C.2.3 Head shape or size abnormalities

Component	Description
Review question	In children and babies who present with abnormal head shape or size, what is the accuracy of accompanying signs and symptoms to support non-specialists in identifying neurological problems?
Objectives	To identify signs and symptoms which if presenting with abnormal head shape or size would indicate a neurological condition that requires referral for further specialist assessment
Population	Children and babies who present to a non-specialist with abnormal head shape or size
Presence or absence of predictor	The committee Identified the following predictors in children and babies who present to a non-specialist with abnormal head shape or size, for inclusion in this review: • acquired head injury • age • developmental delay • distance between tragus and lateral canthus of eye • facial asymmetry • fontanelle closure • history of prematurity • occipital – frontal circumference (OFC) • proptosis • ridging of cranial sutures.

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:
	  ○ familial macrocephaly
	  ○ growing skull fracture
	  ○ hydrocephalus
	  ○ microcephaly
	  ○ multiple suture synostosis
	  ○ positional plagiocephaly
	  ○ single suture synostosis
	  ○ syndromic synostosis.

Study design	Prospective or retrospective cohorts
Exclusions	• Neonates (infants aged 28 days and under) • Studies unadjusted for any of the identified predictors listed above ○ studies with univariate analysis only

Component	Description
How the information will be searched	The following condition groups will form the basis of the search strategy: • central nervous system infections • cranial nerve disorder • development disorders • epilepsy • headaches and migraine • motor neurone disease and spinal muscular atrophy • neuromuscular diseases • peripheral nerve disorders • sleep disorders • traumatic brain and spine injury • tumours of the nervous system • catch-all group – rare and other neurological diseases.
Key confounders	Any of the predictors listed above
The review strategy	• Meta-analysis where appropriate will be conducted. • Evidence from indirect settings, which the committee evaluate to be generalisable to a non-specialist setting, will be included in the review. • 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 abnormal head shape or size.