Industrial helmet injury protection from falls

Study highlight from Liberty Mutual Insurance

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Let's explore the practical implications of this research study:

Evaluation of the fall protection of type I industrial helmets[1]

Falls from height and falls on the same level are the #1 and #4 most costly workplace injuries for construction in the United States (approximately $4.25 billion per year).[2]

Type I helmets are designed to protect workers from objects that fall from above. This NIOSH study, partially supported by Liberty Mutual, sought to test whether type I helmets could offer protection against head injury due to falls. By dropping manikins in a controlled backward fall of 5-feet, with and without helmets, researchers found:

- All tested helmet models **significantly reduced** head impact forces and their likelihood to cause serious or severe injury
- More advanced helmets (think safety helmet designs over classic hardhats) offered **significantly more protection** than basic hardhat designs, reducing the probability of serious injury to 28% or less

How you can help

Employers can do their part to help prevent injuries from falls in the construction industry.

Provide appropriate safety equipment

- Supply and enforce wearing industrial helmets on the jobsite, and consider supplying more advanced safety helmet designs
- Implement fall protection systems
- Utilize ladders and step stools of appropriate height

Plan ahead

- Know what needs to be done and the path that will be traveled
- Eliminate slip and trip hazards
- Create designated pedestrian pathways in high traffic areas
- Calculate total fall clearance distance to prevent workers from hitting a lower level in the event of a harnessed fall

Keep jobsites organized

- Keep tools, trash, and supplies in designated areas to keep pathways clear
- Tape cords or hoses to the surface and make them clearly identifiable with cord corrals
- Illuminate the job site to make sure the slip and trip risks can be seen; utilize diffuse lighting to help prevent shadows

Study limitations

Manikins were tested at one height for a fall in a single direction under controlled laboratory conditions. Impact and injury reduction on human workers may differ during actual jobsite use.

Risk Control resources to get you started

As a policyholder, you have exclusive access to Risk Control tools and resources through Liberty Mutual SafetyNet™ — visit **lmi.co/safetynet**

- Guidelines for selecting a fall arrest anchorage system, RC 5442
- Portable ladders, RC 858

References

1. Wu JZ, Pan CS, Cobb C, Moorehead A, Kau TY, Wimer BM. Evaluation of the fall protection of type I industrial helmets. Annals of biomedical engineering. 2022 Feb 5:1-4.
2. Liberty Mutual Insurance (2022). 2022 Liberty Mutual workplace safety index. Retrieved from https://business.libertymutual.com/wp-content/uploads/2022/06/WSI-1002_2022.pdf