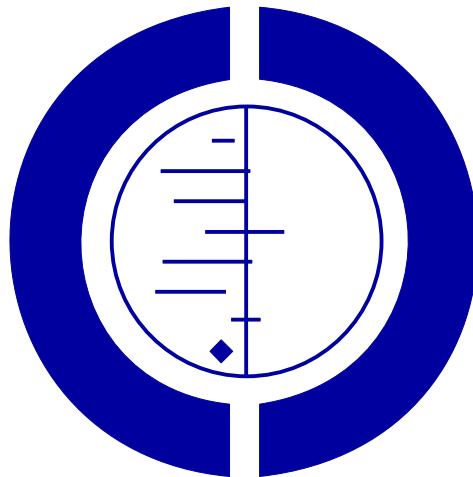


# Creams for preventing stretch marks in pregnancy (Review)

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Date of most recent substantive amendment: 30 November 1995

## A B S T R A C T

### Background

Striae gravidarum (stretch marks developing during pregnancy) occur in over 50% of women. There is no evidence that any treatment removes striae once they have appeared. Some women are upset about the change in the appearance of their skin.

### Objectives

To assess the effects of topical treatments in preventing the development of stretch marks.

### Search strategy

We searched the Cochrane Pregnancy and Childbirth Group trials register (April 2004).

### Selection criteria

Randomised trials comparing active creams with either no treatment or placebo for the treatment of stretch marks in pregnant women.

### Data collection and analysis

Two review authors assessed trial quality and extracted data independently.

### Main results

Two studies involving 130 women in total, were included.

One study, involving 80 women, indicated that, compared to placebo, massage with a cream (Trofolastin) containing Centella asiatica extract, alpha tocopherol and collagen-elastin hydrolysates was associated with less women developing stretch marks (odds ratio (OR) 0.41, 95% confidence interval (CI) 0.17 to 0.99). A second study of 50 women compared massage using an ointment (Verum) containing tocopherol, panthenol, hyaluronic acid, elastin and menthol with no treatment. Massage with the ointment was associated with less women developing stretch marks (OR 0.26, 95% CI 0.08 to 0.84).

### Authors' conclusions

Trofolastin cream appears to help prevent the development of stretch marks in pregnancy in some women. Verum ointment may be helpful but the trial had no placebo and may show the benefit of massage alone.

## S Y N O P S I S

Stretch marks may be prevented in some women by daily massage but it is unclear if any particular ingredients bring special benefit.

Stretch marks are common by the end of pregnancy, occurring in most women. Though they later shrink and fade somewhat, they do not go away. Therefore, any treatment which prevented them would be welcomed by many women. The two papers reviewed may show that any cream massaged onto the abdomen, thighs and breasts (areas most affected by stretch marks) may help a little. There may be additional benefit from certain ingredients in the cream and the ointment described but it is unknown which constituent(s) is beneficial. Neither preparation is widely available.

## BACKGROUND

Many women (between 50% and 80% are reported) develop stretch marks (striae gravidarum) during pregnancy. A number of creams have been claimed to remove these stretch marks once they have developed but there is no reliable evidence to support such claims. Any topical treatment which could prevent the development of striae would be welcomed by many women.

## OBJECTIVES

To assess the effects of topical treatments applied during pregnancy on the later development of stretch marks.

## CRITERIA FOR CONSIDERING STUDIES FOR THIS REVIEW

### Types of studies

All randomised trials comparing active creams with placebo or with no treatment.

### Types of participants

Pregnant women presenting up to 20 weeks gestation.

### Types of intervention

Active cream (Trofolastin), containing Centella asiatica extract, alpha tocopherol and collagen-elastin hydrolysates applied daily until labour, compared with placebo.

Active ointment (Verum), containing tocopherol, essential fatty acids, panthenol, hyaluronic acid, elastin and menthol, compared with no treatment.

### Types of outcome measures

The presence of stretch marks was assessed at inclusion into the study and soon after childbirth.

## SEARCH STRATEGY FOR IDENTIFICATION OF STUDIES

See: Pregnancy and Childbirth Group search strategy

We searched the Cochrane Pregnancy and Childbirth Group trials register (April 2004).

The Cochrane Pregnancy and Childbirth Group's trials register is maintained by the Trials Search Co-ordinator and contains trials identified from:

1. quarterly searches of the Cochrane Central Register of Controlled Trials (CENTRAL);
2. monthly searches of MEDLINE;

3. handsearches of 30 journals and the proceedings of major conferences;

4. weekly current awareness of a further 37 journals.

Details of the search strategies for CENTRAL and MEDLINE, the list of handsearched journals and conference proceedings, and the list of journals reviewed via the current awareness service can be found in the 'Search strategies for identification of studies' section within the editorial information about the Cochrane Pregnancy and Childbirth Group.

