Reviewer’s report

Title: Cerebrovascular function and cognition in childhood: a systematic review of transcranial doppler studies

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Reviewer: Fenella Kirkham

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This is an interesting review of the available literature linking transcranial Doppler to cognitive function in children.

The data from infants typically relates outcome after a few years of follow-up in children who have had serial measurements of velocity in infancy; those with low velocity are likely to have had low cerebral blood flow.

The TCD data from children with sickle cell disease and sleep-disordered breathing are taken from a time close to the cognitive testing and may represent globally raised cerebral blood flow in the context of the anemia or focally reduced cerebral blood flow if the blood vessel is narrow.

The fMRI data are typically contemporaneous.

It would be helpful to look at the time between TCD and cognitive testing.

The table with all the literature could be arranged as studies in children followed-up from infancy, studies in sickle cell disease, studies in autism and developmental delay and fTCD studies.

Level of interest: An article of importance in its field.

Quality of written English: Acceptable.

Statistical review: No, the manuscript does not need to be seen by a statistician.

Declaration of competing interests:

I declare that I have no competing interests.