Evans index

The Evans index is useful as a marker of ventricular volume and thus has been proposed as a helpful biomarker in the diagnosis of normal pressure hydrocephalus (NPH)

Unfortunately it is a very rough marker of ventriculomegaly, and varies greatly depending on the location and angle of the slice.

As such Evans' index has little role to play in day-to-day reporting.

Seven of 12 idiopathic normal pressure hydrocephalus biomarkers including the frequently used Evans Index and callosal angle showed statistically significant deviations when measured on sections whose angulations differed or did not comply with the proper section definition published in the original literature. Strict adherence to the methodology of idiopathic normal pressure hydrocephalus biomarker assessment is, therefore, essential to avoid an incorrect diagnosis. Increased radiologic and clinical attention should be paid to the biomarkers showing low angulation-related variability yet high specificity for idiopathic normal pressure hydrocephalus-related morphologic changes such as the z-Evans Index, frontal horn diameter, or disproportionately enlarged subarachnoid space (DESH) hydrocephalus [1].

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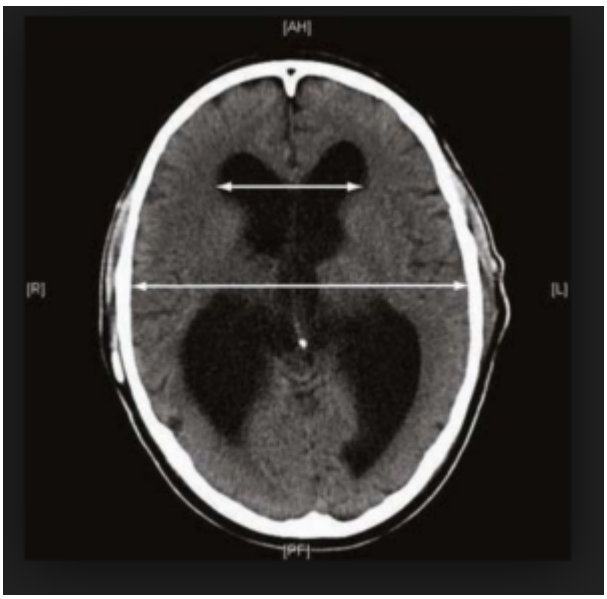
see also Callosal angle, DESH, Cingulate sulcus sign.



Evans index, which was introduced by William A. Evans in 1942 [2], is a standard.

The Evans index is the ratio of maximum width of the frontal horns of the lateral ventricles and maximal internal diameter of skull at the same level employed in axial CT and MRI images. This ratio varies with the age and sex. However, values of the Evans index can significantly vary depending on the level of the brain CT scan image

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Ng SE, Low AM, Tang KK et-al. Value of quantitative MRI biomarkers (Evans' index, aqueductal flow rate, and apparent diffusion coefficient) in idiopathic normal pressure hydrocephalus. J Magn Reson Imaging. 2009;30 (4): 708-15. doi:10.1002/jmri.21865

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1)
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2)
Evans WA (1942) An encephalographic ratio for estimating ventricular enlargement and cerebral atrophy. Arch Neurol Psychiatr 47:931. https://doi.org/10.1001/archneurpsyc.1942.02290060069004