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# PUBERTY IN CHILDREN WITH SHUNTED CONGENITAL HYDROCEPHALUS WITH AND WITHOUT MYELOMENINGOCELE

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### CONCLUSIONS

- All children with congenital shunted hydrocephalus, with or without MMC, are at high risk of developing E/PP
- In children without MMC the risk is comparable between the genders.
- In those with MMC the risk is most marked in girls
- The mechanism behind the later onset of puberty in boys with MMC should be further investigated

# OBJECTIVE

To study the influence of MMC and gender on timing of puberty in children with increased intracranial pressure perinatally.

# METHOD

All children with congenital hydrocephalus, born 1980 - 2002, treated with shunt and living in Uppsala county, were identified. The cohort included 35 children (16 girls). Eighteen children (8 girls) had MMC.

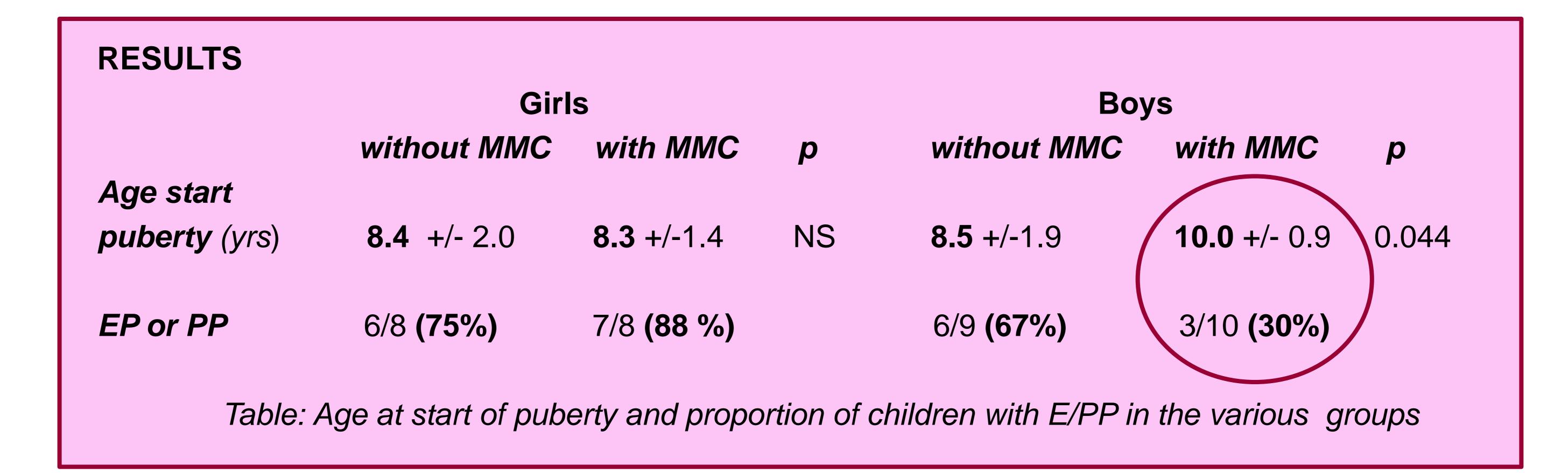
## BACKGROUND

Children with hydrocephalus and myelomeningocele (MMC) are at risk to develop early or precocious puberty (E/PP), which is strongly associated with increased intracranial pressure perinatally (1, 2).

It is also known that the occurrence of hydrocephalus without MMC is associated with risk of E/PP (3).

Health records were examined retrospectively.

E/PP was defined as pubertal signs appearing before 9:2 years for girls and 10:2 years for boys.



#### References

1.Proos LA, Dahl M, Ahlsten G, Tuvemo T, Gustafsson J. Increased perinatal intracranial pressure and prediction of early puberty in girls with myelomeningocele. Arch Dis Child. 1996 Jul;75(1):42-5. 2.Proos LA, Tuvemo T, Ahlsten G, Gustafsson J, Dahl M. Increased perinatal intracranial pressure and brainstem dysfunction predict early puberty in boys with myelomeningocele. Acta Paediatr. 2011 Oct; 100(10):1368-72. 3.Löppönen T, Saukkonen A-L, Serlo W, Tapanainen P, Ruokonen A, Knip M. Accelerated pubertal development in patients with shunted hydrocephalus. Arch Dis Child 1996;74:490-496. Correspondence to: Lemm.Proos@kbh.uu.se