



## Brain Injury Rehabilitation Program

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### NEUROPSYCHOLOGICAL REVIEW

**NAME:** Tamsin COLLEY  
**D.O.B:** 10/9/2002  
**MRN:** 1494960  
**DATE OF ASSESSMENT:** 25/5/2007  
**AGE AT ASSESSMENT:** 4 years 8 month

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Tamsin, a left-handed 4 year 8 month old girl who was diagnosed with a brain tumour in March 2004, was seen for a neuropsychological review on the 25<sup>th</sup> of May 2007 to monitor her ongoing cognitive development prior to her starting school in 2008.

#### RELEVANT BACKGROUND

Tamsin's medical history has been detailed in previous speech pathology and neuropsychology reports. In brief, Tamsin was noted to have undergone surgical resection of a posterior fossa pilocytic astrocytoma (brain tumour) in March 2004 at 18 months of age. Subsequent issues included gross and fine motor difficulties, a right fourth nerve palsy and a speech disturbance.

Tamsin has received regular speech therapy since early 2005 to assist with major difficulties in expression due to an ataxic dysarthria. This was reported to manifest as a poor coordination of the lips, tongue and voice to produce speech sounds. On recent evaluation in March 2007 Tamsin was reported to display age appropriate receptive and expressive language skills. Tamsin's speech in conversation was noted to have improved but was again characterised by a slowed rate of speech, an impaired stress and rhythm pattern and an inaccurate articulation of some speech sounds. This impacted on intelligibility. A number of recommendations were proposed to assist with these speech difficulties in the classroom environment.

Regular occupational therapy has also been provided at pre-school to assist with maximising Tamsin's functional potential with home and pre-school based activities. On most recent report in April 2007, Tamsin was noted to continue to display significantly impaired fine and gross motor skills as a result of her ataxic movement disorder with particularly difficulties documented in her ability to perform all fine and gross controlled movements at speed. Tamsin's daily living skills were rated at near age appropriate levels with the exception of toileting, which was described as an ongoing area of challenge.

A general developmental assessment was previously undertaken when Tamsin was 2 years 7 months of age. This revealed evidence of a specific and significant delay in gross motor development. A speech motor movement disorder was also noted that affected articulation and impacted on intelligibility. In contrast other developmental skills, such as a single word vocabulary, understanding of verbal concepts, fine motor manipulation and pencil skills were age appropriate. Early cognitive based skills, including practical reasoning and performance-based abilities, were well developed.

## **CURRENT ASSESSMENT**

Tamsin currently attends POW place pre-school for three days a week and has access to a full-time carer to assist with her physical needs. She is due to begin school in 2008 at Maroubra Junction Public School.

### Interview

On current interview, Cathie indicated that she has been pleased with the progress Tamsin has displayed over the past few years and noted continued improvement with therapy across multiple areas. Nevertheless ongoing motor difficulties were described that affect gross and fine motor skills and speech. With support Tamsin was considered to keep up with many of the activities that have a fine motor component in the preschool environment, although Cathie noted that Tamsin has to work hard to do this. Her speech although improving was also thought to be difficult to understand at times and particularly to listeners that do not know Tamsin well. This was considered to impact on Tamsin's ability to interact with the other children in her pre-school class and Cathie indicated that Tamsin has been described as more of a passive participant in social interactions with peers. Tamsin was reported to have developed some good early academic skills, and was noted to name colours and shapes and to recognise numbers, her name and possibly a couple of words. She was also reported to have started to rote count and can write her name although does this backwards at the moment. Attentional skills were thought to be well developed for age.

Executive functions (which are a collection of skills that are responsible for guiding, directing and managing cognitive, behavioural and emotional functions) were rated by Cathie on a formal, standardised questionnaire (BRIEF-preschool). Overall responses were within the average range for age across domains, including inhibitory self-control, early working memory and organisation.

Adaptive skills were also rated by Cathie on the ABAS-II. Overall, abilities were age appropriate with Tamsin's performance generally rated at this level across conceptual (communication, pre-academic) and social domains. In contrast her practical skills were a little lower, falling within the low average range. This resulted from an isolated reduction within the self-help domain as a consequence of her continued need of assistance with self-help tasks due to her physical limitations. Other areas within this domain, such as her understanding of health and safety issues and independence in managing within the home environment, were noted to be age appropriate.

