

Developmental Dysplasia of the Hip (DDH) refers to an abnormal hip condition that occurs in infants, which can lead to loss of or limited function of the hip joint as well as arthritis later in life. The effectiveness of treatment is dependent on how early DDH is detected. This research aims to develop a realistic medical trainer utilizing the geometry of the hip joint. The ligament strengths are scaled from adult ligament strength due to a lack of available data in literature. The use of infant geometry will create effective trainer will allow for medical students to be more prepared to test for DDH on infants and produce more accurate tests. This research will culminate in the development in a multi-material, 3-D printed prototype. This prototype will be tested for realism against the current DDH Medical Trainer, the Hippy Baby, by pediatric resident students. Fatigue testing will also be implemented to ensure a durable prototype. Additional prototypes representing various stages of the pathology may be developed in the future.

Complex of femoral head and acetabula