

For immediate release

8 December 2003

VOLVO'S PREGNANT CRASH TEST DUMMY

Volvo's award-winning Safety Centre in Sweden now has the world's first pregnant crash test dummy model so its experts can learn more about the impacts of the seat belt and airbag on a mother and unborn baby in car accidents.

Volvo has developed the computerised model as part of its constant focus to improve protection for all occupants in its cars – even the unborn ones. The model represents a woman - named 'Linda' – at a late stage of her pregnancy, when the unborn baby is at greatest risk in an accident

Simulated front-end impact tests are being used to study in great detail how the seat belt moves and its combined influence with the airbag on the uterus, placenta and foetus, as well as how the foetus moves in relation to the mother's body.

The model will also be used to test new seat belt designs and other safety systems.

"Currently, the seat belt is the best form of protection for pregnant women and their babies, but it's crucial to wear it in the right way. It should fit close to the body, go between the breasts and as low as possible over the hips. The lap section of the belt shouldn't be allowed to ride up in front of the tummy, as that could harm the baby," says Laura Thackray, a Biomechanical Engineer at Volvo's Safety Centre in Gothenburg, Sweden.

“I’m certain that there’s room for further development of the three-point belt, to make it more comfortable and to provide optimized protection,” adds Laura.

In an accident, the belt restrains both the pregnant woman’s thorax and pelvis, but her abdomen is free to move in the direction determined by the particular forces arising from the impact.

Because the foetus is floating inside the womb, the more likely potential injury is the placenta becoming either partially or completely detached, which means that the baby cannot get enough oxygen. The rarer scenario is for the baby to sustain physical injury from impacting with the mother's pelvic bones or the car’s interior.

“While the uterus is relatively elastic and can therefore change shape, we think the placenta may become detached because it is not equally resilient to the forces sustained during an accident,” Laura Thackray explains. “We think so, but we don’t know yet. That’s why this model is so important. We have to find out more to be able to protect the foetus in the best possible way.”