Car Seat Safety

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Car seats and boosters provide protection for infants and children in a crash, yet car crashes are the leading cause of death for children ages 1 to 13. Correctly used child safety seats can reduce the risk of death by as much as 71 percent. Infant car seats can be safely used from day one until your baby reaches the seat's maximum height or weight limit. That's why it is so important to choose the right car seat for your child. The purpose of this experiment was to determine which brand of car seats absorb the force of impact better. We hypothesized that car seats with the largest amount of padding will absorb the greatest force of impact. First, we selected four different brands of car seats and built a device to create impact. We recorded the force of impact on the accelerometer in m/s2 to the nearest hundredth and repeated the process for 25 trials, for each of the 4 brands of car seats. We also measured the padding thickness of each car seat, in centimeters. Our hypothesis was supported. The data showed that the Baby Trends, which had the thickest car seat padding at 1.25 cm, had an acceleration of impact of 0.326m/s2. The data collected from the experiment showed that the car seat with larger amounts of padding absorbed more impact. The Baby Trends infant car seat that we tested is safe for children weighing up to 30 lbs and 30 inches tall. It has EPS energy-absorbing foam which has the ability to absorb more energy and is used in safety devices to convert, channel and dissipate crash energy. This in turn helps to prevent the energy from reaching the brain or body. This brand of car seat was also the most affordable, at $109.99, making it the most cost efficient and safe car seat for an infant.

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