CRD summary
The review concluded the identification of migraine test was a brief, practical and easy to use diagnostic tool; its application was likely to improve diagnosis and management of migraine. These conclusions are not fully supported by the data; no data were presented on practicality or impact on patient management. Accuracy data indicated that the ability to rule-in migraine was moderate.

Authors' objectives
To assess the diagnostic accuracy of the identification of migraine test (ID migraine) as a decision rule for diagnosing patients with migraine.

Searching
PubMed, EMBASE and The Cochrane library were searched to November 2010 with no language restrictions. Search terms were reported and included terms for test accuracy study methods. Bibliographies of retrieved articles and Google Scholar were searched for additional studies.

Study selection
Cohort or cross-sectional studies were eligible for inclusion if they assessed the accuracy of the US three-item identification of migraine as a decision rule and used the International Headache Society (IHS) criteria as the reference standard. Studies were required to report sufficient data for the calculation of sensitivity, specificity, negative, and positive predictive values and the prevalence of migraine. Studies that included patients with a chronic disease were excluded.

The included studies were conducted in the USA, Europe and the far East, in a variety of settings, including primary care, headache clinics and neurology outpatients. Pre-screening varied but usually included patients with two or more headaches in the previous three months and/or those who experienced headache which limited ability.

Two reviewers screened all potentially relevant articles for inclusion for inclusion.

Assessment of study quality
The methodological quality of included studies was assessed using a modified version of the QUADAS (Quality Assessment of Diagnostic Accuracy Studies) tool, which excluded the item on clinical review bias.

Two reviewers independently assessed study quality; disagreements were resolved by consensus, or consultation with a third reviewer.

Data extraction
Data were extracted on the pre-screening items used, the prevalence of migraine, and the number of true positive, false positive, true negative and false negative test results for the identification of migraine.

The authors did not state how many reviewers performed the data extraction.

Methods of synthesis
Pooled estimates of sensitivity and specificity, with 95% confidence intervals (CIs) were estimated using a bivariate random-effects model. Summary positive and negative likelihood ratios were calculated from these estimates.

Between study heterogeneity was assessed visually using the summary receiver operating characteristic (SROC) plots and statistically using the variance of logit transformed sensitivity and specificity.

Results of the review
Thirteen studies (5,866 patients, range 37 to 1,816) were included in the review. The overall quality of the included
studies was judged to be moderate to good. However, interpretation of identification of migraine test blind to the reference standard was unclear in 12 studies, and interpretation of the reference standard blind to the migraine tool was unclear in five studies. In addition, 10 studies did not clearly report the time between application of the identification of migraine test and the reference standard. Finally, possible spectrum bias was identified in seven studies that did not include patients who were representative of those who should receive the identification of migraine test in primary care, neurology departments, or headache clinics.

The pooled estimate of sensitivity for the identification of migraine tool was 84% (95% CI 75 to 90); pooled specificity was 76% (95% CI 69 to 83). The positive likelihood ratio pooled estimate was 3.55 (95% CI 2.76 to 4.57) and pooled negative likelihood ratio was 0.21 (95% CI 0.14 to 0.32).

A sensitivity analysis, which included the six studies conducted in primary care, headache clinics and neurology departments, gave similar results.

**Authors’ conclusions**
The identification of migraine test was a brief, practical and easy to use diagnostic tool for migraine. Application of this test was likely to improve appropriate diagnosis and management of migraine sufferers.

**CRD commentary**
This review provided a clearly stated objective, which was defined by appropriate inclusion criteria. A number of sources were searched for relevant studies and no language restrictions were applied, which minimised the possibility of language bias. However, the search strategy included test accuracy study method terms, which could reduce search sensitivity and result in the omission of relevant articles. Methods to minimise reviewer error and/or bias were used, but it was unclear whether these methods were applied to data extraction. The quality of included studies was assessed and reported. The results of individual studies were not reported. Meta-analyses used appropriate methods.

The authors’ conclusions appeared to go beyond the data presented. No data was presented on the practicality of the identification of migraine test or its impact on patient management. Accuracy data indicated that specificity (ability to rule-in migraine) was moderate.

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

**Practice:** The authors stated that clinicians could consider a positive score in the identification of migraine test as an indication to start patients on migraine-specific medication and monitor their response to treatment to ensure that symptoms improved or (for prophylaxis) that migraine frequency was reduced.

**Research:** The authors did not specify any recommendations for future research.

**Funding**
Health Research Board (HRB) of Ireland through the HRB Centre for Primary Care Research; Radboud University Nijmegen Medical School, the Netherlands and Royal College of Surgeons in Ireland Medical School, Erasamus Exchange Student Research Fellowship.

**Bibliographic details**

**PubMedID**
21649653

**DOI**
10.1111/j.1526-4610.2011.01916.x

**Original Paper URL**
Indexing Status
Subject indexing assigned by NLM

MeSH
Humans; Migraine Disorders /diagnosis; Predictive Value of Tests; Reproducibility of Results; Sensitivity and Specificity

AccessionNumber
12011004926

Date bibliographic record published
09/11/2011

Date abstract record published
21/05/2012

Record Status
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.