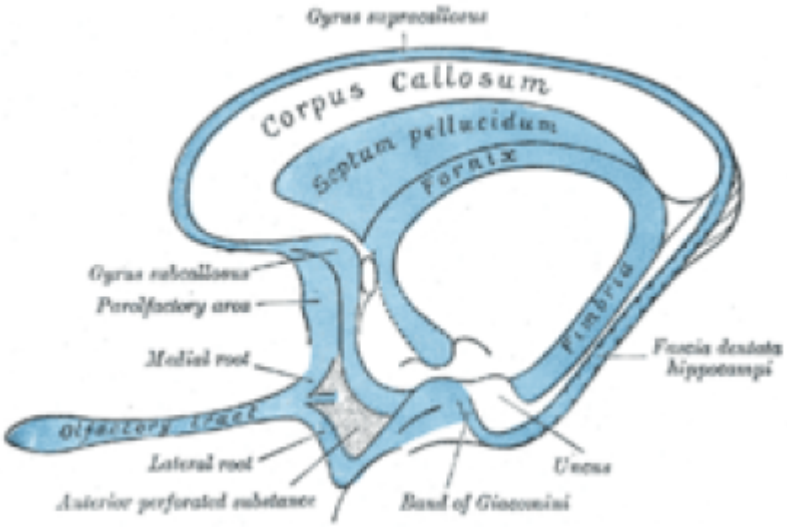
Septum pellucidum



(also called the septum Pellucidum), is a thin, triangular, vertical membrane separating the anterior horns of the left and right lateral ventricles of the brain.

It runs as a sheet from the corpus callosum down to the fornix.

The septum pellucidum consists of two laminae of both white and gray matter. During fetal development, there is a space between the two laminae called the cavum septum pellucidum, which disappears during infancy in most individuals.

Liss and Mervis [1] described three variations of the septum pellucidum. The first variation (50%) is the single midline membrane with an ependymal lining on each ventricular surface. The second variation (25%) consists of two separate but closely apposed leaves that delineate a potential space. The third variation (25%) is the cavum septum pellucidum in which the leaves of the septum are visibly separated by a space of variable size. Congenital perforations of the septum pellucidum may be present in any of these variations. These perforations characteristically have smooth margins and may be single or multiple [2].

The septum pellucidum and the subjacent septum verum form the medial wall of the frontal horn of the lateral ventricle. Both structures contain nerve fibers that were organized in 3 groups: 1) the precommissural fibers of the fornix; 2) the inferior fascicle; and 3) the superior fascicle of the septum pellucidum. The area directly rostral to the postcommissural column of the fornix consisted of macroscopically identifiable gray matter corresponding to the septal nuclei. The histological examinations validated the findings of the authors' fiber dissections.

The nerve elements of the septum pellucidum as well as the subjacent septum verum were identified with fiber dissection and verified with histology for the first time. The septal nuclei located just anterior to the fornix and the precommissural fibers of the fornix should be preserved during ESP. Considering the venous anatomy as well as the neural architecture of the septum pellucidum, the fenestration should ideally be placed above the superior edge of the fornix and preferably dorsal to the interventricular foramen [3].

The septum pellucidum is the anatomic site of origin of a spectrum of uncommon neuroepithelial tumors that include central neurocytoma, subependymoma, and low-grade glioneuronal tumors.

1)
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2)
VanWagenen WP, Aird RB: Dilatations of the cavity of the septum pellucidum and cavum vergae. Report of cases. Am J Cancer 20: 539–557, 1934
3)
Barany L, Meszaros C, Ganslandt O, Buchfelder M, Kurucz P. Neural and vascular architecture of the septum pellucidum: an anatomical study and considerations for safe endoscopic septum pellucidotomy. J Neurosurg. 2019 Aug 2:1-10. doi: 10.3171/2019.5.JNS19754. [Epub ahead of print] PubMed PMID: 31374555.