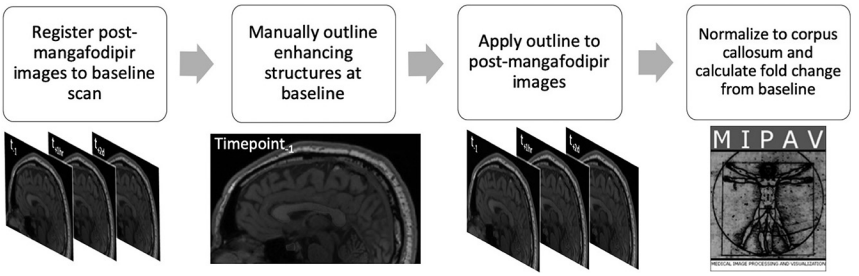
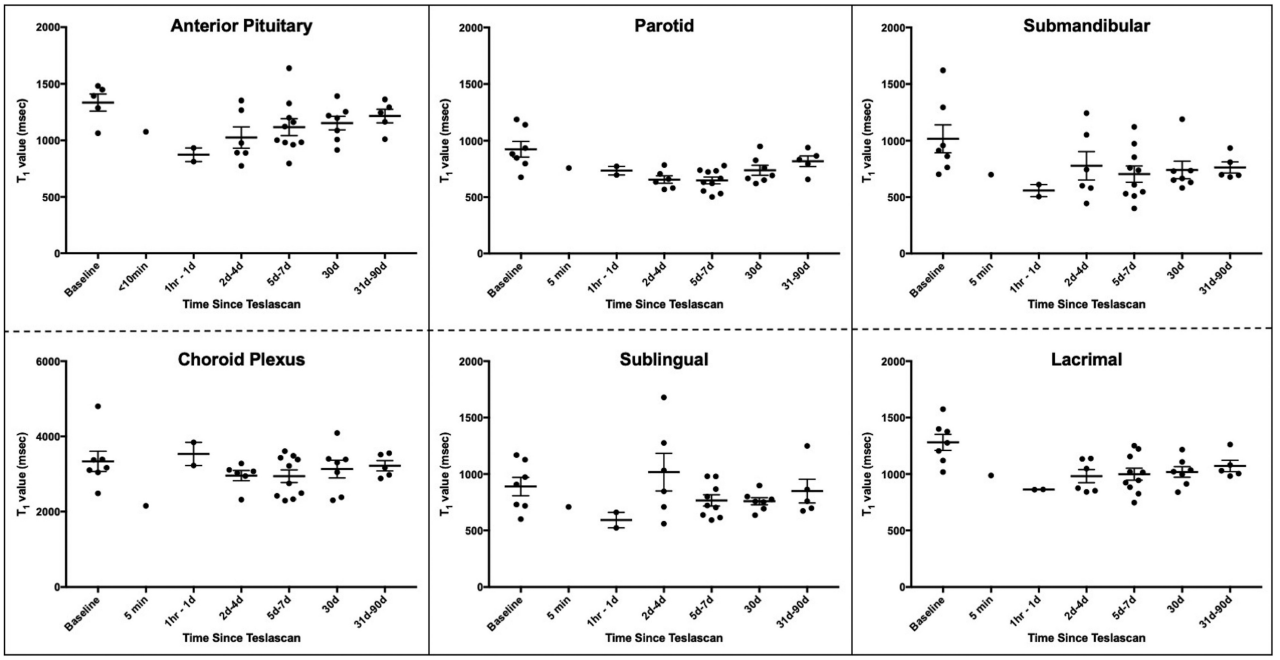
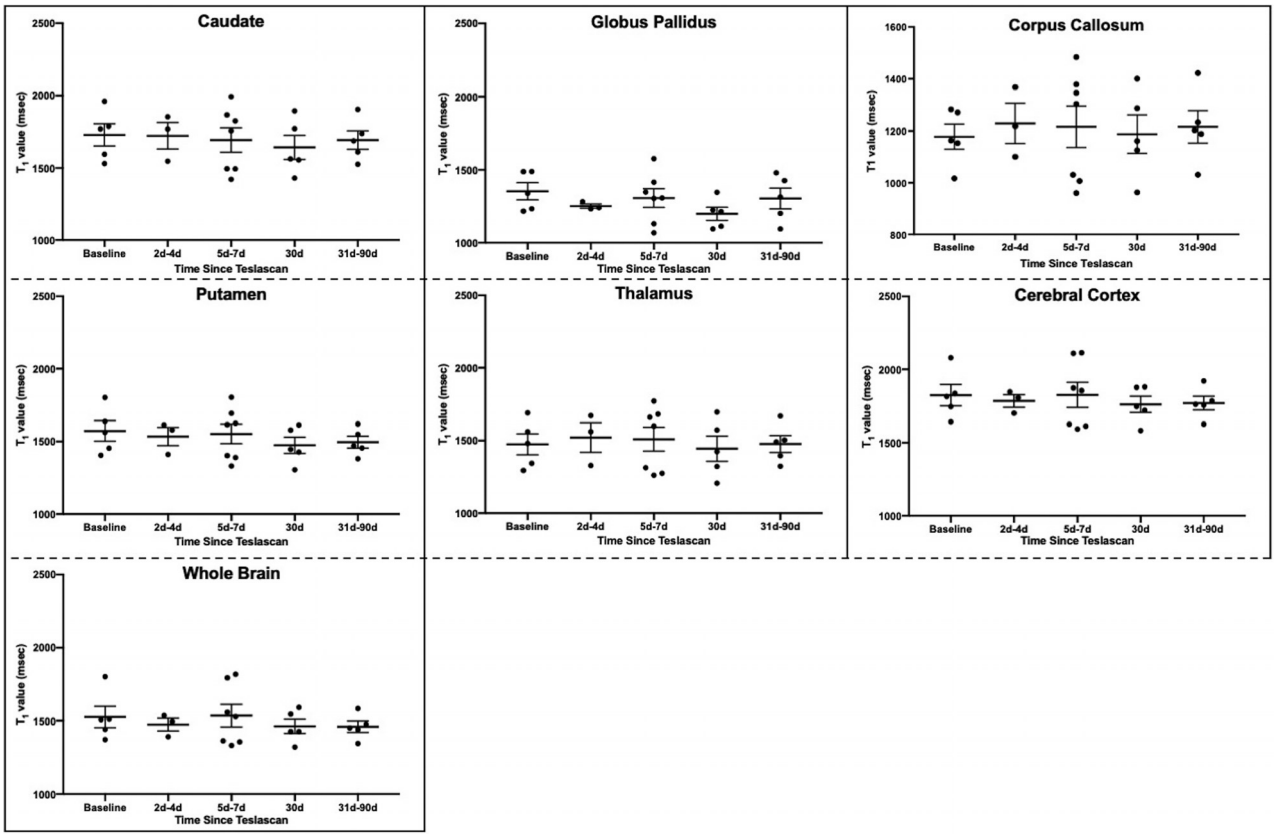