Trials identified through the searching activities described above are given a code (or codes) depending on the topic. The codes are linked to review topics. The Trials Search Co-ordinator searches the register for each review using these codes rather than keywords.

## METHODS OF THE REVIEW

We evaluated trials under consideration for methodological quality and appropriateness for inclusion, without consideration of their results. We processed trial data as described in Clarke 2000.

## DESCRIPTION OF STUDIES

See table of 'Characteristics of included studies.'

## METHODOLOGICAL QUALITY

The only placebo controlled trial (Mallol 1991) included in this review was randomised but the method is not described. However, serious attempts were made to blind both participants and assessors: the two creams were made to look, feel and smell the same. The study using Verum ointment (Wierrani 1992) was poorly randomised using alternate day allocation and used no placebo ointment for the controls rendering blinding impossible.

## RESULTS

Two studies, involving 130 women in total, were included.

Overall 56% of the placebo group developed stretch marks during pregnancy compared with 34% in the active Trofolastin treatment group. However, in women with stretch marks from a previous pregnancy, there was no evidence of benefit. Interestingly, the greatest benefit was to women who had previously developed stretch marks during puberty. No explanation is offered for this finding. In the second study, 62% of untreated women developed stretch marks compared with 26% in the active Verum group. This difference appears very striking but the trial was poorly randomised and the control group received no massage of any kind.

Obese women tended to develop stretch marks even given the ointment.

## DISCUSSION

Stretch marks are not an illness but many women are upset by the appearance of such marks during pregnancy. There is no treatment for them once they have developed. The one placebo controlled trial described does indicate that some women and especially those who developed stretch marks in puberty may be able to avoid getting further marks in pregnancy. One trial of ointment versus no treatment showed benefit but it is possible that massage alone might have produced part if not all of this result. In this second study obese women did not seem to benefit from the ointment used.

## AUTHORS' CONCLUSIONS

Implications for practice

The active creams in the studies described are not widely available. It is not clear which, if any, particular ingredient is helpful. No adverse effects are reported. It is possible that women who developed stretch marks in puberty may benefit most, though surprisingly, women who developed stretch marks in a previous pregnancy gained no benefit. Obese women may not be helped by massage. There is a suggestion from the combined results that massage itself with any emollient cream may bring slight benefit.

Implications for research

Given the high possibility (probably over 50%) of any woman developing stretch marks by the end of her pregnancy, it is surprising that there are only two published randomised trials of preventive topical treatment and only one of these used a placebo control. Larger studies looking at individual ingredients would be helpful also examining particular groups of women to see if any such groups gain particular benefit. A trial of simple emollient cream versus no treatment might show whether massage on its own is helpful as even this is unclear.

## ACKNOWLEDGEMENTS

None.

## POTENTIAL CONFLICT OF INTEREST

None known.

## SOURCES OF SUPPORT

External sources of support

No sources of support supplied

Internal sources of support

No sources of support supplied

## REFERENCES

### References to studies included in this review

Mallol 1991 ~~Published data only~~

Belda MA, Costa D, Noval A, Sola M, Mallol J. Prophylaxis of striae gravidarum with a topical formulation - a double blind study. Proceedings of 22nd International Congress of Confederation of Midwives, 1991 October 7-12; Kobe, Japan. 1991.

Mallol J, Belda MA, Costa D, Noval A, Sola M. Prophylaxis of striae gravidarum with a topical formulation. A double blind trial. International Journal of Cosmetic Science 1991;3:51{7.

Wierrani 1992 ~~Published data only~~

Wierrani F, Kozak W, Schramm W, Grunberger W. Attempt of preventive treatment of striae gravidarum using preventive massage ointment administration. Wiener Klinische Wochenschrift 1992;104:42{4.

### References to studies excluded from this review

Martius 1973

Martius G. Prevention of striae gravidarum. Medizinische Welt 1973; 24:799{800.

Puder 1965

Puder H. Treatment of striae gravidarum. Medizinische Welt 1965; 16:650{3.

### References to studies awaiting assessment

de-Buman 1987

de-Buman M, Walther M, de-Weck R. Effectiveness of Alphastrria cream in the prevention of pregnancy stretch marks (striae distensae). Results of a double-blind study. Gynakologische Rundschau 1987;27: 79{84.

### Additional references

Clarke 2000

Clarke M, Oxman AD, editors. Cochrane Reviewers Handbook 4.2 [updated February 2003]. In: The Cochrane Library [database on

References to other published versions of this review

Young 1995

Young GL. A cream to prevent striae gravidarum. [revised 12 May 1993] In: Enkin MW, Keirse M.J.N.C., Renfrew M.J, Neilson J.P, Crowther C (eds) Pregnancy and Childbirth Module. In: The Cochrane Pregnancy and Childbirth Database [database on disk and CDROM] The Cochrane Collaboration; Issue 2, Oxford: Update Software, 1995.

