Re: follow up sub cortex vs cortex

From: **Patrick Lyden** | plyden@usc.edu Monday, May 17, 7:41 PM

To: **Ryan Cabeen** | Ryan.Cabeen@loni.usc.edu

Ryan,

Any luck parcellating the striatum from cortex? We have fascinating divergence in the direction of forced turning.

From: **Ryan Cabeen** | Ryan.Cabeen@loni.usc.edu Tuesday, May 18, 4:30 PM

To: **Patrick Lyden** | plyden@usc.edu

Yes, working on it this week, hopefully should soon have some imaging metrics to compare with those outcomes!

Ryan P. Cabeen, PhD
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From: **Patrick Lyden** | plyden@usc.edu Tuesday, May 18, 5:52 PM

To: **Ryan Cabeen** | Ryan.Cabeen@loni.usc.edu

Thanks. Keep me posted

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From: **Ryan Cabeen** | ryan.cabeen@loni.usc.edu Wednesday, May 26, 9:33 AM

To: **Patrick Lyden** | plyden@usc.edu

Hi Pat,

Just wanted to share an update on this — I just finished a first pass at measuring the extent of lesion in cortex vs. striatum. Attached please find a data table and several plots showing the distribution of the scores per site.

The general procedure was to measure the overlap of the lesion with the expected location of striatum and cortex, as defined in an atlas. There are two types of measures in the data table, one is the raw volume of lesion portioned into striatum and cortex, and the other is the fraction of the total lesion in each of those region. I figured the fraction might be interesting because there were systematic differences in total lesion volume between sites, and the fraction might factor those out to some degree? The atlas I used also included hippocampus and thalamus, so I went ahead and computed the lesion extent in those as well (for quality control purposes, as well as curiosity).

I did some basic tests to see if this makes sense by comparing the attached plots to site-averaged lesion brain map, and they seem to mostly agree. We can surely do more validation and refinement, but I'd figure I'd send this along in the interest of time. By the way, the attached plots only show the extent for lesions above 5 cubic mm.

Happy to go over this more, let me know. I haven't gotten a chance to review with Cenk yet, so I'll plan to do that

soon too.

Cheers,
Ryan

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