



A Research Report on Customized Head Protective Gear

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ABSTRACT

Custom head protectors help reduce concussion injuries that players experience during sports. The main goal of this research report is to replace the headbands of all types of sports helmets with unique custom headwear to help prevent various head-related injuries.

Different types of head injuries for example: Concussions are very common in sports such as football and boxing. Therefore, our product proves to be even more important for the sports industry to prevent such injuries and help players feel safe and play freely.

We also took a close look at 17 studies related to different headgear used in sports and carefully analyzed their strengths and weaknesses.

INTRODUCTION

NEED FOR OUR PRODUCT

Researching headgear used in sports, we found that the invention of headgear was an important discovery to protect athletes in this sport. Take, for example, the birth and development of the football helmet, research that we have carefully analyzed. From this we see that football helmets were introduced in 1896, which coincided with a significant number of head injuries that year.

Our product is mainly needed in the sports industry, because head-to-head collisions, hitting the head with a ball, hard boxing punches and other sports-related injuries cause many injuries and bruises.

But in our research, we discovered that while headgear protects against head injuries, the lasting effects of such injuries can ruin an athlete's career. So, we came up with a product that can prevent such injuries from happening.

The headgear is customized with powerful human-controlled sensors. Regular head restraints only protect against head injuries, but headgear offers the best possible protection. The main element of protection is provided by installed sensors controlled by a person.

For example, in football, when two players enter a game and it is possible that both go to play football at the same time, the headgear sensors are detected and activated by a trained professional using a remote control, and the soft layered outer shell of the headgear is activated. As a result, players do not get injuries that cause concussions. This works in other sports as well.

SWOT ANALYSIS

Strengths: Our product can help prevent head injuries caused by a header or a fast-moving ball hitting a cricketer's head. We have provided maximum security by adding human-operated sensors.

Weaknesses: The main source of weakness that our product may face in the market is that it requires a lot of financial resources to implement the product. Most of the funding goes to the development of human-powered sensors and the hiring and training of workers as professionals.

Opportunities: The market that uses the opportunities of the product we offer is the Sports market. The sports market is growing especially nowadays. Sales of sporting goods increased. Also, the fact that headbands provide essential protection means that sports enthusiasts will buy our products.

Threats: The biggest threat we face is that we are entering the market for the first time and it will take a long time to gain a foothold. That is why it takes us a long time to catch up with our competitors.

REVIEW OF LITERATURE

1. Does cushioned headgear anticipate head harm in Rugby Union Football

This term paper points at looking at the adequacy of cushioned headgear in avoiding head wounds in rugby union football in a male youth populace. The strategy utilized was cluster plan chosen due to the structure of group don and the challenges of conveying diverse mediations to members inside person groups. Measurable strategies were utilized to calculate Frequency rates. The taking after comes about were recorded, the middle-recorded player-diversion exposures per member was nine, and this changed depending on level and participation in finals. This term paper is the primary detailed RCT of head security equip as a damage controlling strategy in rugby union football. This discoveries of the consider demonstrated that cushioned headgear did not diminish the head damage rate or concussions or in general rate of injury.

2. Impact vitality weakening execution of football headgear

This Term paper points to test the commercially accessible head defenders of football to discover their affect vitality constriction execution and how much they can help diminish concussion. The apparatuses utilize both Inflexible (magnesium) and Crossover III head-forms. Eight diverse head defenders were utilized for testing. The basis for head harm and speeding up values appears a comparative drift. An increase was famous within the greatness whereas the drop tallness was expanded. This appears that the froth fabric got completely compressed and advertised small assurance particularly against impacts with more prominent seriousness. The comes about from Lab tests appear that current showcase accessible headgears will not diminish chances of concussion.

3. Is Defensive headgear gear valuable in avoiding concussion? An orderly survey of the literature

This Term paper points to decide the nearness of prove that hardware utilize decreases don concussion chance and seriousness. The sources utilized for this overview included 12 electronic databases employing a combination of Therapeutic Subject Headings and pertinent articles were recognized. They extricated information counting plan, consider populace, exposure/outcome measures and comes about. 51 Thinks about were taken for audit. Lion's share of the ponders were observational. There was too concern of choice predisposition within the looked into considers, as was the need of estimation and control for possibly perplexing variables.