□ Indicates the major publication for the study

T A B L E S

Characteristics of included studies

Study	Mallo 1991
Methods	Method of randomisation not defined but placebo cream was identical in colour, odour and texture. Allocation codes were not opened until the study was completed.
Participants	80 women □ first attending for antenatal consultation in Barcelona before 13 weeks
Interventions	Active cream (Trofolastin) (41) containing Centella asiatica extract and tocopherol and collagen - elastin hydrolysates vs placebo (39) applied daily from 12 weeks to onset of labour.
Outcomes	Development of stretch marks
Notes	
Allocation concealment	A

Study	Wierrani 1992
Methods	Randomisation was by date. Women enrolled on even dates were given no treatment; those enrolled on odd dates were given ointment to massage onto their abdomens, thighs and breasts (frequency unstated).
Participants	50 women aged 18-35 years attending an antenatal clinic in Vienna at 20 weeks gestation.
Interventions	The ointment contained: Vitamin E, essential fatty acids, panthenol, hyaluronic acid, elastin and menthol. This was given to 24 women. 26 women were given no treatment.
Outcomes	Development of stretch marks
Notes	
Allocation concealment	C
	vs versus

Characteristics of excluded studies

Martius 1973	Not stated whether this study was randomised. Both review authors believe it was not and attempts to contact the author have failed.
Puder 1965	Not randomised.

Characteristics of excluded studies (Continued)

G R A P H S

Comparison 01. Trofolastin cream versus placebo to prevent stretch marks

Outcome title	No. of studies	No. of participants	Statistical method	Effect size
01 Development of stretch marks	1	80	Peto OddsRatio 95% CI	0.41 [0.17, 0.99]

Comparison 02. Verum ointment versus no treatment to prevent stretch marks

Outcome title	No. of studies	No. of participants	Statistical method	Effect size
01 Development of stretch marks	1	50	OddsRatio (Fixed) 95% CI	0.26 [0.08, 0.84]

I N D E X T E R M S

Medical Subject Headings (MeSH)

Cosmetics; Ointments; Skin

Medical MeSH check words

Female; Humans; Pregnancy

C O V E R S H E E T

Title	Creams for preventing stretch marks in pregnancy
Authors	Young GL, Jewell D
Contribution of author(s)	Both review authors contributed to the development of the review and its update.
Issue protocol first published	1996/2
Review first published	1996/2
Date of most recent amendment	16 November 2004
Date of most recent SUBSTANTIVE amendment	30 November 1995
What's New	May 2004: A second study ( Wierrani 1992) has been reviewed. This compares massage using an ointment containing several possibly active ingredients with no treatment.
Date new studies sought but none found	Information not supplied by author
Date new studies found but not yet included/excluded	Information not supplied by author
Date new studies found and included/excluded	30 April 2004
Date authors' conclusions section amended	Information not supplied by author
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GRAPHS AND OTHER TABLES

Fig. 1. Comparison 01. Trofolastin cream versus placebo to prevent stretch marks

01.01 Development of stretch marks

Review: Creams for preventing stretch marks in pregnancy

Comparison: 01 Trofolastin cream versus placebo to prevent stretch marks

Outcome: 01 Development of stretch marks

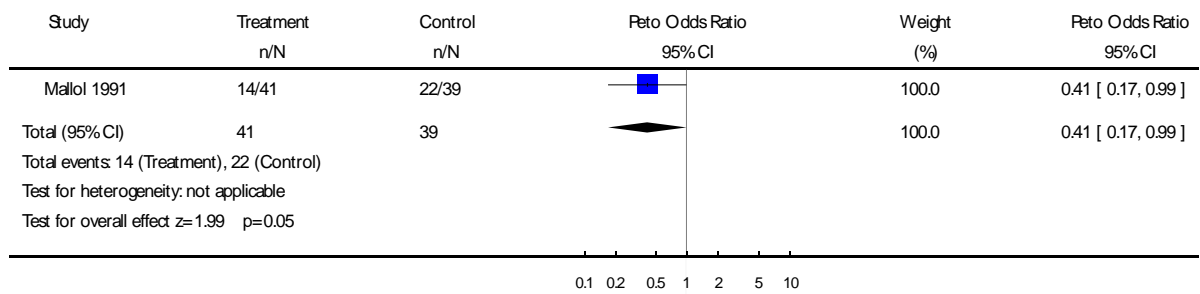




Fig. 2. Comparison 02. Verum ointment versus no treatment to prevent stretch marks

02.01 Development of stretch marks

Review: Creams for preventing stretch marks in pregnancy

Comparison: 02 Verum ointment versus no treatment to prevent stretch marks

Outcome: 01 Development of stretch marks

