may be started immediately and adjusted depending on the results of the cultures.

BLEACH BATHS

Recent research indicates bleach baths may have limited therapeutic benefit in AD management. They may have utility for some patients, such as those with frequent skin infections.[46] Dermatologists and/or other specialists may recommend bleach baths to patients along with dilution, mixing, and safety instructions.

MANAGING VIRAL INFECTIONS

Viral infection with herpes simplex virus can cause eczema herpeticum, a potentially life-threatening condition. Swabs for viral detection (such as viral culture, or polymerase chain reaction) should be performed in suspected cases of eczema herpeticum. In these cases, the initiation of treatment with an appropriate antiviral agent is recommended.[47] Eczema coxsackium is a form of hand-foot-and-mouth disease in patients with AD that is more extensive than routine hand-foot-and-mouth disease, and can look similar to eczema herpeticum. Molluscum contagiosum occurs more commonly in patients with AD and the presence of the virus can lead to eczema surrounding the mollusca, potentially exacerbating an AD flare.

ANTIHISTAMINES

Due to a lack of evidence in the management of AD, non-sedating oral antihistamines are not recommended for use.[17] Sedating oral antihistamines, such as hydroxyzine and diphenhydramine, are occasionally used at bedtime in patients whose disease significantly interferes with sleep. Sleep impairment due to AD symptoms may be a sign of suboptimal management.[17]

ALLERGY TESTING AND RESTRICTIVE DIETS

The relationship between AD and allergy is complex. While children with AD have a significantly higher incidence of food allergies, food does not cause AD flares for most patients. In an AD patient who has confirmed food allergies, exposure to the allergenic foods can induce urticaria, which can indirectly worsen the AD. If a patient shows true allergic signs and symptoms such as urticaria or anaphylaxis to a food, that food should be avoided, and an epinephrine auto injector should be prescribed, and an allergist/immunologist should be consulted. Routine allergy testing with AD as the only symptom, is not currently recommended. Broad spectrum panel testing for a variety of foods is not recommended, as it often leads to a number of false positive results.[48]

Food elimination diets or restrictive diets are not recommended as an AD intervention. Excessive, prolonged food elimination diets, especially in children, may lead to weight loss, poor growth, and nutritional deficiency.[5]

SUPPLEMENTS AND ALTERNATIVE THERAPIES

There is limited evidence to support the routine use of dietary supplements and alternative medicines for the treatment of AD. However, some patients may find these treatments to be helpful. If the dietary supplements or interventions are not harmful, the patient should be counselled and supported accordingly. However, if these interventions could be harmful, patients should be cautioned and other treatment options should be considered. Extra caution should be taken when these therapies are considered for infants and children.

PATIENT EDUCATION

Patient and caregiver education is a key aspect of successful AD management (**table 3**).[49] Studies have demonstrated that therapeutic patient education increases adherence to therapy, increases the use of moisturizers, and decreases the fear of medications.[50–52] Suboptimal treatment and poor adherence to therapy are common in patients with AD. Therefore, therapeutic education is particularly important in the face of many sources of potentially misleading or inaccurate information, or patient misconceptions and fears present in the community.[53]

WRITTEN ECZEMA CARE PLANS

A written eczema care plan is a recommended tool to improve therapeutic outcomes.[23,54] Patients and caregivers may benefit from having a written plan in order to carry out the multi-step plan of caring for AD. This often includes specific bathing and moisturizing recommendations and instructions for using anti-inflammatory medications. **Figure 1** provides a sample written eczema care plan.

