

Cambridge Shunt Evaluation Laboratory

The Cambridge Shunt Evaluation Laboratory was established 1993.

Twenty-six models of valves have been tested long-term in the [shunt](#) laboratory according to the expanded International Organization for Standardization 7197 standard protocol. Results The majority of the valves had a nonphysiologically low hydrodynamic resistance (from 1.5 to 3 mm Hg/[ml/min]), which may result in overdrainage related to posture and during nocturnal cerebral vasogenic waves. A long distal catheter increases the resistance of these valves by 100%-200%. Drainage through valves without a siphon-preventing mechanism is very sensitive to body posture, which may result in grossly negative intracranial pressure. Siphon-preventing accessories offer a reasonable resistance to negative outlet pressure; however, accessories with membrane devices may be blocked by raised subcutaneous pressure. In adjustable valves, the settings may be changed by external magnetic fields of intensity above 40 mT (exceptions: [ProGAV](#), Polaris, and Certas). Most of the magnetically adjustable valves produce large distortions on MRI studies. Conclusions The behavior of a valve revealed during testing is of relevance to the surgeon and may not be adequately described in the manufacturer's product information. The results of shunt testing are helpful in many circumstances, such as the initial choice of shunt and the evaluation of the shunt when its dysfunction is suspected ¹⁾

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Chari A, Czosnyka M, Richards HK, Pickard JD, Czosnyka ZH. Hydrocephalus shunt technology: 20 years of experience from the Cambridge Shunt Evaluation Laboratory. J Neurosurg. 2014 Jan 3. [Epub ahead of print] PubMed PMID: 24405071.

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