The authors investigate whether the loading history of the plantar fascia affects ultrasound measurements of fascia thickness and Shear Wave Speed in different locations. The authors investigate multiple preloading conditions, including walking, jumping, and passive toe extensions. The study contributes to the literature on the effect of preloading on ultrasound measurements in the plantar fascia, but the manuscript requires improvement prior to publication. Please see specific comments below:

Specific Comments:

Introduction:

Line 71: spelling angiofibroblastic

Materials and Methods:

Line 138: Were volunteers performing the exercises such as walking and jumping barefoot or with shoes? Some shoes may affect the loading distribution/ effect size.

Line 146: Please clarify the averaging comment. In the methods it was mentioned that only a single image was taken after each loading scenario at each site. Which average is being taken here?

Line 150: Is this sentence referring to averaging over the different sites? Please be more specific about what is being averaged in the descriptions in this section.

Line 151, Figure 2: In figure 2, it appears as though the shear wave speed increases from the right to the left of the image. Is this an effect of the shear wave direction and acoustic push pulse location (i.e. if you turned the probe around would the same effect occur in the opposite direction), or is it perhaps due to anisotropic effects (i.e. the angle direction of the fascia relative to the shear wave)? A comparison between SWS measured on the left and right of the image would be an interesting indicator as to the cause of this effect. Or a graph of angle vs SWS for all participants.

Additionally, in the Materials and Methods section, please state whether you ensured the imaging was performed with the probe held in the same direction between volunteers and sites/conditions (i.e. the probe was not rotated 180 degrees, as this would affect the shear wave push pulse location(s), and may affect measurements).

Line 186: What was the rest time between each loading scenario? How is it possible to distinguish that the SWS was significantly higher than baseline due to loading condition 2

and 3, if it was not re-established that the fascia had returned to baseline prior to those loading conditions: i.e. the effect is possibly still due to the 'walking' loading condition. Please discuss this and modify the language in the paper to reflect that the tissue may not have returned to baseline between measurements of the different loading conditions.

Results:

Please add the results of the SWS measurements in this section, showing the data. Not simply in relation to thickness, but after each loading scenario.

Discussion:

Line 250: In addition to differences in loading profiles, does a difference in weight of participants also play a role in changes in SWS (was this compared in the statistical analysis) or baseline SWS measurements?

Line 279: Could it simply be that the relaxation changes are taking place over a longer timescale? Ideally, this study would be significantly improved by assessing SWS for several time periods after the loading was completed, until SWS returned to baseline. i.e. have a control at the start (after 5 mins rest), perform the walking loading test, measure, and then measure in 5 min intervals again to assess the timeline of a return to baseline.