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Volume Two **Air Bags Report**

2000
Motor Vehicle Occupant Safety Survey

U.S. Department of Transportation
National Highway Traffic Safety Administration

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16. Abstract

The 2000 Motor Vehicle Occupant Safety Survey was the fourth in a series of biennial national telephone surveys on occupant protection issues conducted for the National Highway Traffic Safety Administration (NHTSA). Data collection was conducted by Schulman, Ronca & Bucuvalas, Inc., a national survey research organization. The survey used two questionnaires, each administered to a randomly selected national sample of about 6,000 persons age 16 or older. Interviewing began November 8, 2000 and ended January 21, 2001. This report presents the survey findings pertaining to air bags. Telephone surveys provide self-reported information, which can differ from information collected through direct observation. Detailed information on the survey methodology, as well as copies of the questionnaires, are contained in a separate NHTSA report ("2000 Motor Vehicle Occupant Safety Survey. Volume 1. Methodology Report").

The percentage of drivers with airbags in their primary vehicles has continued to increase. In 2000, 67% reported air bags in the primary vehicles, compared to 53% in late 1998. Drivers with airbags continued to be more likely to use their seatbelts than were those without airbags in their primary vehicle.

Nonetheless, the public still does not fully understand how air bags function. A large percentage of air bag owners, for example, believe that air bags will deploy when impact is from behind. In addition, nearly half of respondents (46%) said that they had concerns about air bag safety.

Despite some confusion and concerns over air bags, 82% of the public would prefer air bags on their next vehicle, compared to 13% who would prefer not to have air bags on their next vehicle, and 5% who were not sure.

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INTRODUCTION

Background

The Motor Vehicle Occupant Safety Survey is conducted biennially for the National Highway Traffic Safety Administration (NHTSA). It is a national telephone survey composed of two questionnaires, each administered to several thousand randomly selected persons age 16 and older. Version 1 of the questionnaire emphasizes seat belt issues while Version 2 emphasizes child restraint issues. The questionnaires also contain smaller modules addressing such issues as air bags, motorcyclist and bicyclist helmet use, emergency medical services, and crash injury experience. For the 2000 survey, each questionnaire was administered to approximately 6,000 individuals. This represented an increase in sample size of 2,000 per questionnaire compared to previous Motor Vehicle Occupant Safety Surveys.

NHTSA conducted the first Motor Vehicle Occupant Safety Survey in 1994. Subsequent versions of the survey have included modest revisions to reflect changes in information needs. Thus, the 2000 survey contained numerous items from the earlier surveys, which allows the agency to monitor change over time in knowledge, attitudes, and (reported) behavior related to motor vehicle occupant safety. The 2000 survey also included new questions dealing with such areas as adjustable shoulder belts, side air bags, inspection stations for child restraints, and how seat belts fit children.

The following report presents findings from the 2000 Motor Vehicle Occupant Safety Survey pertaining to air bags. Section 1 presents the 2000 results. Section 2 compares findings across years, from 1994 through 2000.

Methodology

The 2000 Motor Vehicle Occupant Safety Survey was conducted by Schulman, Ronca & Bucuvalas, Inc. (SRBI), a national survey research organization. SRBI conducted a total of 12,121 telephone interviews among a national population sample. To reduce the burden on the respondents, the survey employed two questionnaires. A total of 6,072 interviews were completed in Version 1 and 6,049 were completed in Version 2. Although some questions were used in both versions (e.g., demographics, crash injury experience, seat belt use), each questionnaire had its own set of distinct topics. Each sample was composed of approximately 6,000 persons age 16 and older, including oversamples of persons ages 16-39. The procedures used in the survey yielded national estimates of the target population within specified limits of expected sampling variability, from which valid generalizations can be made to the general public.

The survey was conducted from November 8, 2000 to January 21, 2001. This is approximately the same time period in which the previous surveys were conducted. For a complete description of the methodology and sample disposition, including computation of weights, refer to the 2000 Motor Vehicle Occupant Safety Survey, Volume 1: Methodology Report. The report includes English and Spanish language versions of the questionnaires.