Table 3: AD Patient Counselling Points

Eczema is a chronic disease	• AD typically goes through periods of flares and remissions • Moisturizing is the mainstay of therapy during remission, and anti-inflammatory treatments are needed during flares
There is no cure for AD, but it can be effectively managed	• Patients and caregivers often seek causes or cures for AD, which diverts attention away from the treatment plan • Patients should be counselled on the chronicity of AD and reminded that broad panel allergy testing and restrictive diets are not recommended in the absence of signs and symptoms consistent with an IgE-mediated allergy
Eczema flares can be managed	• Flares can normally be managed by hydrating the skin (bathing and moisturizing appropriately) and reducing inflammation with topical anti-inflammatory medication
Under-treating, starting treatment too late, or stopping treatment too soon, should be avoided	• Treatment of AD flares should begin at the first sign of inflammation • Patients and caregivers often stop treatment before the skin is fully clear of lesions, mistakenly believing that the vast improvement they have seen means the skin is "clear enough" • Clinicians should encourage patients and caregivers to make sure the skin is completely clear of lesions (smooth to the touch and no longer pruritic or red) before stopping treatment • Even though when stopping early the flare may seem to be much less severe, the patient still has chronic active inflammation, and often the skin rapidly worsens • Patients need to be counselled on how to apply the medication, as applying the treatment too sparingly may contribute to under-treatment
Adherence to therapy is essential for the optimal management of eczema	• Poor adherence may be the most significant barrier to optimal care in AD • In a survey of 200 AD outpatients, 24% admitted that they did not adhere to treatment, and experts estimate this percentage could be significantly higher[8] • Healthcare provider counselling may improve treatment adherence
Avoid eczema triggers	• Patients should be counselled to attempt to identify and avoid their triggers, and to understand that some AD flares occur despite strict trigger avoidance and diligent skin care • This is often a source of frustration for patients • Many AD flares result from an environmental trigger • Common triggers include harsh or fragranced soaps and self-care products, rough fabrics, overheating and sweating, and winter weather • Often these triggers can be identified but not avoided, such as weather changes
Lifestyle can impact eczema as well	• Activities such as sweating for a young athlete can worsen AD symptoms • Instead of avoiding pleasurable activities, advise the patient to learn about ways to manage the flare that may follow an activity or exposure to a trigger • Additional actions can be taken to help the condition, such as keeping nails trimmed short and filed smooth to help reduce damage done by scratching • Distraction can also be helpful during episodes of acute itch, particularly activities that keep the hands busy

For additional patient support, information, and education, recommend reliable sources, such as the Eczema Society of Canada/ Société canadienne de l'eczéma (www. eczemahelp.ca), Canadian Dermatology Association (www. dermatology.ca), American Academy of Dermatology (www.aad.org), National Eczema Association (USA) (www.nationaleczema.org), or National Eczema Society (UK) (www.eczema.org).

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WRITTEN ECZEMA CARE PLAN

Patient Name: _____

Date: _____

STEP 1

Every day, take a 5- to 10-minute bath or shower. If this is not enjoyable or is uncomfortable, take a shower or bath every second day. You can use a gentle cleanser if you wish. Gently towel dry.

STEP 2

Apply prescription medications to any areas of eczema that are red, rough, and/or itchy.

Apply _____ to the affected areas of the face, neck, armpits, and groin _____ times per day.

Apply _____ to the scalp _____ times per day.

Apply _____ to other affected areas of the body _____ times per day.

STEP 3

Apply a moisturizer to the unaffected areas of the body, within a few minutes of exiting the bath or shower.

ADDITIONAL INSTRUCTIONS

- Moisturizer may be applied throughout the day, whenever the skin feels dry or itchy, or after any contact with water (e.g. bathing, swimming, etc).
- Continue using the prescription medications until the skin is clear, smooth, and the redness and itchiness is gone. If after two weeks of regular medication use, your skin has not cleared, speak with your physician.
- After the rash has cleared, continue applying moisturizer at least two times a day to the entire body.
- Restart the prescription medications, as described in **Step 2**, when the eczema flares again.
- Oozing fluid, yellow crusts, blisters, and/or red swelling need to be reported to your doctor immediately. This could be an infection or other concern.

NOTES

Physician Name: _____ **Physician Signature:** _____

IMPORTANT NOTE:

Should you have any questions about this care plan or any concerns related to your eczema treatment, contact the prescribing doctor.

Eczema Society of Canada
1-855-ECZEMA-1
Email: info@eczemahelp.ca
www.eczemahelp.ca