Constructing an Alternative MIPS Football Helmet Model to Limit Rotational Acceleration from Angular Impact

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This research study designed and tested an alternative prototype helmet based upon the sliding-layers concepts presented in MIPS technology. Instead of simple sliding layers, this prototype used flexible closed cell foam supports to connect the outer layer of the helmet to an inner layer that surrounds the head. It was hypothesized that this would allow the outer layer to move independently from the inner layer but still provide cushioning from linear impact and be more resilient to the repeated impacts of the football game than other MIPS models. This prototype was designed using variable widths of the supports between the two layers to vary elasticity. Then these models were tested for their ability to reduce rotational acceleration on angular impact compared to a standard football helmet.

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