The percentages presented in this report are weighted to accurately reflect the national population age 16 or over. Unweighted sample sizes ("N's") are included so that readers know the exact number of respondents answering a given question, allowing them to estimate sampling precision (see Appendix A for related technical information).

Percentages for some items may not add to 100 percent due to rounding, or because the question allowed for more than one response. In addition, the number of cases involved in subgroup analyses may not sum to the grand total who responded to the primary questionnaire item being analyzed. Reasons for this include some form of nonresponse on the grouping variable (e.g., "Don't Know" or "Refused"), or use of only selected subgroups in the analysis. Moreover, if one of the variables involved in the subgroup analysis appeared on both versions of the questionnaire, but the other(s) appeared on only one questionnaire, then the subgroup analysis was restricted to data from only one version of the questionnaire.

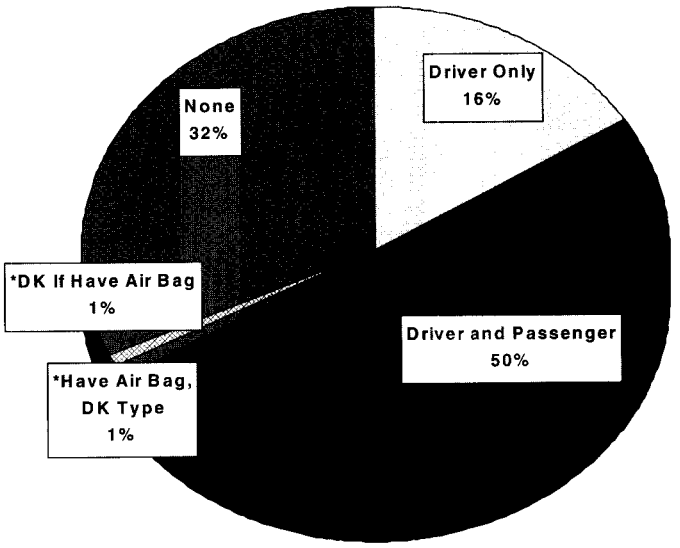
SECTION 1

2000 SURVEY RESULTS

Prevalence of Air Bags

By late 2000, two out of three drivers reported having an air bag in their primary driving vehicle. Half (50%) reported having driver and passenger side air bags compared to 16% with air bags on the driver side only. Another 1% had an air bag but were unable to identify the type. One-third of drivers did not have an air bag in the vehicle they drive most often (32%) or did not know if they had an air bag (1%).

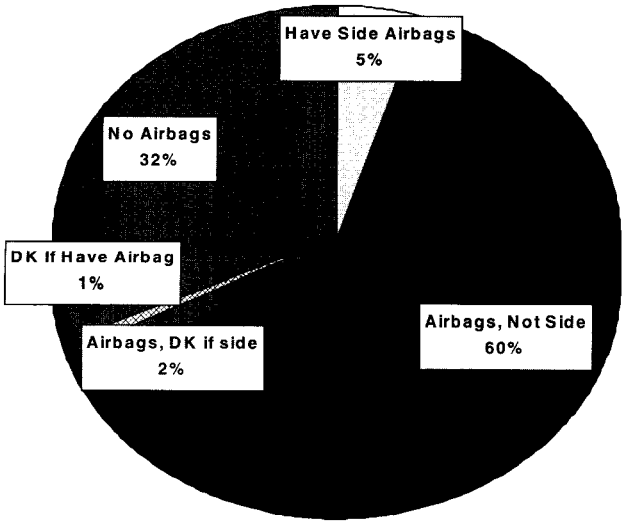
Figure 1
Air Bags in Primary Vehicle, 2000



Qx: Does the (vehicle) you normally drive have an air bag?
Qx: Is the air bag for the driver only or is there also an air bag for the front seat passenger?
Base: Drivers whose primary vehicle is not a motorcycle
Unweighted N=11,039

The 2000 survey added a question pertaining to side air bags. While 67% of drivers reported air bags in their primary vehicle, only 5% of drivers reported having side air bags.

