Study	Year	Link	Storage conditions	Storage length	Storage effect	Notes	Relevant text
Van Gieson 1889	1889	https://collections.r	Ethanol with higher concentration than 40%	1-2 years	If tissue not is hardened well, then minute cavities and vacuoles appear in the brain tissue microscopically and it does not stain well	Brains are first fixed in Müller's fluid, a dichromate solution	"If specimens are not thoroughly hardened in Müller's fluid, the subsequent permanent preservation in strong alcohol does them considerable injury. The alcohol slowly dissolves out the chrome salts and changes the myelin. In the course of a year or two cholesterin crystals form in the alcohol, and minute cavities and vacuoles appear in the specimens and they do not stain well. If for any reason it is necessary to examine specimens before they are thoroughly hardened, it is best to keep the material for permanent preservation on the shelves in water containing camphor, or dilute, thirty to forty percent., solutions of alcohol. In the laboratory even thoroughly hardened material is not kept permanently in strong alcohol. Seventy or eighty per cent is used, and in certain cases water. Well hardened material kept in water has a tendency to become brittle in the course of years. The structure of the neuroglia never shows so well, and carmine staining is never so successful in sections of material which has been placed in alcohol as in sections cut from specimens while in Müller's fluid, or kept in water slightly tinged with Müller's fluid."
Van Gieson 1889	1889	https://collections.r	Ethanol	Years	Decreased structural imaging of neuroglia and decreased carmine staining efficacy	Brains are first fixed in Müller's fluid, a dichromate solution	
Helms 2014	2014	https://archive.ism	Seems to have been ethanol fixed and stored in the 1850s, then switched to formalin in 1990s	150 years	Sub-millimeter tubular cavities noted on neuroimaging of the white matter, but not grey matter	Also see Schweizer 2014a and Schweizer 2014b, but those are subsumed by this publication, per our review protocol, because it has more data.	"White matter exhibited sub-millimeter tubular cavities (not seen in bovine brain) leading to slower T1 relaxation than in cortex" ... "In all brains, high-resolution multi-parameter mapping revealed sub-millimeter tubular cavities in white matter (WM) (shown on the R1-map in Fig. 1), which strongly contributed to WM hypointensity on T1-w MRI. In contrast, the cortex appeared quite homogeneous."
Rouleau 2016	2016	https://pubmed.ncb	Ethanol–formalin–acetic acid	More than 25 years	Remarkable integrity and visible cells. There may be increased background staining, although this seems to be primarily attributed to the PMI	Stored with each of ethanol, formalin, and acetic acid	"Examples of the integrity of the human brain tissue that had been maintained in EFA for more than 25 years are shown in Fig. 1. Small, approximately 2-cm3 (2 g) cubic sections had been sampled from the cortices or hippocampal formations of various specimens. All sections were stained with Toluidine blue O. The presence of somas in the temporal cortices and hippocampus was clearly evident. Even the nuclei of glial cells were clearly discernable. Although the sections did not display the sharp acuity typical of rat brains that had been removed and placed in EFA within about 4 to 5 min, the human sections indicated remarkable integrity."