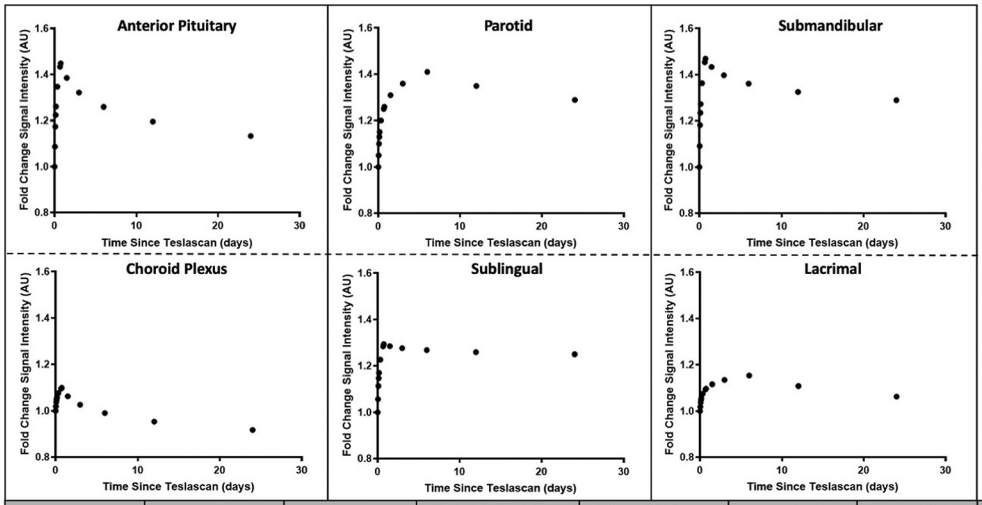
ON-LINE FIG 1. Summary of image analysis.



ON-LINE FIG 2. Manganese decreases T1 values in intracranial and extracranial structures**.** Median T1 values ($n = 7$) were obtained at various time intervals before and after mangafodipir administration. Volumes of interest used previously were applied to quantitative T1 maps generated using MIPAV. The lacrimal, parotid, and submandibular structures showed statistically significant T1 shortening. Each *dot* represents a scan at a specified time point. *Error bars* indicate standard error of the mean.



ON-LINE FIG 3. T1 values do not change significantly in basal ganglia structures and the corpus callosum after mangafodipir infusion**.** Median T1 values ($n = 5$) were obtained at various time intervals before and after mangafodipir administration. T1-weighted images were segmented using FreeSurfer, the T1 map was overlaid on the segmentation, and median values from each region were calculated. None of the structures showed statistically significant changes in T1 values. Each *dot* represents a scan at a specified time point. *Error bars* show ±1 standard error of the mean.



			Anterior Pituitary	Choroid Plexus	Lacrimal	Parotid	Sublingual	Submandibular
Log-transformed rate	Original data	***knot***	***18hr***	***18hr***	***18hr***	***linear***	***18hr***	***18hr***
		Uptake	0.142*	0.043*	0.068*	0.024	0.057*	0.111*
		Wash-out	-0.108*	-0.053*	-0.039		0.002	-0.036
	Bootstrap data	***knot***	***18hr***	***18hr***	***18hr***	***144hr***	***144hr***	***144hr***
		Uptake	0.126*	0.028*	0.066*	0.124*	0.073*	0.071*
		Wash-out	-0.091*	-0.052*	-0.041*	-0.035*	-0.088*	-0.112*
Bootstrap Data transformed to linear scale	Enhancement change per doubling of time	***knot***	***18hr***	***18hr***	***18hr***	***144hr***	***144hr***	***18hr***
		Uptake	0.087*	0.019*	0.019*	0.050*	0.057*	0.091*
		Wash-out	-0.063*	-0.036*	-0.045*	-0.060*	-0.009*	-0.036*

ON-LINE FIG 4. Rate of manganese enhancement and resolution within various intracranial and extracranial structures. *Upper row*, Enhancement dynamics of various structures shown in the logarithmic time scale. *Lower row*, Natural logarithm scaled time was used in linear piecewise modeling, which was applied to original and bootstrapped ($n = 500$) datasets to estimate rates of uptake and efflux. Knots were selected with lowest Akaike information criterion and rates (slopes) were estimated before (uptake) and after (washout) the knot. The *asterisk* indicates $P < .05$.