C.2.2 Headache

Component	Description
Review question	In children under 12 who present with headache, what is the accuracy of accompanying signs and symptoms to support non-specialists in identifying suspected neurological conditions?
Objectives	To identify signs and symptoms that, if presenting with headache, would indicate a suspected neurological condition that requires referral for further specialist assessment.
Population	Children under 12 who present to a non-specialist with headache.
Presence or absence of predictors	The committee identified the following predictors in people who present to a non-specialist with headache, for inclusion in the review: • ataxia • change in personality • failure of upward gaze

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	• head size • nausea • nocturnal or headaches on awakening • onset of strabismus • progressive time course • specific learning difficulties • vomiting • weight loss.

Outcomes	**Main outcomes:**
	• Sensitivity (%) and specificity (%)
	• Area under the ROC curve (AUROC) – measure of predictive accuracy
	• Positive and negative predictive values
	Other outcomes:
	• Adjusted odds ratios for the presence of the following conditions:
	  ○ brain tumour
	  ○ chronic daily headaches
	  ○ hydrocephalus
	  ○ idiopathic intracranial hypertension
	  ○ intracranial infection
	  ○ migraine
	  ○ nocturnal hypoventilation
	  ○ raised intracranial pressure
	  ○ sinusitis
	  ○ venous sinus thrombosis.

Study design	Prospective or retrospective cohort studies and case-control studies with multivariate analysis
Exclusions	• Neonates (infants aged 28 days and under) • Adults and young people aged 12 or over, as these would be covered by CG150 (Headaches in over 12s: diagnosis and management) • Studies unadjusted for any of the identified predictors listed above • Studies with univariate analysis
How the information will be searched	The following neurological condition groups* will form the basis of the search strategy: • central nervous system infections • development disorders • functional Disorders • headaches and migraine • tumours of the nervous system • catch-all group – rare and other neurological diseases. **Condition groups taken from Defining Adult Neurological Conditions, National Neurology Intelligence Network, April 2016.*
Key confounders	Any of the predictors listed above
The review strategy	• Statistical outputs may include sensitivity, specificity, adjusted odds rations and AUC. • Meta-analysis where appropriate will be conducted. • Evidence from indirect settings that the committee evaluate to be generalisable to a non-specialist setting will be included in the review.

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	• The risk of bias of each study will be assessed using the QUADAS-2 checklist for diagnostic studies or the NGC checklist for prognostic studies. • The overall quality of the evidence will be assessed using an adapted version of GRADE. • The review may cross-refer to existing NICE guidance, which has identified early signs and symptoms for neurological conditions that present with headache.