4. Head Wounds, Heading, and the Utilize of Headgear in Soccer

This term paper points at analyzing head wounds, heading, and the utilize of Headgear in Soccer. As per consider intentional heading may not be a chance figure for cognitive impedance. Too there are concerns that all inclusive utilize of headgear may cause more forceful heading and head challenges, driving to expanded chance of harm. The different ponders conducted based on player reports or reports by group restorative faculty appear that wounds primarily result from contact with other players none of the detailed concussions come about from purposefulness heading of the ball. Too whereas looking at sports-related concussion, female competitors have been appeared to have particularly more noteworthy decays in straightforward and complex response times relative to preseason pattern levels on standardized cognitive tests, compared with age-matched male athletes. The think about comes about bolstered the dispute that heading a present-day soccer ball speaks to a much lower hazard than head-to-head contact. The higher levels of soccer endure higher levels of head wounds. Major concerns moreover exist that widespread utilize of headgear may cause players to develop a untrue sense of security and cause more forceful heading and head challenges, driving to expanded hazard of injury.

5. Birth and Advancement of Football Helmet

This term paper points to conduct a survey of the approach and advancement of the football head protector through verifiable, physiological, and biomechanical investigation. This information was gotten from a exhaustive survey of the writing. Through this investigate it was found a critical relationship exists between head wounds and the coming of the football protective cap in 1896, and its advancement to the early to mid-1900s, and administrative guidelines for both head protector utilize and plan and handling rules and directions. Much appreciated to the usage of National Working Committee on Benchmarks for Athletic Gear benchmarks, fatalities diminished by 74% and genuine head injuries diminished from 4.25 per 100,000 to 0.68 per 1,00,000. A bit like the fabric, the defensive plan too demonstrates fundamental in head damage avoidance. In conclusion, head protector utilize has critical conjunction with more rigid head damage rules and rules has had a colossal affect in diminishing head harm seriousness in football.

6. Soft-shell headgear, concussion, and damage anticipation in youth group collision sports: precise review

This term paper points to discover out the affiliation that exists between soft-shell headgear utilize and sports-related concussion. Their auxiliary objective was to evaluate the existing affiliation between soft-shell headgear and shallow head harm and examine potential increment in damage chance among soft-shell headgear clients. The measures of result utilized are the rate rates of SRC, shallow head harm or other wounds.

During the inquire about, eight considers were qualified. The major disclosure was that the larger part detailed no contrast between rate of SRC and headgear clients versus non-users. The astounding conclusion was that the headgear utilize was not related with decreased rates of SRC or head wounds in youth soccer and rugby.

7. Adequacy of headgear in football

This Term paper points at deciding whether football headgears have a critical affect on head reactions. Lab tests were conducted with the assistance of a volunteer and surrogate framework. Too tall seriousness heading additionally head-to-head impacts were considered to degree straight and precise listened reactions. The conclusion was that the football headgear models did not give any benefits.

8. Defensive Headgear in Rugby Union

This Term paper analyzes the ponders performed on the utilize of headgear in sport related to rugby. The most advantage is that the plan and adequacy of head protectors are well documented.

The utilize of headgears are suggested to supply assurance from injury caused by affect although as per investigate commercially available headgears don't give most extreme assurance against head injuries.

Much more inquire about ought to be conducted to decide the adequacy of headgears in rugby.

9. The impact of defensive headgear on head wounds and concussions in pre-adult football (soccer) players

This term paper points at deciding the impacts of defensive headgear in youthful football (soccer) players. The plan design plan Synonyms utilized is Cross-sectional consider. Members included in this ponder include children between 12-17 a long time. Among the individuals who were tested for this Term paper, the majority (48.7%) endured concussion amid the footballing year. Roughly 4 out of 5 players were not mindful that they endured from concussion. Last conclusion was that a critical number of pre-adult football players endured from concussions. Too the hazard of concussion is more in case of females and those who wore headgears confronted less hazard of concussion.

10. Viability of rugby headgear in avoiding delicate tissue wounds to the head: a case-control and video cohort think about

This term paper points to discover out on the off chance that headgear utilized by rugby players are related with diminished chance of head damage. When it comes to the strategy, an audit of recordings of all 41 diversions within the 1999 Rugby World Container was done to compare with the case-controlled think about. Last conclusion from this term paper was that headgear can anticipate certain sorts of shallow head wounds in players at all levels of the amusement from novice to proficient.

11. Impact of defensive headgear on head wounds and concussions in juvenile football (soccer) players

In the masses mulled over, 47.8% had experienced side impacts of a power outage amid the continuous football year. 26.9% of competitors who wore headgear (HG) and 52.8% of the people who did not wear headgear (No-HG) had power outages. Generally, 4 out of 5 competitors in each gathering didn't get it they had experienced a power outage. More than one power outage was competent by 50.0% of the concussed HG competitors and 69.3% of the concussed No-HG bunch. 23.9% of all concussed players experienced side impacts for some place around 1 day or longer. Components that extended the bet of encountering a power outage amid the 2006 football year included being female and not wearing headgear. Being female and not wearing football headgear extended the bet of encountering a scratched spot, cut or wound on locale of the head secured by football headgear.

