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CLINICAL REPORT

The Role of Wet Wrap Therapy in Skin Disorders – A Literature Review

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Wet wrap therapy, based on skin application of a double layer of tubular bandages or gauze with a moist first inner layer and a dry second outer layer, is utilized to treat various pruritic conditions, in particular severe and refractory atopic dermatitis. This review, by literature search, evaluates current knowledge about wet wrap therapy. Wet wrap therapy superimposed topical corticosteroids appears more efficient than emollients only, at least for short-time treatments. Despite higher efficacy, there is a tendency towards more frequent infections when topical corticosteroids are covered with wet wrap bandages compared to emollients only. While temporary suppression of hypothalamic-pituitary-adrenocortical-axis was seen due to systemic bioactivity of corticosteroids, no long-term observation studies on putative adverse effects were identified. One hypothesis suggests that wet wrap therapy may trigger increased lamellar body secretion resulting in recovery of the damaged intercellular lipid laminar structure. Otherwise, little investigation on mechanisms exists.

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1. Devillers ACA, Oranje AP. Efficacy and safety of “wet-wrap” dressings as an intervention treatment in children with severe and/or refractory atopic dermatitis: a critical review of the literature. *Br J Dermatol* 2006; 154: 579–585.
2. Quinones CA, Winkelmann RK. Changes in skin temperature with wet dressing therapy. *Arch Dermatol* 1967; 96: 708–711.
3. Bingham LG, Noble JW, Davis MDP. Wet dressings used with topical corticosteroids for pruritic dermatoses: A retrospective study. *J Am Acad Dermatol* 2009; 60: 792–800.
4. Hawkins K. Wet dressings putting the damper on dermatitis. *Nursing* 1978; 8: 64–67.
5. Nicol N. Atopic dermatitis: the (wet) wrap-up. *Am J Nurs* 1987; 87: 1560–1563.
6. Goodyear H. “Wet-wrap” dressings for the treatment of atopic eczema in children. *Br J Dermatol* 1991; 125: 604.
7. Oranje AP, Devillers ACA, Kunz B, Jones SL, DeRaeve L, Van Gysel D, et al.

Treatment of patients with atopic dermatitis using wet-wrap dressings with diluted steroids and/or emollients. An expert panel's opinion and review of the literature. *J Eur Acad Dermatol Venereol* 2006; 20: 1277–1286.

8. Devillers ACA, Oranje AP. Wet-wrap treatment in children with atopic dermatitis: a practical guideline. *Pediatr Dermatol* 2012; 29: 24–27.

9. Verhagen AP, De Vet HCW, De Bie RA, Kessels AGH, Boers M, Bouter LM, et al. The Delphi list: A criteria list for quality assessment of randomized clinical trials for conducting systematic reviews developed by Delphi consensus. *J Clin Epidemiol*. 1998; 51: 1235–1241.

10. Albarrán-Planelles C, Jiménez-Gallo D, Linares-Barrios M, Martínez-Rodríguez A. Our Experience With Wet-Wrap Treatment. *Actas Dermosifiliogr* 2014; 105: 18–21.

11. Nicol N, Boguniewicz M, Strand M, Klinnert M. Wet wrap therapy in children with moderate to severe atopic dermatitis in a multidisciplinary treatment program. *J Allergy Clin Immunol* 2014; 2: 400–406.

12. Rademaker M. Face-masks for facial atopic eczema: consider a hydrocolloid dressing. *Australas J Dermatol* 2013; 54: 222–224.

13. Dabade TS, Davis DMR, Wetter DA, Hand JL, McEvoy MT, Pittelkow MR, et al. Wet dressing therapy in conjunction with topical corticosteroids is effective for rapid control of severe pediatric atopic dermatitis: experience with 218 patients over 30 years at Mayo Clinic. *J Am Acad Dermatol* 2012; 67: 100–106.

14. Ong PY, Ferdman RM, Dunaway T, Church JA, Inderlied CB. Down-regulation of atopic dermatitis-associated serum chemokines by wet-wrap treatment: a pilot study. *Ann Allergy Asthma Immunol* 2008; 100: 286–287.

15. Heide R, de Waard-van der Spek FB, den Hollander JC, Tank B, Oranje AP. Efficacy of 25% diluted fluticasone propionate 0.05% cream as wet-wrap treatment in cutaneous mastocytosis. *Dermatology* 2007; 214: 333–335.

16. Hon K-LE, Wong K-Y, Cheung L-K, Ha G, Lam M-CA, Leung T-F, et al. Efficacy and problems associated with using a wet-wrap garment for children with severe atopic dermatitis. *J Dermatolog Treat* 2007; 18: 301–305.