Figure 2
Side Air Bags in Primary Vehicle, 2000

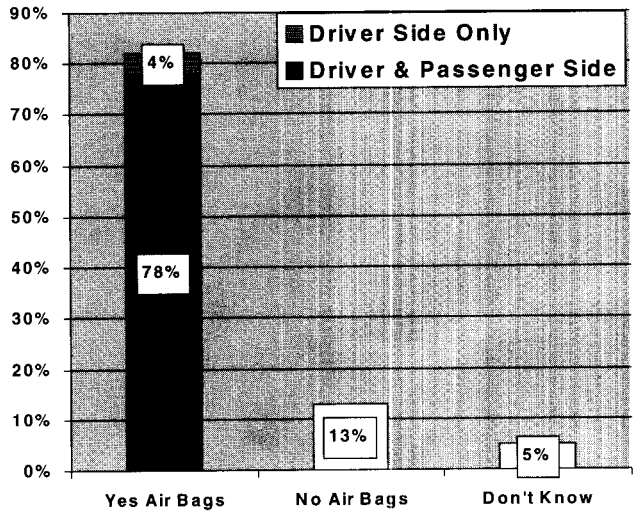


Qx: Does the (vehicle) you normally drive have an air bag?
Qx: Does the (vehicle) you normally drive have side air bags?
Base: Drivers whose primary vehicle is not a motorcycle
Unweighted N=11,039

Air Bag Demand

Most of the public (82%) would prefer air bags in their next vehicle, compared to 13% who would prefer not to have air bags and 5% who were not sure. The majority of the public preferred vehicles with both driver and passenger-side air bags, with only 4% preferring air bags on the driver's side only in their next vehicle.

Figure 3
Prefer Air Bags On Your Next Vehicle, 2000



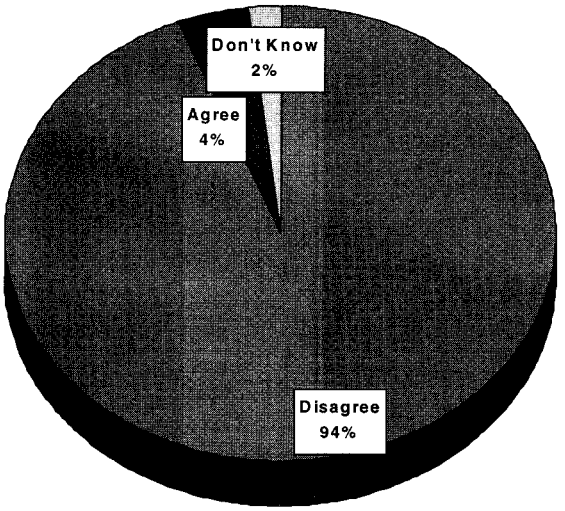
Qx: Would you prefer that your next vehicle have driver air bags only, driver and passenger air bags, or no air bags??
Base: Total Population Age 16+
Unweighted N=6,072

Air Bags and Seat Belt Use

Air bags and seat belts are two parts of a vehicle's passenger safety system. Safety experts emphasize that drivers and passengers should always wear their seat belts, regardless of whether or not the vehicle contains an air bag.

To assess consumer understanding of this issue, respondents were asked to agree or disagree with the statement: "If my car has a driver side air bag, I don't need to wear my seat belt when driving" (or for non-drivers, whether or not they need to wear the belt if there is a passenger side air bag). Correctly, the overwhelming majority (94%) did not view air bags as a substitute for seat belts.

Figure 4
Agree or Disagree: Seat Belt Unnecessary When Air Bag is Present, 2000



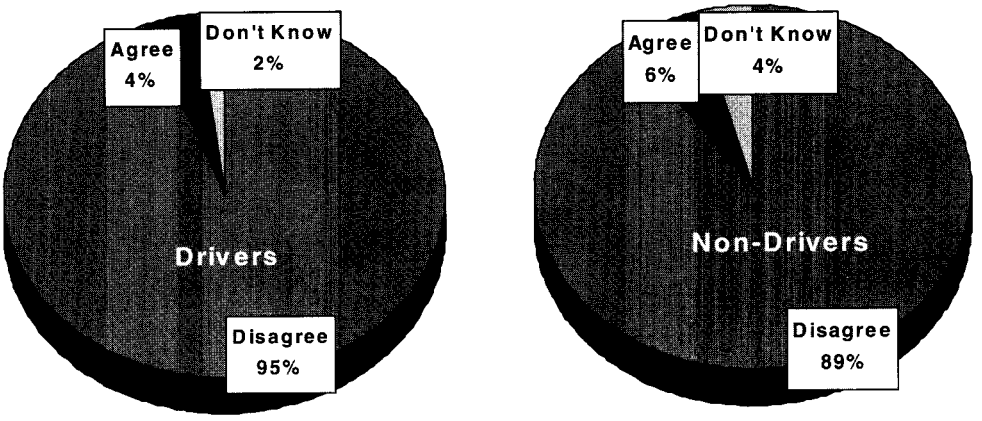
Qx: Please tell me whether you agree or disagree with the following statement: "If my car has a (driver/passenger) side air bag, I don't need to wear my seat belt when (driving/riding)."