### Presentation

Tamsin presented as a bright, engaging and interactive young girl who was a delight to assess. She responded to general conversational questions appropriately and provided descriptive answers to verbal test questions. On a couple of occasions it was difficult to understand Tamsin's output, although she was generally willing to repeat her answers when asked. Her rate of response to verbal questions also appeared to be a little extended. Tamsin was, however, noted to display a remarkable level of attention and concentration, remaining focussed and attentive throughout the lengthy testing session. Her task persistence was also well developed, and she was observed to continue working for an extended amount of time on even the more challenging items.

### Assessment

On formal testing, Tamsin displayed evidence of an average to high average level of general intellectual functioning, with her performance consistently rated at this level across cognitive domains. These results are reported below in more detail.

Tamsin's verbal reasoning skills, including her ability to provide word meanings and identify a word after being given a definition, were rated within the average to high average range for age. Similarly her store of general knowledge was age appropriate. Verbal comprehension skills were not formally examined, however, qualitatively Tamsin was noted to follow a range of task instructions and directions without difficulty.

Nonverbal/visual reasoning skills were also within the average to high average range. Specifically, visual analysis and abstraction skills were rated at this level across tasks in which Tamsin was required to recognise the sequence within an abstract visual array and the association between pictured objects. Her visuoconstructional skills, required to build a model according to a picture, were solidly average as was her ability to accurately copy simple shapes.

Simple processing speed, assessed on a task in which Tamsin was required to quickly scan and respond to visual material, was solidly age appropriate. Her ability to quickly complete a simple motor response over a short duration was also within age expectations.

Basic auditory attention span (which refers to the amount of spoken verbal material that can be held in mind at one time) was within the high average range for age.

Focussed visual attention skills were within the average range for age. Specifically, Tamsin was noted to be able to focus on visual materials to accurately identify salient elements whilst ignoring distracting materials.

New learning and memory skills were within the average range for age as compared to a group of 5 year old children. Specifically, Tamsin's ability to process and encode new auditory verbal material presented in a structured, contextual format (such as in the form of a short prose story) was in keeping with the average performance of a 5 year old child, immediately and after a time delay. This indicates intact processing, encoding and retrieval skills.

## **SUMMARY**

Tamsin is a left-handed 4 year 8 month old girl who underwent surgical resection of a posterior fossa pilocytic astrocytoma (brain tumour) in March 2004 at 18 months of age. Subsequent issues have included ataxia which affects gross and fine motor skills, a right fourth nerve palsy and a speech disturbance. Tamsin has received ongoing physiotherapy, occupational therapy and speech pathology since her discharge from hospital and is reported to have made steady gains in all targeted areas.

On current neuropsychological assessment, Tamsin presented as an engaging and interactive young girl with well developed attentional skills and age appropriate intellectual and cognitive abilities.

Specifically, Tamsin's intellectual functions were rated within the average to high average range across verbal and nonverbal intellectual domains. Similarly auditory attention span, processing speed and visual attention were found to be age appropriate. New learning and memory skills were intact as were early executive processes as rated on a formal questionnaire.

## **RECOMMENDATIONS**

Overall, Tamsin's current presentation on neuropsychological assessment is pleasing and indicates that despite suffering a significant illness at an early age, her cognitive skills are developing well. Furthermore, Tamsin's performance indicates that from a cognitive and learning perspective she should cope well with the early academic concepts that will be presented during the forthcoming Kindergarten year.

Tamsin will, however, require support to compensate for her physical difficulties, particularly given the high involvement of motor skills in early learning activities. Consequently it will be necessary to provide support and also allow her to have extra time to complete fine motor activities, including copying, drawing, cutting and pasting. It may also be necessary to reduce the amount of work she is expected to complete within these types of activities to ensure that she is able to keep up with her peers and is not missing the underlying learning concept that usually accompanies these tasks. Modifications of gross motor activities would also be required throughout schooling. Funding to provide additional assistance with motor activities would be supported and would be accessible under the physical disability criterion within the Public Education System.

It will also be important to allow Tamsin to have additional time to complete spoken responses within the classroom in addition with opportunities to repeat parts of responses that may have been unintelligible. Encouragement to participate in group discussions would also be important.

Tamsin will continue to benefit from ongoing physiotherapy, occupational therapy and speech therapy. It will also be important for recommendations from these therapists to be incorporated into Tamsin's schooling routine where possible.

Given Tamsin's strong performance on current assessment, a formal neuropsychological review was not arranged at this time. If issues were, however, to arise in the future, we would be happy to see Tamsin again. This could be organised either through Dr Johnson, Dr Teo or Liz Bland. Alternatively I can be contacted directly on 9382 0246 to arrange an appointment.



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cc: Peter Colley and Cathie Sherrington,  
Dr Heather Johnston, Paediatric Neurologist, SCH  
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Medical Records; BIRP File; Psychology File