Measuring aspects of music perception in children with Cochlear Implants (CIs): Methodological considerations and test design

Papadelis G.1, Pastiadis K.1, Kiratzidisb T.2

1. Department of Music Studies, School of Fine Arts, Aristotle University of Thessaloniki, Greece,
2. Cochlear & Acoustic Implants – Veria Medical Centre, Veria, Greece

Psychological approaches to musical development in pre-school and primary school children with normal hearing have revealed the areas of primary interest for research in the domain, including singing, aesthetic appreciation, rhythmic and melodic development, and the acquisition of harmony and tonality. Recent advances of hearing implant technology and research have led to enhanced music perception by the CI patient population thus providing the opportunity for an improved musical enjoyment. Most important, in the cases of children who grow up with CIs, enhanced perception of music is a major concern, because early engagement to music-related activities or appropriately structured music training, besides the apparent influence on child's musical development, is likely to affect positively sub-skills related to language and literacy development, as well. Aims The lack of a broadly adopted, systematic screening of strengths and weaknesses of music perception and appreciation in children CI recipients is more than evident, since it is frequently reported in the literature that determination of the musical activities which are most satisfying to them are usually based on a trial and error procedure. The aim of the present work is to describe a test-design framework within which research-informed decisions can be taken regarding the particular behaviours and response methodologies to be assessed by music tests for CI children populations. Methodological approach The proposed framework integrates methodologies awn from a) Traditional psychoacoustical testing procedures, b) widely known musical aptitude tests, c) our prior research on the assessment of music skills in children with various types of learning disabilities, especially dyslexia, and d) computer-based assessment of music skills. Illustrative prototypical testing environments for the assessment of fundamental aspects of musical rhythm and pitch perception are also presented.