Crash-Test Software Saves Lives And Money

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Because dummies are not human, the crash-test data that automobile manufacturers rely on to make design decisions is not as relevant to human safety as it could be. Professor King H. Yang, Ph.D., director of the Bioengineering Center at the College of Engineering at Wayne State University in Detroit, decided to come up with a more "human" way to test car safety.

> *Using crash-test dummies is a good way to make cars safer for dummies — but not necessarily people.*

In the early 1990s Yang, along with professor Albert I. King, Ph.D., and a team of graduate students developed a software program called Anthropomorphic Numerical Surrogate for Injury Reduction (ANSIR). The Centers for Disease Control and the automotive industry supported the research, which exceeded $10 million.

The technology was disclosed in 1995 and licensed in 1998 to Toyota Motor Co. ANSIR is a software program that uses computerized models to demonstrate the detailed effects of car crashes on the human body. The models are based on tests using cadavers and reveal how various crash angles, velocities and car sizes affect the human body, especially internal organs. ANSIR presents far more detailed and accurate information compared to data derived from crash tests

with dummies.

Toyota is currently developing its own variation of ANSIR and requires first-tier suppliers to use human models to check the safety performance of the parts they supply. ANSIR technology has been licensed around the world and is expected to save millions of dollars in crash-testing vehicles, improve vehicle safety, and reduce injuries. The software also has applications for designing sports and military helmets, body armor, and for pre-neurosurgical planning.