

Poster Presentation

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## Spinal fusion in children with spina bifida: influence on ambulation level and functional abilities

M Schoenmakers\*, R Gooskens, J Pruijs and P Helders

Address: Wilhelmina Children's Hospital, University Medical Center, Utrecht, Utrecht, The Netherlands

Email: M.Schoenmakers\* - M.A.G.C.Schoenmakers@wkz.azu.nl

\* Corresponding author

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### Background and aims

To determine the effects of spinal fusion on ambulation level and functional abilities in children with spina bifida.

### Materials and Methods

Ten children (3 males and 7 females) with myelomeningocele were prospectively followed. Their mean age at operation was 9.3 years (standard deviation: 2.4). Spinal curvature was measured according to Cobb. Pelvic obliquity and trunk decompensation were measured as well. The ambulation level was scored according to Hoffer and functional abilities, as well as the amount of caregiver assistance were documented using the 'Pediatric Evaluation of Disability Inventory'. All patients were assessed before surgery, and three times after surgery, with a total follow-up duration of 18 months after surgery.

### Results

After spinal fusion, magnitude of primary curvature decreased significantly ( $P = 0.002$ ). Pelvic obliquity and trunk decompensation did not change. The ambulation level showed a significant regression ( $P = 0.03$ ). Functional abilities and amount of caregiver assistance concerning self-care and mobility showed a non-significant trend to deteriorate within the first six months after surgery, but recovered afterwards. From pre- to 18 months after surgery, functional skills on self-care showed borderline improvement ( $P = 0.07$ ), whereas mobility did not ( $P = 0.2$ ). Mean scores on caregiver assistance improved significantly on self-care ( $P = 0.03$ ), and borderline on mobility ( $P = 0.06$ ).

### Conclusions

Within the first six months after spinal fusion, more caregiver assistance is needed in self-care and mobility. It takes about 12 months to recover to pre-surgery level,

while small improvement is seen afterwards. After spinal fusion, ambulation often becomes difficult. These findings are important for health care professionals, in order to inform and prepare the patients and their parents properly for a planned spinal fusion.