Base: Total population age 16+

Unweighted N=6,072

Drivers were somewhat more likely than non-drivers to believe that seat belts should still be used when the vehicle has an air bag. About 95% of drivers correctly disagreed with the statement "If my car has a driver side air bag, I don't need to wear my seat belt when driving." By contrast, 89% of non-drivers disagreed with the passenger side statement.

Figure 5
Agree or Disagree:
Seat Belt Unnecessary When Air Bag is Present:
Drivers vs. Non-Drivers, 2000



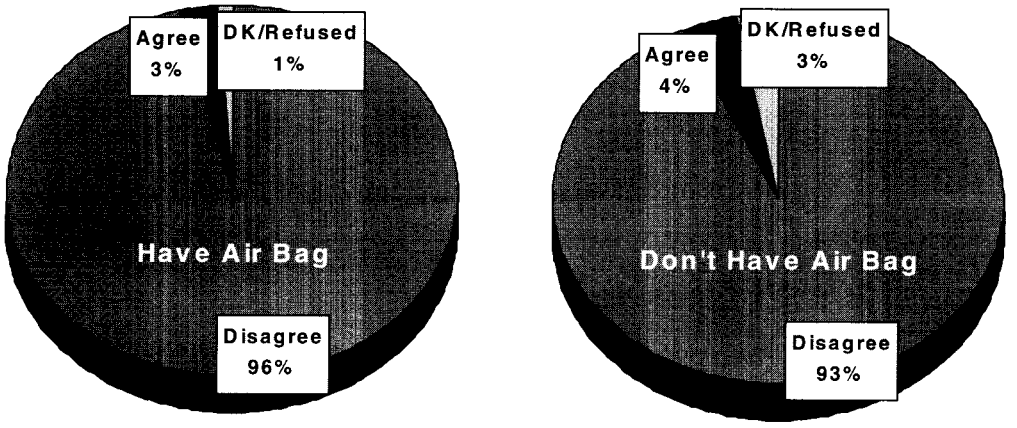
N=5,504 N=568

Qx: Please tell me whether you agree or disagree with the following statement: "If my car has a (driver/passenger) side air bag, I don't need to wear my seat belt when (driving/riding)."

Base: Total population age 16+

Drivers with air bags in their primary vehicle were slightly more likely than drivers not having air bags to know that air bags do not eliminate the need for seat belts. Ninety-six percent of drivers with air bags correctly disagreed that seat belts were unnecessary with air bags compared with 93% of drivers without air bags in the primary vehicle.

Figure 6
Agree or Disagree:
Seat Belt Unnecessary When Air Bag is Present:
Primary Vehicle Comparison For Drivers, 2000



