



Critically Appraised Topic (CAT)



1. CLINICAL BOTTOM LINE: Children with phonologically-based speech sound disorders (SSD) are a heterogeneous group. Of the studies reviewed, none provided overwhelming evidence for the unique use of a Metaphon approach to improve the speech accuracy of children with phonologically-based SSD over other types of phonological intervention (e.g., non-linear phonological intervention). However, the results of the preliminary investigations suggest that children with severe phonological disorders may benefit from incorporated metaphonological (and phonological awareness) intervention that considers skills beyond speech accuracy (e.g., alliteration and word blending). It is recommended that phonological awareness is considered during the assessment and intervention planning for all children with SSD.

2. Clinical [PICO] Question *[patient/problem, intervention, (comparison), outcome]:*

In a child with phonological impairment of unknown origin, is a Metaphon approach effective in improving speech accuracy (e.g., as measured by PCC, error analysis, or consonant probe) over time?

3. SearchTerms/Systems: Metaphon, phonological development, Children, metaphonological, phonological skills

Criteria for including an article: Three inclusion criteria: (1) participants were primary school-aged children (younger than 9;0), (2) at least one measure of speech accuracy was reported, and (3) Metaphon was used as the intervention approach for at least one of the groups of children in the study.

4. Quantity of the evidence based:

Number of papers identified: Unknown. Number of suitable papers actually capped: 7

5. Overall level of the evidence base: (number of studies according to each NHMRC level)

I 0 II 0 III-1 1 III-2 1 III-3 0 IV 5

6. Nature the evidence base: (number of feasibility, efficacy and effectiveness studies)

Feasibility 0 Efficacy 3 Effectiveness 3

7. Overall findings from the evidence-base are:

compelling suggestive equivocal

Comments... The evidence identified in the current review provides compelling evidence to support the integration of metaphonological tasks (e.g., with a goal to build phonological awareness skills) in to the intervention plan of children with phonologically-based SSD. There is literature to support the inclusion of metaphonological tasks for children with severe SSD (e.g., Major & Bernhardt, 1998) and children with demonstrated pre-intervention metaphonological skill (e.g., Adams et al., 2000).



8. Results

Some of these preliminary reports suggest that incorporating a metaphonological approach may prompt change in speech accuracy as well as phonological awareness skills (e.g., Reid et al., 1996). However, other results suggest that children who demonstrate metaphonological skills before intervention may demonstrate improved phonological awareness skills and speech accuracy following phonologically-based intervention alone (e.g., Major & Bernhardt, 1998). The quality of the current evidence base for the use of Metaphon as a specific intervention approach is relatively low and thus, considered to only reach a *suggestive* level of findings. Promising results suggest that further evaluation of the Metaphon approach (or similar) could identify the sub-groups of children with SSD who benefit most from a Metaphon approach and the most efficient dose-frequency of intervention sessions to demonstrate change in speech output and phonological awareness skills over time. Varying results highlights the need for SLPs to

9. Recommendations:

Is *evidence* from current clinical practice the same as clinical bottomline?

Yes (the CAT is now complete) No Undecided

Undecided because:

more research evidence needed.

more evidence on clinical practice is needed

If **clinical practice is not the same** as the bottomline, and the research evidence is **compelling** (or *suggestive, if the issue is important and/or addressing an issue with limited if any research*)

change is not needed to current clinical practice, because *evidence* from clinical practice shows that current practice is more effective /efficient than evidence-based recommendations. (CAT now complete)

Change is needed to current clinical practice (then, complete box # 10).

10. Application to practice (when change has been indicated):

Change is needed, and it is possible

SLPs' assessment and intervention for children with SSD should include phonological awareness tasks to evaluate and build the metaphonological skills of children with phonologically-based SSD. The optimum dose-frequency of phonological intervention including metaphonological tasks is unknown. Thus, SLPs should evaluate changes in speech accuracy (as measured by overall consonant accuracy, a reduction in phonological process/es, or other appropriate speech measure) as well as changes in phonological awareness skills (particularly phonemic-level phonological awareness) when incorporating metaphonological skill-based tasks in to intervention. SLPs should also be cautious not to disregard the core principles of phonological intervention to accommodate for metaphonological skills. There is no evidence to suggest that intervention for metaphonological skills alone will improve speech output.

Change is needed, but it is not possible – dot point ideas to address barriers, or, state why change is not possible, and, when the issue will be re-considered.

Date: 2006

Appraised By: Members of the EBP paediatric speech group

Clinical Group: Paediatric Speech Group

NSW Speech Pathology EBP Network CAT by Baker, E. (2012). Based on Worrall & Bennett (2001), Dollaghan (2007) and NHMRC (2009).

PLEASE NOTE THE DATE WHEN THIS CAT WAS COMPLETED.

BECAUSE THE CLINICAL BOTTOMLINE MAY HAVE CHANGED IN LIGHT OF MORE RECENT RESEARCH.



References

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