

Symposium: Supporting learning and development in children with Down syndrome

The care and management of the newborn with Down syndrome (DS)

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Aim: To describe an approach to the care and management of the newborn with DS within a multi-system, dynamic, interactive ecosystem where well-timed and efficacious interventions support both short- and longer-term developmental outcomes. **Method:** Infants with DS receive multidisciplinary early intervention where disability is considered within the parameters of the impact of DS on the infant's biobehavioural responses, maternal and family behaviours, and the care-giving environment, and the need for professional support. **Results:** Clinical evidence suggests that an early, holistic, biobehavioural perspective on the emerging sensory systems of the infant, and attention to the contextual issues of the caregiving environment, provide developmental support for the infant and facilitate maternal competencies. **Conclusions:** The individual complexity of each infant with DS reflects a diverse range of genetic, cultural and social heritage. The role of the professional in providing early support for the family whilst also seeking to facilitate necessary caregiving behaviours to establish the foundations of biobehavioural competence is crucial, where each of the infant's sensory systems is compromised/ disordered in its predictability and reliability.

Mother-child and father-child interactions with Down syndrome (DS) children: A comparative study

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Aim: The aims were to examine mothers' and fathers' modes of interactions in problem solving situations with DS children and whether they differed in their involvement strategies. **Method:** 34 children (17 DS, 17 typically developing (TD), aged 26–61 months and matched by developmental age) were observed in problem-solving situations with their mothers/fathers. Interactions were segmented in episodes, categorized on an ordinal scale according to children's involvement. The scale includes 8 categories, ranging from no constructive activity by the child, through children's increasing participation, to autonomous activity. **Results:** With mothers, DS children began their involvement at a significantly lower level than TD, mothers exerting higher control. Most interactions in DS and TD groups were in intermediate categories. Fathers followed similar strategies, independently of children's developmental conditions, with different outcomes in children's autonomy. DS children obtained higher levels of involvement with mothers. **Conclusions:** Mothers and fathers do not interact typically with DS children. However, they use different involvement strategies: DS mothers are more sensitive than fathers to children's difficulties. Mothers are more directive, but their directiveness is contingent on DS children's difficulties and allows them higher levels of task involvement.

The effects of peer collaboration on problem-solving in children with intellectual disabilities (ID)

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Aim: To examine whether the experience of collaborative problem-solving enhances individual task performance in children with ID. **Method:** Garton & Pratt's (2001) work, in which 4- & 7-year-old typically developing (TD) children worked independently on a block sorting task, collaboratively on a 4- and 6-room furniture sorting task and were then re-tested on the individual block task, was extended to 28 TD children, 14 children with Down syndrome (DS) and 42 non-specific ID children in the same developmental age range. Three sets of lower/higher child pairs were formed on the basis of chronological age and initial block-sorting scores: lower/higher TD, lower/higher NSID, lower DS/higher NSID. Standardised measures of cognition, language and adaptive behaviour were incorporated to allow more direct examination of factors influencing collaborative outcomes. **Results:** Garton and Pratt found collaborative experience facilitated problem-solving in the lower ability TD partner only. Findings here suggest that performance in both lower and higher ability NSID partners may improve although lower ability DS partners may show lesser gains. **Conclusions:** Collaborative experience may be cognitively beneficial in NSID dyads but children with DS may gain less than their NSID counterparts. Explanations for these outcomes are being explored through analysis of video records.

Symposium: Linguistics

Disturbed use of context to detect semantic incongruity in Asperger syndrome

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Aim: To establish whether people with Asperger syndrome are able to make use of context to detect the presence or absence of semantic incongruity. **Method:** Participants able to read were asked to look at sentences, some of which ended with a semantically congruent word and some of which ended in a semantically incongruent word. Whilst reading these sentences they underwent EEG recording from which was extracted the N 400 event-related potential, an index of perceived semantic incongruity. Eight people with Asperger syndrome were compared to seven people matched for intellectual level but without an autistic spectrum disorder. **Results:** Whilst both groups appropriately demonstrated N400 potentials to semantically incongruent stimuli, the participants with Asperger syndrome inappropriately demonstrated N400 potentials to the congruent stimuli. **Conclusions:** The participants with Asperger syndrome were unable to use the context within the sentence to predict the content of the final word of the sentence. They treated all stimuli as incongruent, whether or not they were in fact so. This finding may be considered as supporting the model of weak central coherence as a core cognitive deficit in people with autistic spectrum disorder

Pragmatic deficits in children with autism spectrum disorders

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Aim: This paper reports the development of an objective procedure for the assessment of verbal and non-verbal communicative competencies in children and its use in a comparative pilot study. The aim was to compare pragmatic skills in normal children and those with Asperger Disorder. **Method:** The sample consisted of twenty-one normal primary school aged children and 7 children of similar age with Asperger Disorder. A theoretical model of communicative competence was developed and a set of standardised activities involving play and discussion around toys and pictures constructed which were based on a portion of the model. **Results:** The normal sample showed age-related development in pragmatic skills on the series of activities and the sample of children with Asperger Disorder displayed deficits in several areas including appropriate maintenance and change of topic during discussion and capacity to initiate and respond appropriately in a play-based conversational context. **Conclusions:** The test procedure showed promise as a means of assessing normal or delayed development in pragmatic skills and as potentially useful in children or adults with a wide range of developmental disabilities as well as psychiatric and neurological disorders.

Bilingualism in children with Down syndrome

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Aim: While many studies have examined bilingual development in typically developing (TD) children, there are almost no data on bilingualism in children with intellectual disabilities (ID). Children with Down syndrome (DS) have both ID and language learning difficulties. Both may affect their ability to become bilingual. **Method:** The English language abilities of four groups of MA-matched children in the early stages of language development were compared: monolingual children with DS (MDS) or typical development (MTD) and bilingual children with DS (BDS) or typical development (BTD). The second-language skills of the two bilingual groups were also compared. All bilingual children had had consistent, intensive, and on-going exposure to two languages and lived in a bilingual setting: Montreal, Quebec. English was at least as well developed as the second language for these children. The monolingual children were exposed to English at home and lived in an English setting: Halifax, Nova Scotia. **Results and Conclusions:** Analyses of English data revealed that the bilingual children with DS performed at least as well as their monolingual counterparts on all language measures, although the typical language profile in DS remained relative to TD controls. Analyses of second language ability revealed individual variability but functional acquisition in most BDS children.