N=3,715 N=1,734

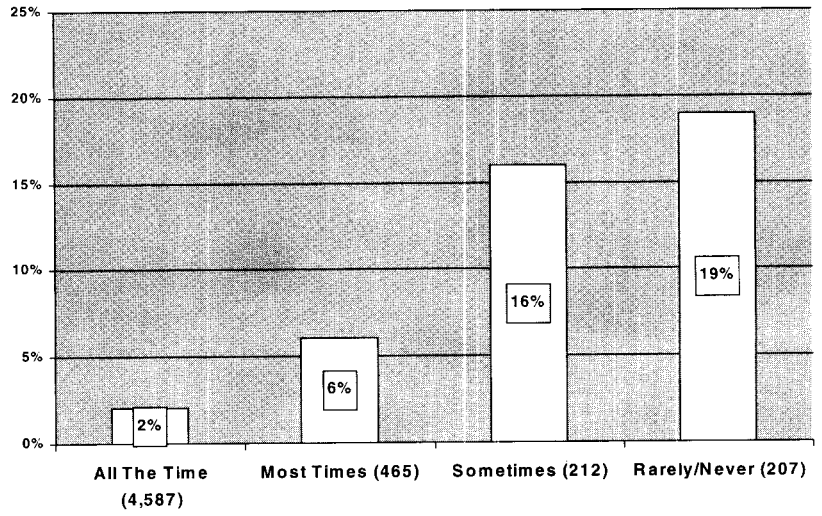
Qx: Please tell me whether you agree or disagree with the following statement: "If my car has a (driver/passenger) side air bag, I don't need to wear my seat belt when (driving/riding)."

Qx: Does the vehicle you normally drive have an air bag?

Base: Drivers whose primary vehicle is not a motorcycle

Only 2% of drivers who said they use their seat belt all the time when driving agreed (incorrectly) with the statement, "If my car has a driver side air bag, I don't need to wear my seat belt when driving." The less frequently one wore a seat belt, the more likely he or she was to agree with the statement. Nearly one-fifth (19%) of drivers who rarely or never wear their seat belt incorrectly stated that seat belts don't need to be worn when an air bag is present.

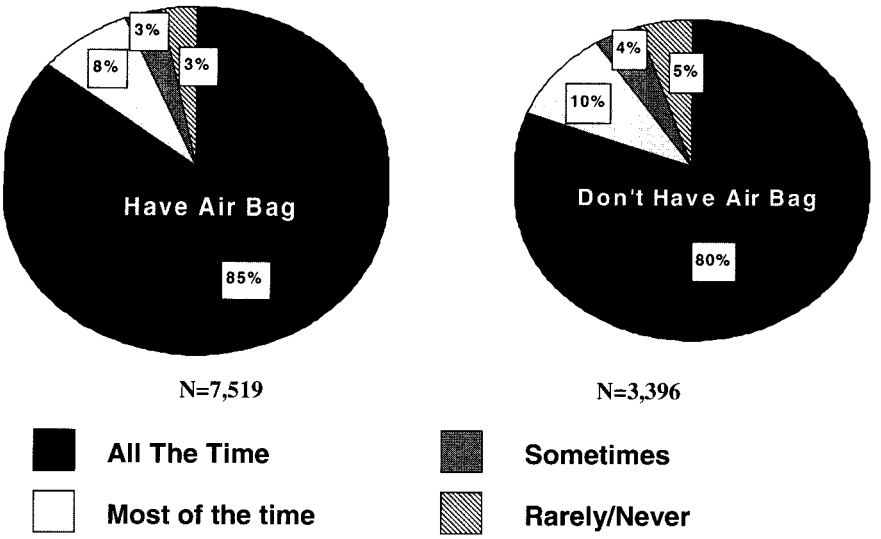
Figure 7
Believe Seat Belt Unnecessary With Air Bag By Belt Use, 2000



Qx: Please tell me whether you agree or disagree with the following statement. If my car has a driver side air bag, I don't need to wear my seat belt when driving.
Base: Drivers whose primary vehicle is not a motorcycle

Seat belt use did not decline when vehicles were equipped with air bags. Eighty-five percent of drivers with air bags said they use their seat belts all the time, compared to 80% of drivers whose primary vehicle did not have an air bag.

