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[Intervention Review]

# Emollients and moisturisers for eczema

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## ABSTRACT

### Background

Eczema is a chronic skin disease characterised by dry skin, intense itching, inflammatory skin lesions, and has a considerable impact on quality of life. Moisturisation is an integral part of treatment, but it is unclear if moisturisers are effective.

### Objectives

To assess the effects of moisturisers for eczema.

### Search methods

We searched the following databases to December 2015: Cochrane Skin Specialised Register, CENTRAL, MEDLINE, Embase, LILACS, and GREAT. We searched five trials registers and checked references of included and excluded studies for further relevant trials.

### Selection criteria

Randomised controlled trials in people with eczema.

### Data collection and analysis

We used standard Cochrane methodological procedures.

### Main results

We included 77 studies (mean duration: 6.7 weeks; 6603 participants, mean age: 18.6 years). Thirty-six studies were at high risk of bias, 34 at unclear risk, and seven at low risk. Twenty-four studies assessed our primary outcome of participant-assessed disease severity, 13 assessed satisfaction, and 41 assessed adverse events. Secondary outcomes included investigator-assessed disease severity (addressed in 65 studies), skin barrier function (29), flare prevention (16), quality of life (10), and corticosteroid use (eight). Adverse events reporting was limited (smarting, stinging, pruritus, erythema, folliculitis).

Six studies evaluated moisturiser versus no moisturiser. Participant-assessed disease severity and satisfaction were not assessed. Moisturiser use yielded lower SCORing Atopic Dermatitis (SCORAD) scores than no moisturiser (3 studies, 276 participants; mean difference (MD) -2.42, 95% confidence interval (CI) -4.55 to -0.28), but the minimal important difference (MID) was unmet. Moisturiser use resulted in fewer flares (2 studies, 87 participants; RR 0.40, 95% CI 0.23 to 0.70), prolonged time to flare (median: 180 versus 30 days), and reduced use of topical corticosteroids (2 studies, 222 participants; MD -9.30 g, 95% CI -15.3 to -3.27). There was no clear difference in adverse events (1 study, 173 participants; risk ratio (RR) 15.34, 95% CI 0.90 to 261.64). Evidence for these outcomes was low quality.

With Atopiclair, 174/232 participants reported improvement in disease severity versus 27/158 using vehicle (3 studies; RR 4.51, 95% CI 2.19 to 9.29). Atopiclair decreased itching (4 studies, 396 participants; MD -2.65, 95% CI -4.21 to -1.09) and achieved more frequent satisfaction (2 studies, 248 participants; RR 2.14, 95% CI 1.58 to 2.89), fewer flares (3 studies, 397 participants; RR 0.18, 95% CI 0.11 to 0.31), and lower Eczema Area and Severity Index (EASI) scores (4 studies, 426 participants; MD -4.0, 95% CI -5.42 to -2.57), but the MID was unmet. The number of participants reporting adverse events was not statistically different (4 studies, 430 participants; RR 1.03, 95% CI 0.79 to 1.33). Evidence for these outcomes was moderate quality.

Participants reported skin improvement more frequently with urea-containing cream than placebo (1 study, 129 participants; RR 1.28, 95% CI 1.06 to 1.53; low-quality evidence), with equal satisfaction between the two groups (1 study, 38 participants; low-quality evidence). Urea-containing cream improved dryness (investigator-assessed) (1 study, 128 participants; RR 1.40, 95% CI 1.14 to 1.71; moderate-quality evidence), and produced fewer flares (1 study, 44 participants; RR 0.47, 95% CI 0.24 to 0.92; low-quality evidence), but caused more adverse events (1 study, 129 participants; RR 1.65, 95% CI 1.16 to 2.34; moderate-quality evidence).

Three studies assessed glycerol-containing moisturiser versus vehicle or placebo. More participants in the glycerol group noticed skin improvement (1 study, 134 participants; RR 1.22, 95% CI 1.01 to 1.48; moderate-quality evidence), which also included improved investigator-assessed SCORAD scores (1 study, 249 participants; MD -2.20, 95% CI -3.44 to -0.96; high-quality evidence), but the MID was unmet. Participant satisfaction was not addressed. The number of adverse events reported was not statistically significant (2 studies, 385 participants; RR 0.90, 95% CI 0.68 to 1.19; moderate-quality evidence).

Four studies investigated oat-containing moisturisers versus no treatment or vehicle. No significant differences between groups were reported for participant-assessed disease severity (1 study, 50 participants; RR 1.11, 95% CI 0.84 to 1.46; low-quality evidence), satisfaction (1 study, 50 participants; RR 1.06, 95% CI 0.74 to 1.52; very low-quality evidence), or investigator-assessed disease severity (3 studies, 272 participants; standardised mean difference (SMD) -0.23, 95% CI -0.66 to 0.21; low-quality evidence). In the oat group, there were fewer flares (1 study, 43 participants; RR 0.31, 95% CI 0.12 to 0.7; low-quality evidence) and reduced use of topical corticosteroids (2 studies, 222 participants; MD -9.30g, 95% CI 15.3 to -3.27; low-quality evidence), but more adverse events (1 study, 173 participants; Peto odds ratio (OR) 7.26, 95% CI 1.76 to 29.92; low-quality evidence).