17. Lee JH, Lee SJ, Kim D, Bang D. The effect of wet-wrap dressing on epidermal barrier in patients with atopic dermatitis. *J Eur Acad Dermatol Venereol* 2007; 21: 1360–1368.

18. Gutman A, Kligman A, Sciacca J, James W. Soak and smear – a standard technique revised. *Arch Dermatol* 2005; 141: 1556–1559.

19. McGowan R, Tucker P, Joseph D, Wallace AM, Hughes I, Burrows NP, et al.

Short-term growth and bone turnover in children undergoing occlusive steroid ('Wet-Wrap') dressings for treatment of atopic eczema. *J Dermatolog Treat* 2003; 14: 149–152.

20. Wolkerstorfer A, Savelkoul H, de Waard-van der Spek FB, Neijens H, van Meurs T, Oranje A. Soluble E-selectin and soluble ICAM-1 levels as markers of the activity of atopic dermatitis in children. *Pediatr Allergy Immunol* 2003; 14: 302–306.

21. Tang WYM. Diluted steroid facial wet wraps for childhood. *Dermatology* 2000; 200: 338–339.

22. Oranje AP, Wolkerstorfer A, de Waard-van der Spek FB. Treatment of erythrodermic atopic dermatitis with "wet-wrap" fluticasone propionate 0.05% cream/emollient 1: 1 dressings. *J Dermatolog Treat* 1999; 10: 73–74.

23. Tang W, Chan H. Outpatient, short-term, once-daily, diluted, 0.1% mometasone furoate wet-wraps for childhood atopic eczema. *J Dermatolog Treat* 1999; 10: 157–163.

24. Mallon E, Powell S, Bridgman A. "Wet-wrap" dressings for the treatment of atopic eczema in the community. *J Dermatolog Treat* 1994; 5: 97–98.

25. Shiow-Fern N, Pit-Chin L, Yong-Boey S. Hydrogel-gauze dressing for moderate-to-severe atopic dermatitis: development and efficacy study on atopic dermatitis-like skin lesions in NC/Nga mice. *Drug Dev Ind Pharm* 2013; 9045: 1–9.

26. Janmohamed SR, Oranje AP, Devillers AC, Rizopoulos D, van Praag MCG, Van Gysel D, et al. The proactive wet-wrap method with diluted corticosteroids versus emollients in children with atopic dermatitis: a prospective, randomized, double-blind, placebo-controlled trial. *J Am Acad Dermatol* 2014; 70: 1076–1082.

27. Foelster-Holst R, Nagel F, Zoellner P, Spaeth D. Efficacy of crisis intervention treatment with topical corticosteroid prednicarbat with and without partial wet-wrap dressing in atopic dermatitis. *Dermatology* 2006; 212: 66–69.

28. Hindley D, Galloway G, Murray J, Gardener L. A randomised study of "wet wraps" versus conventional treatment for atopic eczema. *Arch Dis Child* 2006; 91: 164–168.

29. Beattie PE, Lewis-Jones MS. A pilot study on the use of wet wraps in infants with moderate atopic eczema. *Clin Exp Dermatol* 2004; 29: 348–353.

30. Schnopp C, Holtmann C, Stock S, Remling R, Fölster-Holst R, Ring J, et al. Topical steroids under wet-wrap dressings in atopic dermatitis-A vehicle-controlled trial. *Dermatology* 2002; 204: 56–59.

