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• 計畫中文名稱	建立與腦功能影像相關的學齡兒童中樞聽覺處理功能障礙 篩檢評估工具		
• 計畫英文名稱	Development of an Screening and Evaluation Battery That Correlates to Brain Neuroimaging for Central Auditory Processing Disorder in School-Age Children		
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• 英文摘要	The central auditory processing disorder (CAPD) has been defined as a deficit in the auditory mechanisms that underline sound localization and lateralization, discrimination, temporal processing, and performance under conditions of degraded and competing acoustic signals. Generally, most languages are learned by listening. In order to learn, individuals must be able to attend to, listen to, and separate important speech signals from all the other noises in the environment. When auditory skills are weak, they may experience auditory overload. This makes learning more difficult without special assistance. In spite of normal hearing sensitivity, individuals with CAPD often exhibit communicative complaints, which include poor verbal cognitive performance, receptive language delay or disorders, and difficulty in maintaining attention to information presented auditorily. Unfortunately, the central auditory processing disorder is rare to be applied as a diagnosis in Taiwan. This study used modern non-invasive brain imaging technique, functional magnetic resonance imaging (fMRI) to reveal functional alterations occurring in cortical areas that have been associated with auditory and speech processing. Ten normal young adults and one CAPD child were recruited as our subjects. The results of fMRI demostrated that there existed pervading differences between the two groups. The differences can not be explained by age-related brain plasticity. We also confirmed that different items in a a test battery did evoke different brain structures. However, because of the limited children sample, we were unable to deduce the key difference between normal and CAPD children and to select the best screen test items. In spite of the aforementioned limitations, this study supports the feasibility of using fMRI to validate and facilitate the		

development of efficient test batteries for screening and evaluating central auditory processing disorders.