

Re: SPAN MRI

From: **Ayata, Cenk, M.D.** | CAYATA@mgh.harvard.edu

Monday,
Mar 8,
4:32 AM

To: **Leira, Enrique C** | enrique-leira@uiowa.edu, **Aronowski, Jaroslaw** | J.Aronowski@uth.tmc.edu, **McCullough, Louise D** | louise.d.mccullough@uth.tmc.edu, **Raymond Koehler** | rkoehler@jhmi.edu, **dhess@augusta.edu** | dhess@augusta.edu, **Sansing, Lauren** | lauren.sansing@yale.edu

Cc: **Fahmeed Hyder** | fahmeed.hyder@yale.edu, **Basavaraju Sangannahalli** | basavaraju.ganganna@yale.edu, **Joe Mandeville** | jbm@nmr.mgh.harvard.edu, **Ryan Cabeen** | Ryan.Cabeen@loni.usc.edu, **Patrick Lyden (USC)** | plyden@usc.edu, **Karisma Nagarkatti (USC)** | nagarkat@usc.edu

Good morning,

During the screening of MRIs we noticed that the total brain volumes significantly differed among the sites but were consistent within each site. Given that we are using the same strain, source and age/sex across the network, the cause is likely technical.

Fahmeed and Joe suggested the following solution: Acquire T2 images (identical SPAN protocol) of a well identified phantom (e.g., a falcon tube). Given the known FOV (e.g., 19.2mm), please measure the exact diameter of the tube (e.g., 13mm). If the tube appears different in size than expected, please send us the correction factor. Accuracy is critical.

The reason for site-difference may be related to gradient calibration. Please do not re-calibrate during the SPAN study. We will use your volume correction factor on our end to adjust image registration for each site.

We need this information from each site as soon as possible to finalize the automated image analysis pipeline (Yale has already performed this test). Please let us know if you have any questions, suggestions or concerns.

Regards,
SPAN MRI group

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From: **Thedens, Daniel R** | dan-thedens@uiowa.edu

Friday, Mar 12, 2:36 PM

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

Cc: **Karisma A Nagarkatti** | nagarkat@usc.edu, **SPAN** | span@healthcare.uiowa.edu

I have acquired the SPAN protocol in a Falcon 8 ml tube (352027) which has an inner diameter at the rim of 11.17mm according to [1]. Using the SPAN protocol RARE images, I measure a diameter on the images of 11.0 mm in the slice acquired closest to the cap end of the tube, probably 5mm from the rim. Measurements farther from the cap end are likely to be smaller as the tube tapers [1]. There is some uncertainty in the measurement depending on window level settings, but based on this experiment, I would assess that we do not need a correction factor for our image geometry.

The complete study is available at the link below. This used tap water, so T2 and ADC are very high.

[urldefense.com/v3/...s0TIA\\$](http://urldefense.com/v3/...s0TIA$)

[1] [urldefense.com/v3/...5GVGg\\$](http://urldefense.com/v3/...5GVGg$)

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Dan Thedens

dan-thedens@uiowa.edu

From: **Ayata** | CAYATA@mgh.harvard.edu

To: **Leira**

Monday, Mar 8, 6:33 AM

Good morning,

During the screening of MRIs we noticed that the total brain volumes significantly differed among the sites but were consistent within each site. Given that we are using the same strain, source and age/sex across the network, the cause is likely technical.

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