Statement of the Problem: Military and police personnel have been experiencing threats from numerous types of weapons which leads to serious injuries and death. With the increase in demand for new weapons and warfare technologies, the rise in the number of battlefield threats is inevitable. Also, the variety of threats due to the evolution of weaponry technology is getting diversified. In order to prevent and minimize the risk of injury and death, we need to develop and design new materials and systems which can provide adequate protection and lower the amount of risk that can lead to potential damage. Another problem with the current bulletproof vests is their weight. Very few materials are capable of being strong and lightweight at the same time. Research has shown that there are some composite materials and alloys that possess both properties. Along with being lightweight and strong, the other important factor is comfort. The comfort of the armor that personnel is wearing should be a priority in order to maintain satisfaction and mobility on the battlefield.

Methodology and Theoretical Orientation: Various testing methods will be introduced in this paper which will be capable of minimizing risks from different types of weapons like bullets, Improvised Explosive Devices (IEDs), knives, shrapnel, and other evolved threats. The standards used by different nations will be discussed as well. The design and materials used in the making of body armor will be elaborated in terms of characteristics and functions. Innovative materials and futuristic potential materials and their properties can provide more scope for the research will be listed as a review of various other material researches.

Findings: The characteristic properties and results of testing various materials such as composites, fluids, structures, and alloys will be discussed to get a clear picture in terms of which materials should be preferred while manufacturing Body armor. The results of various testing under different conditions will be listed.

Conclusion & Significance: Military and Police personnel needs to be given a better form of protection from threats. Along with strength and weight, the other important factors that should be taken into consideration are comfort and ease of mobility. Research on new composites and materials shows that we can excel in all these areas and save lives to make the world a peaceful and crime-free place.