31. Devillers ACA, de Waard-van der Spek FB, Mulder PGH, Oranje a P. Treatment of refractory atopic dermatitis using "wet-wrap" dressings and diluted corticosteroids: results of standardized treatment in both children and adults. *Dermatology* 2002; 204: 50–55.
32. Pei AY, Chan HH, Ho KM. The effectiveness of wet wrap dressings using 0.1% mometasone furoate and 0.005% fluticasone propionate ointments in the treatment of moderate to severe atopic dermatitis in children. *Pediatr Dermatol* 2001; 18: 343–348.
33. Wolkerstorfer A, Visser RL, De Waard van der Spek FB, Mulder PGH, Oranje AP. Efficacy and safety of wet-wrap dressings in children with severe atopic dermatitis: influence of corticosteroid dilution. *Br J Dermatol* 2000; 143: 999–1004.
34. Oranje AP, Verbeek R, Verzaal P, Haspels I, Prens E, Nagelkerken L. Wet-wrap treatment using dilutions of tacrolimus ointment and fluticasone propionate cream in human APOC1 (+/+) mice with atopic dermatitis. *Br J Dermatol* 2009; 160: 54–61.
35. Braham SJ, Pugashetti R, Koo J, Maibach HI. Occlusive therapy in atopic dermatitis: Overview. *J Dermatolog Treat* 2010; 21: 62–72.
36. Barham KL, Yosipovitch G. It's a wrap: the use of wet pajamas in wet-wrap dressings for atopic dermatitis. *Dermatol Nurs* 2005; 17: 365–367.
37. Goodyear H, Harper J. "Wet wrap" dressings for eczema: an effective treatment but not to be misused. *Br J Dermatol* 2002; 146: 157–161.
38. Twitchen L, Lowe A. Atopic eczema and wet-wrap dressings. *Prof nurse* 1998; 14: 113–116.
39. Bridgman A. The use of wet wrap dressings for eczema. *Paediatr Nurs* 1995; 7: 24–27.
40. Lynch F, Ravits H. Gauze gloves for wet-compress therapy. *AMA Arch Dermatology* 1958; 78: 394.
41. Ehrlich R. Evaluation of a wet compress preparation in pruritus ani. *Am J Proctol* 1956; 6: 497–498.
42. Bridgman A. Management of atopic eczema in the community. *Heal Visit* 1994; 67: 226–227.
43. Donald S. Know-how. Wet wraps in atopic eczema. *Nurs Times* 1997; 93: 67–68.
44. Harper J. Topical corticosteroids for skin disorders in infants and children. *Drugs* 1988; 36: 24–27.

45. Hawkins K. Wet dressings. *Crit Care Updat* 1982; 9: 24–26.
46. Lambert A. The role of wet-wrapping technique in eczema management. *Community Nurse* 1998; 4: s3–s4.
47. Turnbull R, Atherton D. Use of wet-wrap dressings in atopic eczema. *Paediatr Nurs* 1994; 6: 22–26.
48. Venables J. The management and treatment of eczema. *Nurs Stand* 1995; 9: 25–28.
49. Turnbull R, Turnbull R. Wet-wrapping in eczema care. *Community Nurse* 1999; 5: 31–32.
50. Page B. The benefits of Tubifast Garments in the management of atopic eczema. *Br J Nurs* 2005; 14: 289–292.
51. Berth-Jones J. Six Area, Six Sign Atopic Dermatitis (SASSAD) severity score: a simple system for monitoring disease activity in atopic dermatitis. *Br J Dermatol* 1996; 135: 25–30.
52. Oranje AP, Glazenburg EJ, Wolkerstorfer A, de Waard-van der Spek FB. Practical issues on interpretation of scoring atopic dermatitis: the SCORAD index, objective SCORAD and the three-item severity score. *Br J Dermatol* 2007; 157: 645–648.
53. Stalder J, Taieb A. Severity Scoring of Atopic Dermatitis: The SCORAD Index. *Dermatology* 1993; 186: 23–31.
54. Kunz B, Oranje A, Labreze L, Stalder J. Clinical validation and guidelines for the SCORAD Index: Consensus report of the European Task Force on Atopic Dermatitis. *Dermatology* 1997; 195: 10–19.
55. Hwang SM, Ahn SK, Menon GK, D P, Choi EH, Lee SH. Pharmacology and therapeutics basis of occlusive therapy in psoriasis: correcting defects in permeability barrier and calcium gradient. *Int J Dermatol* 2001; 40: 223–231.
56. Carel K, Bratton DL, Miyazawa N, Gyorkos E, Kelsay K, Bender B, et al. The Atopic Dermatitis Quickscore (ADQ): validation of a new parent-administered atopic dermatitis scoring tool. *Ann Allergy Asthma Immunol* 2008; 101: 500–507.
57. Jungersted JM, Høgh JK, Hellgren LI, Jemec GBE, Agner T. Skin barrier response to occlusion of healthy and irritated skin: differences in trans-epidermal water loss, erythema and stratum corneum lipids. *Contact Dermatitis* 2010; 63: 313–319.
58. Hanifin J, Rajka G. Diagnostic features of atopic dermatitis. *Acta Derm*

Venereol 1980; Suppl 92: 44–47.

59. Williams HC, Burney PGJ, Hay RJ, Archer CB, Shipley MJ, Hunter JJA, et al. The U.K. Working Party's Diagnostic Criteria for Atopic Dermatitis. I. Derivation of a minimum set of discriminators for atopic dermatitis. *Br J Dermatol* 1994; 131: 383–396.

60. Sampson HA. Pathogenesis of eczema. *Clin Exp Allergy* 1990; 20: 459–467.