Authors' objectives
To determine the effectiveness of steroids, acyclovir, and surgical facial nerve decompression in Bell's palsy.

Searching
MEDLINE was searched from 1966 to June 2000. The search terms included 'facial paralysis', 'Bell's palsy', 'prednisone', 'prednisolone', 'hydrocortisone', 'acyclovir' and 'surgery'. The references of the retrieved studies were examined for additional studies.

Study selection
Study designs of evaluations included in the review
To be included in the review, the studies had to prospectively enrol patients and have a control group, i.e. controlled studies.

Specific interventions included in the review
The interventions eligible for inclusion were steroids, acyclovir or surgery. The steroids investigated in the included trials were prednisone (216 to 760 mg), hydrocortisone (1 g) and prednisolone (1 mg/kg to 420 mg); these were compared with placebo. Ayclovir (400 mg, 5 times daily to 1,000 mg every day) alone or in combination with prednisone was compared with prednisone alone. The duration of the steroid intervention ranged from 8 to 17 days. The surgical approaches included: vertical, stylomastoid mid cranial fossa; mid cranial fossa and meatal foramen; transmastoid, extralabyrinthine, subtemporal. These were compared to medical therapy.

Participants included in the review
Studies of patients with Bell's palsy were eligible for inclusion.

Outcomes assessed in the review
No inclusion criteria relating to the outcomes were reported. The outcomes reported in the studies included the proportion of patients recovering good or complete facial function.

How were decisions on the relevance of primary studies made?
The authors do not state how the papers were selected for the review, or how many of the reviewers performed the selection.

Assessment of study quality
The studies were graded according to their study design as follows.

Class I: the evidence is provided by a randomised, controlled clinical trial (RCT) with masked outcome assessment in a representative population. Class II: the evidence is provided by a non-randomised controlled study in a representative population with masked outcome assessment, or a RCT that meets all but one of the Class I criteria.

Class III: all other controlled trials in a representative population where outcome assessment is independent of the treatment.

Class IV: the evidence is from studies not assessing outcomes independent of treatment, uncontrolled studies, case series, case reports, or expert opinion.
The studies were graded independently by two reviewers. Any differences were resolved after discussion.

Data extraction
The authors do not state how the data were extracted for the review, or how many of the reviewers were involved in the data extraction. Data were extracted on the following: cohort size and study setting; treatment allocation method; age; gender; severity of palsy; duration of palsy before treatment; medication regimen used or decompression procedure performed; the length of follow-up; the percentage of patients completing the study; and the method of facial function outcome assessment, including the use of masking. The relative risk (RR) of patients recovering good facial function and complete facial function in the treated group, compared with the control group, was calculated for each study. The 95% confidence intervals (CIs) for the RRs were calculated.

Methods of synthesis
How were the studies combined?
The results were pooled using general variance-based meta-analytic models. Studies with the lowest risk of bias were pooled first; studies with a higher risk of bias were only added when it was necessary to increase precision.

How were differences between studies investigated?
A statistical test for heterogeneity was performed. The authors do not report any details of the test.

Results of the review
Sixteen studies (n=1,617) were included.

Steroids (9 studies including 4 RCTs).

The pooled RR for good facial recovery for the RCTs was 1.16 (95% CI: 1.05, 1.29); there was no evidence of heterogeneity (p=0.59). No study showed a significant differences in the time to recovery between steroid-treated patients and controls. Three studies reported side-effects of steroid treatment. These occurred in 1 to 4% of the patients and included dyspepsia, loss of blood sugar control, recurrent duodenal ulcers, mood swings, and acute psychosis. All effects resolved when the treatment was stopped.

Acyclovir (3 studies including 1 RCT).

The RCT found a significant benefit of acyclovir combined with prednisone when compared with prednisone alone. The RR for good facial outcome was 1.22 (95% CI: 1.02, 1.45). The reported frequencies and nature of the side-effects were similar to those with steroids.

Surgery or facial nerve decompression (4 studies, 0 RCTs).

All studies were of poor quality (class IV). Only one study found a significant association between surgery and improved facial outcome. Permanent unilateral deafness was the most common serious side-effect, with one old study reporting deafness in 15% of the patients. More recent studies report much lower complication rates.

Authors' conclusions
A benefit from steroids, acyclovir, or facial nerve decompression has not been definitively established for patients with Bell's palsy. However, the available evidence suggests that steroids are probably effective and acyclovir (combined with prednisone) is possibly effective in improving facial function outcomes. There is insufficient evidence to make recommendations regarding surgical facial nerve decompression for Bell's palsy. Well-designed studies of the effectiveness of treatments for Bell's palsy are still needed.

CRD commentary
This was an average review of the area. The literature search was limited to one electronic database and no attempts...
were made to identify unpublished studies. Important studies may, therefore, have been missed and the results may be subject to publication bias.

The inclusion criteria were clearly stated, although those relating to study design could have been phrased more clearly. Very few details of the review process were presented, thus it is not possible to assess whether the review was conducted with the minimum risk of bias. A validity assessment was conducted but at levels of evidence approach, rather than a checklist, was used. Levels of evidence generally only address a limited number of items and it is not always clear which items each study fulfils; quality checklists are, therefore, generally more informative. Details of the studies were tabulated, with the exception of details of the control interventions; limited information on these was provided in the text. The authors emphasised the results of the higher quality studies in their synthesis, which was appropriate.

The authors conclusions are supported by the results presented, but should be interpreted with some degree of caution due to the limitations highlighted.

**Implications of the review for practice and research**

Practice: The authors did not state any implications for practice.

Research: The authors state that 'well-designed studies of the effectiveness of treatments for Bell's palsy are still needed'.

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This is a critical abstract of a systematic review that meets the criteria for inclusion on DARE. Each critical abstract contains a brief summary of the review methods, results and conclusions followed by a detailed critical assessment on the reliability of the review and the conclusions drawn.