

Ventriculoperitoneal shunt disconnection prevention

The simplest and safest way to prevent/eliminate the [shunt disconnection](#) is the use of a single/one-piece [ventriculoperitoneal shunt](#) system ¹⁾

Zahedi et al. demonstrate, for the first time, a correlation between [shunt catheters](#) that are less mechanically stiff and those that are less likely to disconnect from the valve when outstretched and are also less likely to tear when held at an angle from the valve outlet. The authors propose an intervention to the standard of care wherein less stiff catheters are trialed to reduce disconnection ²⁾.

The use of an extended length peritoneal shunt catheter may prevent shunt disconnection ³⁾.

If a connector must be used near the [clavicle](#), place it rostral to (above) the clavicle. ✖ Avoid placing it caudal on the clavicle because this increases the risk of disconnection.

A haircut that includes the use of clippers at the occipital region causes a rapid increase in the shearing strain at the shunt connector site that may further stretch the shunt and induce shunt disconnection. Nurses and physicians must address the need to prevent shunt dislodgement caused by haircuts with clippers in young, rapidly growing, male patients who require shunts. A two- or one-piece shunt may prevent this complication ⁴⁾.

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Aldrich EF, Harmann P. Disconnection as a cause of ventriculoperitoneal shunt malfunction in multicomponent shunt systems. *Pediatr Neurosurg*. 1990-1991;16(6):309-11; discussion 312. doi: 10.1159/000120549. PMID: 2134742.

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Zahedi S, Hudson M, Jin X, Garling RJ, Gluski J, Nowak C, Marupudi NI, Begeman P, Harris CA. Investigation of [ventriculoperitoneal shunt disconnection](#) for hydrocephalus treatment. *J Neurosurg Pediatr*. 2020 Nov 13:1-6. doi: 10.3171/2020.6.PEDS20454. Epub ahead of print. PMID: 33186903.

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Couldwell WT, LeMay DR, McComb JG. Experience with use of extended length peritoneal shunt catheters. *J Neurosurg* 1996; 85: 425-427.

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Kuo MF, Wang HS, Yang SH. Ventriculoperitoneal shunt dislodgement after a haircut with hair clippers in two shunted boys. *Childs Nerv Syst*. 2009 Nov;25(11):1491-3. doi: 10.1007/s00381-009-0898-3. Epub 2009 Apr 18. PubMed PMID: 19381647.

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Last update: **2024/06/07 02:51**

