The posterior spinal veins (longitudinal venous sinuses) lie within the pia mater of the spinal cord. There are five longitudinal vessels on the posterior aspect of the spinal cord; located along the posterior median fissure of the spinal cord, along each of the postero-lateral fissures posterior to the dorsal nerve roots and located along each of the anterior —lateral fissures between the dorsal and ventral nerve roots.

Each posterior longitudinal venous sinus anastomoses freely with each other, the anterior veins of the spinal cord, and the cerebellar veins and cranial sinuses. The posterior spinal veins drain blood from the spinal cord into the internal vertebral venous plexuses and subsequently the intervertebral veins.