**Notes CS meeting Monday 20th**

Giulia: avg DICE score of 0.51. Results don’t look that great in general. Sometimes the predicted mask and actual mask are completely black and yet the DICE score is still low. Might want to change the DICE score computation to be based on FP and FN, etc. (white pixels and black pixels).  
Hausdorff distance: cannot be compared when one or both images are black. Could be worth to try it with changing one voxel value.   
We can ask Cian about this as it is part of the evaluation (not specifically image registration).  
We could add affine before b-splines, but on the other hand we do not have time for this, really.   
AND: we should still run this for the test data!

🡪 Marissa & Giulia: work on improving DICE scores computation and Hausdorff distance computation. Run all test data and get those results.

Lars: tried some SPADE model, some errors. Mailed Cian for help but did not work yet. Cian proposed to get the VAE-model working and then add SPADE layers there. VAE-model still does not work due to input shape errors. Lars and Paula got different errors with the same code (but now the same errors). Probably something wrong in the flatten layer. For generator: input noise and mask, then create discriminator, run everything. All errors are about not being able to multiply some matrices.   
When this works: implement GAN and then it runs. Just run U-Net then. For the test set we already selected three patients (119, 128, 135) but comparatively that is only a small data set (but you should not use generated images in your test set).   
To ask Cian: do we use generated images in the validation set?

Esmée: paper has been rearranged a bit. Methods section of image registration has been changed. The formula for DICE score and 95th-percentile Hausdorff distance should be checked/changed and references should be added.

🡪 Paula: Get U-Net to run, start training.

🡪 Lars & Esmée: Train normal GAN with discriminator, then add SPADE blocks.

Cian:   
- Leave out the slices that we cannot compute the HD distance for and mention the HD distance for the remaining slices. (Mention how many slices were left out.)  
- He took a look at Lars’ code.   
- He will send his code.  
- Try running and training VAUE, then try discriminator, then add SPADE blocks.