Figure 8
Frequency of Driver Seat Belt Use By Whether Vehicle Has Air Bag, 2000

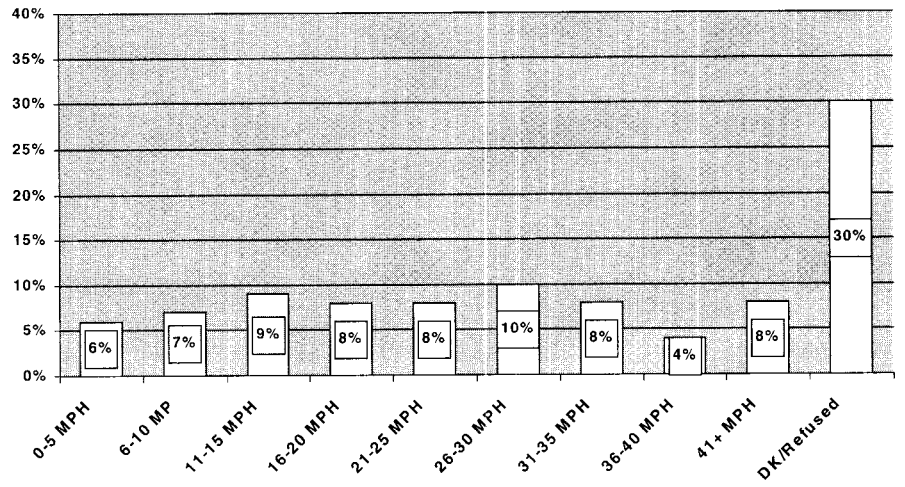


Qx: Does the vehicle you normally drive have an air bag?
Base: Drivers whose primary vehicle is not a motorcycle

Minimum Speed for Air Bag Deployment

There was no consensus among the public about the minimum speed at which air bags deploy. Their estimates of impact speed for deployment spread fairly evenly from less than 6 mph to over 40 mph. Half (*49%) estimated that air bags deploy at speeds of 30 mph or less. Three in ten (30%) said they didn't know the minimum impact speed for an air bag to deploy.

Figure 9
Estimated Minimum Impact Speed
For Air Bag to Deploy (5 Mile Increments), 2000



Qx: Based on what you know or have heard, what is the minimum speed a vehicle would have to be hit in order for an air bag to open up?
Base: Total population age 16+
Unweighted N=6,072

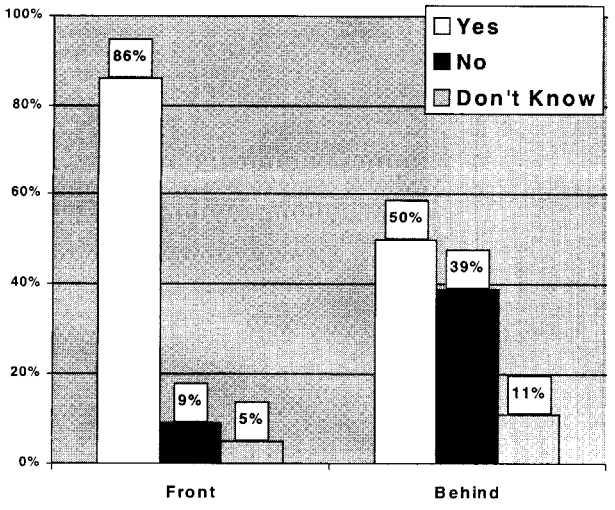
** The number does not equal the sum of the components in the Figure due to rounding.*

The change in crash velocity necessary (or threshold) for an air bag to deploy can vary based on the make/model/year of a vehicle. Some vehicles with sophisticated algorithms also vary the threshold depending upon occupant characteristics (such as safety belt usage or seat position) and/or crash configuration (full frontal vs. offset, pole vs. rigid wall, etc.). For example, in some air bag systems, the deployment threshold for a vehicle hitting a rigid wall may be in the range of 8-12 mph for an unbelted occupant and 12-16 mph for a belted occupant. Here the threshold is set higher for the belted occupant since the safety belt may provide sufficient protection in lower severity crashes, whereas the unbelted occupant (with no other restraint) may benefit by having an air bag.

Location of Impact and Air Bag Deployment

Most of the public was aware that air bags deploy in front-end impacts. The overwhelming majority (86%) believed air bags would open if the vehicle were hit from the front at a moderate speed. However, half of the public age 16 and older incorrectly thought air bags would open if hit from the rear.

