The critical issue in shunt technology is the posture-dependent hydrostatic pressure change. Hydrocephalus shunts with gravitational units can overcome the posture-dependent effects of gravity, reduce complications of overdrainage and have shown positive results with good clinical outcomes and significant reductions of overdrainage events (1).

With gravitational valves the optimal pressure for both supine and upright position can be set.

Supine position:
Gravitational valve does not add to valve opening pressure

Upright position:
Gravitational valve increases valve opening pressure

Gravitational valves (GV) improve patient outcomes compared to differential pressure valves (DP) (1).

Symptom improvement >2 points on Kiefer-Scale.
GV 71%
DP 18%

Daily improvement rated good/very good on Black-Scale.
GV 62%
DP 25%

Value survival rates up to 90% at 12 months.

Patients with hydrocephalus benefit from early treatment with gravitational valves.

Overdrainage rate with conventional valves
43%
Overdrainage rate with gravitational valves
7%

Implanting a gravitational valve avoids one additional overdrainage complication in about every third patient.

Higher survival of gravitational valves after primary vs secondary implantation
22%