We compared all moisturisers to placebo, vehicle, or no moisturiser. Participants considered moisturisers to be more effective for reducing eczema (5 studies, 572 participants; RR 2.46, 95% CI 1.16 to 5.23; low-quality evidence) and itch (7 studies, 749 participants; SMD -1.10, 95% CI -1.83 to -0.38) than control. Participants in both treatment arms reported comparable satisfaction (3 studies, 296 participants; RR 1.35, 95% CI 0.77 to 2.26; low-quality evidence). Moisturisers led to lower investigator-assessed disease severity scores (12 studies, 1281 participants; SMD -1.04, 95% CI -1.57 to -0.51; high-quality evidence) and fewer flares (6 studies, 607 participants; RR 0.33, 95% CI 0.17 to 0.62; moderate-quality evidence), without a difference in adverse events (10 studies, 1275 participants; RR 1.03, 95% CI 0.82 to 1.30; moderate-quality evidence).

Topical active treatment combined with moisturiser was more effective than active treatment alone in reducing investigator-assessed disease severity scores (3 studies, 192 participants; SMD -0.87, 95% CI -1.17 to -0.57; moderate-quality evidence) and flares (1 study, 105 participants; RR 0.43, 95% CI 0.20 to 0.93), and was preferred by participants (both low-quality evidence). There was no clear difference in number of adverse events (1 study, 125 participants; RR 0.39, 95% CI 0.13 to 1.19; very low-quality evidence). Participant-assessed disease severity was not addressed.

### Authors' conclusions

Most moisturisers showed some beneficial effects; prolonging time to flare, reducing the number of flares and the amount of topical corticosteroids needed to achieve similar reductions in eczema severity. Moisturisers combined with active treatment gave better results than active treatment alone. We did not find reliable evidence that one moisturiser is better than another.

## PLAIN LANGUAGE SUMMARY

### Emollients and moisturisers for eczema

### Review question

Do emollients and moisturisers help control eczema?

### Background

Eczema is a chronic (long-lasting) skin disorder. Its main symptoms are dry skin and intense itching. Affected areas appear red, with crusts and scratches, and may ooze fluid. Moisturisers are considered important in eczema treatment, but there is uncertainty about how well they work, and whether any one moisturiser works better - and is preferable - to another.

### Study characteristics

We searched the medical literature up to December 2015, and identified 77 relevant studies with 6603 participants, with mainly mild to moderate eczema. Participant age ranged from four months to 84 years (mean: 18.6 years). Most studies lasted between two and six weeks; a few lasted six months.

Forty-six studies received funding from pharmaceutical companies.

**Key results**

Most moisturisers appeared to be effective. Twenty-four studies reported participant-assessed eczema severity. Only 13 studies assessed participant satisfaction with the moisturiser. Side effects (adverse events) were reported in 41 studies, although this information was often limited (mainly smarting, stinging, itch, redness). Most studies evaluated physician-assessed severity of eczema (65 studies). Other outcomes addressed were skin barrier function (29 studies), flare prevention (16), quality of life (10), and corticosteroid use (8).

According to physicians, moisturisers reduced eczema severity compared with no moisturiser (3 studies), but the reduction was too small to be considered meaningful for patients. Moisturiser use resulted in fewer flares (2 studies), and reduced the need for topical corticosteroids (2 studies). Participant-assessed eczema severity and satisfaction were not evaluated. There was no difference in the number of adverse events reported.

Participants thought Atopiclair (containing glycyrrhetinic acid) was more than four times more effective at improving eczema-severity than the control (i.e. identical looking, but without glycyrrhetinic acid) (3 studies). However, physicians did not identify a meaningful difference for patients. Atopiclair led to greater reduction of itch (4 studies), more frequent participant satisfaction (2 studies), and fewer flares (3 studies). The number of reported adverse events was similar in each group.

Four studies evaluated urea-containing cream. Participants using urea cream reported improvement more often than those using control (1 study). Satisfaction ratings in both groups were comparably positive (1 study). Urea-containing cream improved dryness more often (physician assessment) (1 study) and led to fewer flares (1 study), but with more adverse events reported.

Three studies assessed glycerol-containing moisturiser versus control. More participants in the glycerol group considered their skin to be improved (1 study), as did physicians, but these differences were not meaningful for patients. Participant satisfaction was not addressed. There was no difference in the number of adverse events reported.

Four studies investigated oat-containing moisturisers versus no treatment or control. No differences between groups were observed for participant-assessed improvement (1 study), participant satisfaction (1 study), or physician-assessed improvement (3 studies). However, the oat group had fewer flares (1 study), and a reduced need for topical corticosteroids (2 studies). Oat creams caused more adverse events.

When we compared all moisturisers against no moisturiser or control, overall, participants considered moisturisers to be more than twice as effective in improving eczema than no moisturiser or control (5 studies), and more effective for itch (7 studies). Participants in both treatment arms reported comparable satisfaction (3 studies). According to physicians, moisturisers decreased eczema severity more than the control (12 studies), and led to fewer flares (6 studies). There were no differences between groups for the number of adverse events reported.

According to physicians, topical corticosteroids were more effective at improving eczema when used with a moisturiser, rather than used alone (3 studies), and also reduced the number of flares (1 study). This combination was also favoured by participants, though participant-assessed disease severity was not addressed. There was no difference in the number of adverse events reported.

**Quality of the evidence**

There was high certainty evidence for physician-assessed disease severity for glycerol-containing creams versus control and all moisturisers versus control. For most other outcomes across comparisons, there was low to moderate certainty evidence. The most important reasons for lowering the certainty of evidence were risk of bias in studies (e.g. no blinding, or missing data), or too few participants, which leads to less precise results.