Factors associated with spoken language comprehension in children with Cerebral Palsy
A systematic review

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Introduction
Almost 75% of the children with Cerebral Palsy (CP) have communication problems¹. Spoken language comprehension plays a pivotal role in communication². Better understanding of factors that are associated with spoken language comprehension in children with CP will help us to identify which factors facilitate or impede language.

Aim: To identify which factors influence spoken language comprehension in children with CP.

Conclusion
Knowledge about the factors that are associated with spoken language comprehension in children with CP is scarce and studies show conflicting results. We started a longitudinal research in a large cohort of children with CP to identify potential influencing factors: the CP CaLL project. This will help to determine which aspects are most beneficial to target in rehabilitation to enhance communication ability in children with CP.

Methods
A systematic literature search (PRISMA statement) was conducted using the electronic literature databases PubMed, EmBase.com, PsycINFO and Cochrane Library. Indexing terms and free text terms were based on two aspects 'cerebral palsy' and 'language development'. Data were extracted and synthesized using the ICF-CY. Peer-reviewed studies were included if they reported data of children with CP and outcomes of at least one influencing factor on spoken language comprehension.

Results
Eighteen studies were included (fig. 1), describing 1,700 children with CP.

• Associated factors are found, but also factors with conflicting results.
• Most factors, shown to play an important role in typical language development, have not yet been investigated in children with CP.
• Despite the need of augmented and alternative communication (AAC) systems in children with CP, use of AAC and/or different AAC systems and their influence on development of spoken language comprehension have not yet been reported.

Figure 1 Flowchart of search and selection process

Figure 2 Factors associated with spoken language comprehension in children with CP (ICF-CY domain)

References