

Oral Presentation

## Upper limb function in children with spina bifida

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### Background

It is axiomatic that children with spina bifida have lower limb dysfunction because of disruption of the nerves supplying the legs. But the cause of any upper limb dysfunction is more difficult to determine. The purpose of this study is to examine upper limb function in a group of spina bifida patients, and to document factors which might have contributed.

### Materials and Methods

The sample patients were identified from the patients born with spina bifida in the ten year period 1987–96, ensuring that the children would be at least 6 years old. The skin and sensory levels of the lesion were documented as well as the history of hydrocephalus and shunt revision. Upper limb function was determined using measures of coarse (putting pellets in a cup and pegs in a pegboard) and fine (repetitive finger movements, repeated pronation and supination and 20 Claps) movements.

### Results

There were 24 children for whom a full data set was obtained. In 30% the upper limit of the lesion was thoracic, 60% had a lumbar lesion and 10% a sacral lesion. The incidence of hydrocephalus was 80%, and all but 4 of the shunts required revision in the first year. All the children were found to perform well on the coarse movement tests, with no significant difference from the norm. However with fine movement testing using the tests described above, the children performed significantly poorer than the norm in two of the three tests. One anecdotal finding was that almost 50% of the children are left handed. There appeared to be no correlation with age or level of spina bifida lesion.

### Conclusion

Children with spina bifida have significant dysfunction in the performance of fine motor tasks than normal children. This finding is present in children aged from 6 to 15 years, suggesting that the problem is present from a very young age.