12. Recognitions of Surfboard Riders With respect to the Require for Defensive Headgear

Most surfers were men (90.2%), young (cruel age 28.2 a long time), and experienced (cruel long extends of surfing 11.6). Fair 245 (38.0%, 95% CI 34.2-41.9) surfers considered the best of head damage whereas surfing as direct or tall, and fair 12 (1.9%, 95% CI 1.0-3.3) nitty gritty schedule utilization of headgear. The surfers were bound to accept that there was a better bet of head harm in several recreations and proactive assignments ($P < .001$). Though 475 surfers (73.8%, 95% CI 70.2-77.1) felt that surfers who wear headgear are less inclined to gotten to be hurt, 400 (62.1%, 95% CI 58.2-65.9) point by point that headgear limited riding execution which they would incline toward to surf without it. The essential clarifications behind not wearing headgear were "do not bother," bother, claustrophobia, and impacts upon the resources and equilibrium.

13. Assessment of item security test strategies: defensive headgear

The likelihood of a physical issue related with a buyer thing is for the foremost portion overviewed by test methods that are deliberations of veritable circumstances which may thusly be beautiful much preposterous. To display the impacts of differentiating measures of realness, the veritable reenactment of contacts with headgear security was differentiated and a non-practical test procedure. The honest to goodness reenactment utilized a humanoid head form, the test technique are unbendable metal head form. Impact speed was no distinctive for the two plans; impact surface vacillated in hardness to address distinctive playing surfaces. Utilizing laid out strength rules, methodologies were delivered for relating pass/bomb edges of the honest to goodness propagation to those of the test methodology. Moreover, the capability of the test technique was overviewed with respect to Alright degrees of isolation of dangerous things, as well as the misdirection rate (expulsion of secure things). The nonrealistic test technique was found to relate enough well with honest to goodness entertainment to be utilized in testing cautious headgear.

14. Why Surfers do no wear headgear

This ponder inspected why most surfers do not wear defensive headgear in spite of the tall rate of This consider inspected why most surfers don't wear defensive headgear in spite of the tall rate of head wounds in surfing. The analysts utilized member perception and interviews to investigate the demeanors and recognitions of 12 experienced surfers from the West Coast of Canada. The think about found that surfers do not wear defensive headgear due to reasons such as distress, the conviction that it is only for other surfers, the recognition that surfing isn't a high-risk don, and tasteful reasons. The consider utilized the concepts of subcultural capital and edgework to clarify how bigger socio-cultural variables impact the rationalizations for not wearing

defensive headgear. head wounds in surfing. The analysts utilized member perception and interviews to investigate the demeanors and discernments of 12 experienced surfers from the West Coast of Canada.

15. Why don't surfers wear headgear?

This reflection explored why most surfers do not wear protective headgear despite their high speeds. This begs the question of why most surfers do not wear protective headgear despite the high incidence of head injuries in surfing. Analysts used member observations and interviews to examine the behaviors and confessions of 12 experienced surfers from the west coast of Canada. On reflection, surfers do not wear protective headgear because of things like anxiety, the belief that it's only for other surfers, the perception that surfing isn't risky, and stylish reasons. The review used the concepts of subcultural capital and marginal labor to explain how large sociocultural variables influence the rationalization of not wearing protective headgear. head injuries in surfing. Analysts used member observation and interviews to examine the behavior and discrimination of 12 experienced surfers from the west coast of Canada.

16. The impact of headgear in rugby union

The study looked at how Rugby Union protective headgear reacts to a head-on collision. They used a numerical model based on off-the-shelf products that included a padded shell with prismatic elements made of hyper foam. The pad material model was calibrated experimentally. They simulated a head-helmet impact on a rigid surface with different kinetic energies to evaluate the effectiveness of the protective equipment.

17. Does headgear prevent rugby tackle injuries?

The study examines how rugby union protective headgear reacts to a head-on collision. The model was created from commercially available products and consists of a shell padded with prismatic elements. The padding material used is a hyper foam preparation that has been calibrated based on testing methods. The simulations were performed to evaluate the effectiveness of the protective equipment by impact of the head-helmet assembly on a rigid surface with different kinetic energies.

METHODOLOGY

By researching our topic and examining 17 research papers, we found answers to the following questions that will help us track our product:

1. How effectively do padded head restraints protect against head injuries?
2. What would be an ideal material to use in the design of a headgear?
3. Do statistical methods allow a complete calculation of incidence?
4. Which headgear is more effective in rugby or football?

The answers to these questions gave us important ideas to continue this research.

FINDINGS AND CONCLUSION

While doing this research, we found out that our ideas were tested in several laboratories, but they could not solve the problem of various head injuries, mainly concussion. That is why our product has its place on the market precisely in the field of sports science. Our carefully crafted product can put an end to the concussion problems that plague players' careers every year, and ensure that players can finally play freely and enjoy the sport happily.

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