INTRODUCTION
➢ Developmental dysplasia of the hip (DDH) is an abnormal condition in infants and commonly treated by the use of the Pavlik harness.
➢ 1 out of every 20 babies has some hip instability.
➢ The effectiveness of the Harness depends on physician expertise, experience and trial-and-error procedures.
➢ For a better understanding which procedure with the Pavlik harness is most effective a multi-physics computational approach has been done.
➢ To prove the results of the computational approach a mechanical model is needed which will provide physicians a better understanding of the mechanics of DDH when using the Pavlik Harness.

METHOD
➢ Trial and error experiments will calibrate the pneumatic to adjust for the right pressure that will replicate the individual curve
➢ The data of the path of reduction of the femoral head will be acquired by IMUs, and will be processed using MATLAB.

RESULTS
➢ A scale of 4x for the model was calculated to be practical for teaching purposes

Figure 6. The 3D printer MakerBot 5th Generation has been the most expensive purchase

Figure 7. Visual representation of budget divided between 3D prototyping and Air muscle pneumatics; Total Budget is $3840.20

REFERENCES

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