

## CALIFORNIA STATE SCIENCE FAIR 2016 PROJECT SUMMARY

Name(s)	Project Number
Jensen L. Boyt	
	36298
Project Title	
Testing D3O: Impact Padding Effectiveness in Football Almet	
Technology	
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Abstract (	
Objectives/Goals	had loss
After playing tackle football for the past three years in a Schutt brand helmer, I concussions in the 2015 season. D3O, a non-newtonian padding made from sill	
the difference in the padding. I wanted to test the effectiveness to see if the toa	m. ar. or D3O padding
really made a difference in shock impact, and therefore less injury to a player's	kend.
Methods/Materials	
I used a ten foot ladder, pool broom, leather dog leash, and heavy duty chip to h drop the helmet from 8 feet to a laminate floor. In doing this, I wanted to sincul	hake a pulley release to
impact at the back of the head, where most trauma occurs. Put an egg in a pla	ate nermet to nermet
helmet. I released the clip to drop helmets. I recorded results each time	stie bag and placed it in the
Results	
The egg had no breaks or cracks 100% of the time when dropped from 8 feet with the Schutt helmet	
containing D3O padding. The egg broke most of the time with the other two types of padding, protecting	
0% with the air padding and 25% with the foam padding. Conclusions/Discussion	
D3O padding is more expensive than form and an padding. It is well worth the cost to protect football	
players from life long head trauma such as chronic trauma encephalopathy (CTE). I plan on advocating	
players from life long head trauma sich as chronis trauma ercephalopathy (CTE). I plan on advocating for football player safety equipment, so players can have a productive life even after their gaming careers are long over. I would also like to see this packing used in kidney and heart protection for sports'	
are long over. I would also like to see this packing used in kidney and heart protection for sports' uniforms.	
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Summary Statement	
I demonstrated that DO is effective padding for football helmets in head trauma protection.	
Help Received	
I designed, built, and performed the experiments myself, and my mom recorded video and took pictures.	