

**Critical Review:**  
**In individuals with neurogenic communication disorders, does incorporating musical elements into speech and language treatment improve outcomes over traditional intervention?**

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Incorporating musical elements into traditional speech and language intervention has been of interest given the potential overlap in the cognitive processing of music and language. This critical review examined the relevant evidence, and included six articles. Study designs included case studies, a survey, mixed group, case series, and a systematic review. Overall,

## *Methods*

### Search Strategy

Computerized databases, including ProQuest, Gale Virtual Reference Library, Scholars Portal, Directory of Open Access Journals were searched using the following terms:

[(speech music therapy) OR (speech language pathology) AND (music therapy)] AND [(acquired brain

### Survey

**McCarthy et al (2008)** conducted a survey to ask about the work and experiences of 847 SLPs and music therapists working together using augmentative and alternative communication with their clients with speech and language impairments.

The objectives were clearly stated. Details regarding the individuals invited to participate and the rate of responses

responses were rated based on comprehensibility and intelligibility. Outcome measures included used a standardized language test. These improvements remained stable after treatment ended, except for intelligibility. Significant improvements were seen in all areas of articulation in 4/5 participants, and an apparent increase in efficiency in communication in daily life. Data also showed some generalization to untrained related materials and to decreasing severity of aphasia.

Overall, this study provides highly suggestive evidence of improving treatment outcomes with musical elements because of the well-planned intervention protocol and research. However, this study is weakened because of small sample size and heterogeneity of the population.

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prosody, pitch, and oral muscle control; and both singing and speech entail natural expression, frequency range, rhythm, intensity, and diction which improves articulation, intelligibility, and breath control.

Hurkmans et al. (2015) provided an alternate perspective that singing itself does not facilitate speech production, but it is the rhythm that is crucial. Especially, no familiar songs should be used in treatment because speech production is usually automatically generated in this case. Instead, novel melodies should be used in congruence with words and phrases to activate the neural system for speech and language. It is suggested that rhythm can be used to control speech rate. Lim et al. (2013) argued that even inclusion of motor operations such as rhythmic tapping and clapping are beneficial because of shared neural networks of cerebral hemisphere of the motor actions and oral production. These rate-rhythm control strategies could work on dynamics of articulation, such as timing of speech production (Hurkmans et al. 2015).

Taken together, it is agreed by (Draper 2016) that it is difficult to consolidate the key musical elements due to a lack of consistency in approaches and without durations or frequencies in treatment. It is anticipated that this uncertainty may be damaging to the compilation of intervention programs because the amount of treatment required to achieve positive results cannot be estimated (Draper 2016). In addition, it is not known the exact treatment protocols for optimal results.

### ***Conclusion***

Further studies of incorporating musical elements into traditional speech and language intervention are needed. Nevertheless, all of the studies reviewed reported results in the positive direction regarding incorporating musical elements seems across all profiles of individuals with neurogenic communication disorders. No detrimental effects were reported.

### ***Clinical Implications***

Incorporating musical elements into traditional speech and language intervention is an easy, non-invasive and alternative method to improve outcomes in individuals with neurogenic communication disorders.

The overall findings in this critical review indicate that the evidence is suggestive. The aspect of musical elements is so broad and the articles failed to pinpoint one particular musical element as an effective method that it is difficult to say which aspect is effectively contributing to the outcomes. Understandably, it is difficult to isolate the musical variable that is contributing to the result, even though there are studies that look at a specific disorder profile. As a result, clinicians must adopt an objective approach in treatment to evaluate responses with individual clients when incorporating musical elements.

#### ***Future Research Considerations:***

I. A comparison of outcomes when SLP incorporates musical elements alone versus SLP working with a MT

II. Further research investigating if the severity of NCD would affect the treatment outcomes

III. Future research to explore one musical element paired with one particular type of neural damage/disorder

IV. Further research and discussion of including musical elements in the perspective of a Speech Language Pathologist

### ***References***

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