



## **Computerized Child Dummies Ensure Vehicle Restraint Systems Keep the Smallest Passengers Safe During Collisions**

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Toronto, ON: Vehicle restraint seats offer the best protection to children during a collision, but they can also contribute to specific injuries, such as lap belt injuries. To enhance the restraint systems, a team of researchers has developed a new computer model program that creates real-life testing situations without harm to children or material resources such as vehicles. On June 18, 2003, Dr. Howard will present some of the team's findings at the AUTO21 Scientific Conference in Niagara-on-the-Lake, Ontario.

Dr. Andrew Howard, a paediatric orthopaedic surgeon at The Hospital for Sick Children in Toronto and a project leader for the AUTO21 Network of Centres of Excellence, is coordinating the team of researchers investigating the issue.

"The pattern of injuries caused by restraint systems is very common amongst children in vehicle collisions," says Dr. Howard. "The program places computerized child dummies in different physical scenarios that incorporate information from actual hospital cases at The Hospital for Sick Children to determine the best mechanical improvements to the systems. By using a computer model, we can modify the reconstructed crash to determine what could be done to prevent the injury or lessen the severity."

One of the issues the researchers are exploring is whether neck injuries to restrained toddlers could be minimized by changing their seating position to rear-facing, as is currently recommended for infants traveling in car seats. Further modeling of lap-belt injuries to the spine and the protection offered by booster seats is also slated for investigation.

As part of the AUTO21 Network, Dr. Howard coordinates the work of researchers from the University of Windsor and Ryerson University. By using a multi-disciplinary team with complementary backgrounds in mechanical engineering and the health sciences, several areas of expertise can be applied to the problem. The project is supported by the Ontario Neurotrauma Foundation, the Ford Motor Company and The Hospital for Sick Children.

The AUTO21 2003 Scientific Conference will take place June 16-18, 2003 at the White Oaks Conference Resort in Niagara-on-the-Lake (253 Taylor Road). Dr. Howard's presentation is scheduled for 10:45 a.m.-11:15 a.m. on Wednesday, June 18. The conference is an annual event that highlights some of the Network's recent research results while providing a networking opportunity for the Network's 450 university and student researchers and additional industry and government representatives.

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Other conference presenters include Michael Grimaldi, President of General Motors of Canada, and Gerald Fedchun, President of the Automotive Parts Manufacturers Association. Additional conference information can be found on [www.auto21.ca](http://www.auto21.ca) in the news and events section.

The Government of Canada awarded the AUTO21 Network of Centres of Excellence an initial four-year grant of \$23 million in 2001 to help it enhance Canada's position as a world leader in automotive research and development. Researchers at 32 Canadian universities are working on innovative, auto-related projects in the areas of health, safety and injury prevention; societal issues; materials and manufacturing; design processes; powertrains, fuels and emissions; and intelligent systems and sensors. In addition to the federal grant, AUTO21 is supported by industry, government and institutional contributions of \$11 million.

Networks of Centres of Excellence are unique partnerships among universities, industry, government and non-governmental organizations aimed at turning Canadian research and entrepreneurial talent into economic and social benefits for all Canadians. An integral part of the federal government's Innovation Strategy, these nation-wide, multidisciplinary and multisectorial research partnerships connect excellent research with industrial know-how and strategic investment.

Three Canadian federal granting agencies - the Canadian Institutes of Health Research (CIHR), the Natural Sciences and Engineering Research Council of Canada (NSERC), and the Social Sciences and Humanities Research Council of Canada (SSHRC) - and Industry Canada combine their efforts to support and oversee the NCE initiative.

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