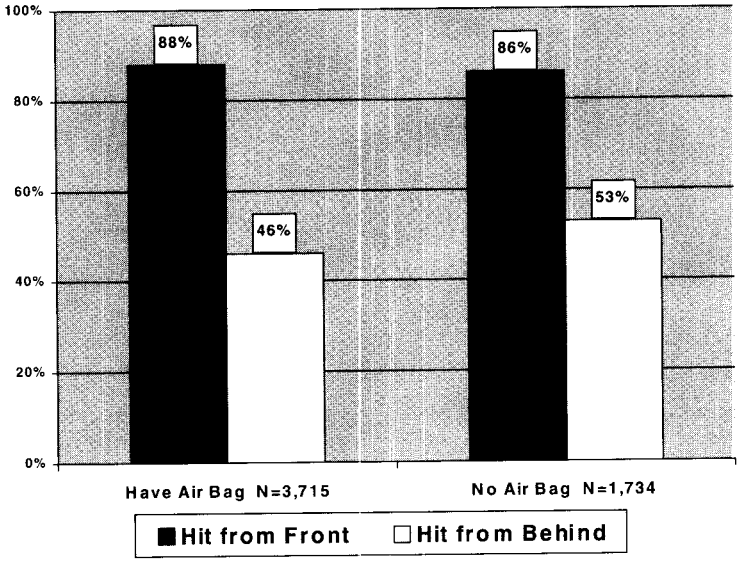
Figure 10
Expect Air Bag to Open When Hit From Front or Behind, 2000



Qx: If a vehicle is hit from the [front, behind] at a moderate speed, would you expect the air bag to open?
Base: Total population age 16+
Unweighted N=6,072

A substantial proportion of drivers with air bag equipped vehicles incorrectly assumed that rear impacts could cause air bags to deploy. Among drivers with air bags in their primary vehicle, 46% thought a rear impact would activate the air bag. By comparison, 53% of drivers whose primary vehicle does not have an air bag thought a rear impact would activate an air bag.

Figure 11
Expect Air Bag to Open When Hit From...?
Primary Vehicle Comparison, 2000



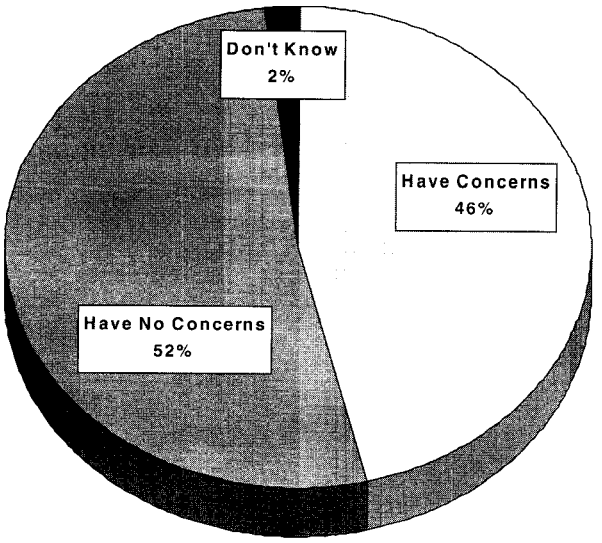
Qx: If a vehicle is hit from the [front, behind] at a moderate speed, would you expect the air bag to open?

Base: Drivers whose primary vehicle is not a motorcycle

Safety Concerns

Even though 82% of the public would prefer an air bag in their next vehicle, many still expressed concerns about air bag safety. In fact, nearly half of respondents (46%) said that they had concerns about air bag safety.

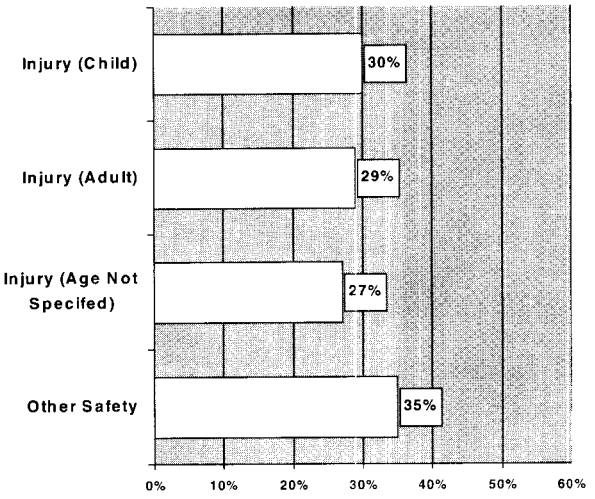
Figure 12
Safety Concerns About Air Bags, 2000



Qx: Do you have any concerns about the safety of air bags?
Base: Total population age 16+
Unweighted N=6,072

Respondents were about equally concerned about injuries from air bags to children (30%) and adults (29%). Others (35%) expressed general concerns about safety of air bags, including mechanical problems.

Figure 13
Types of Safety Concerns
(Of Those Having Concerns), 2000



Qx: Do you have any concerns about the safety of air bags?

Qx: What are those concerns?

Base: Those with concerns about the safety of air bags

Unweighted N=2,820

Table 1 provides a more detailed breakout of the concerns expressed by respondents.

Table 1. Air Bag Concerns, 2000

Item	Percent
Child Injury	**30%**
Injury, Unspecified	18%
Killed	4%
Injury if Placed in Front Seat	7%
Suffocate or Smother	3%
Adult Injury	**29%**
Adults can be Injured	8%
Smaller Adults can be Injured	10%
Suffocating	7%
Adults/Smaller Adults Killed	4%
Other Injury (Age Not Specified)	**27%**
Injuries Due to Speed of Air Bag	5%
Injuries Due to Air Bag Deployment	7%
Injury to Neck	4%
More Injuries With Air Bags Than Without	4%
Broken Bones	3%
Any Other Injury Mention	7%
Other Safety Concerns	**35%**
Rate of Deployment Too Fast	5%
Split and Release Chemicals	6%
Deploys in Minor Accident	2%
Deploys Prematurely (No Accident)	5%
Failure to Deploy	4%
Other Air Bag Safety	17%

Base: Those With Concerns About Air Bag Safety

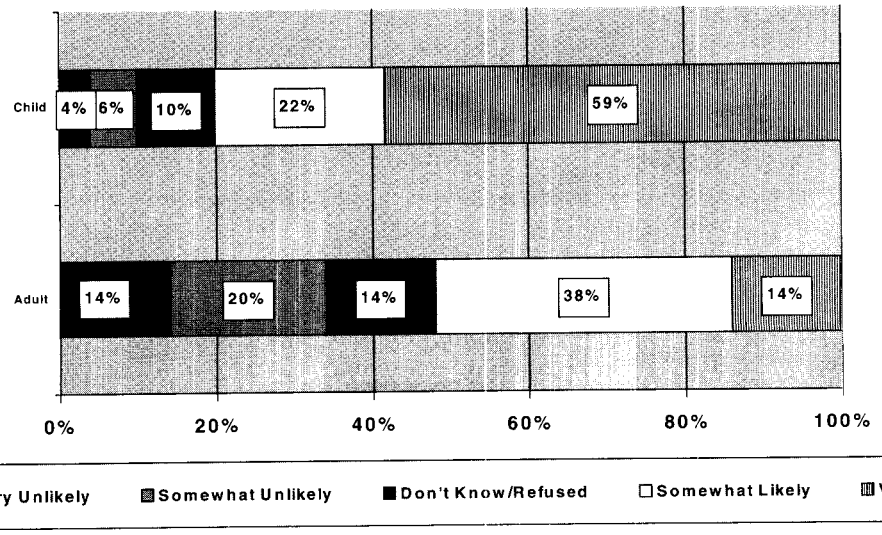
Unweighted N=2,820 Percentages don't total 100% due to multiple responses

Likelihood of Injury: Adult Versus Children

Respondents were asked what they thought was the likelihood that, when an air bag deploys normally: 1) an adult sitting in the front seat would be injured *by* the air bag; and 2) a small child sitting in the front seat would be injured *by* the air bag. Over half (52%) believed it either *somewhat likely* (38%) or *very likely (14%)* that an adult would be injured by an air bag. Thirty-four percent felt it was unlikely that an adult would be injured.

The public viewed children as more susceptible than adults to injury from air bags. The majority (59%) thought that it was *very likely* that a small child would be injured by an air bag. Eight in ten (81%) people believed it was either *somewhat likely* or *very likely* a small child sitting in the front seat would be injured by an air bag deploying normally.

Figure 14
Likelihood of Being Injured By An Air Bag, 2000

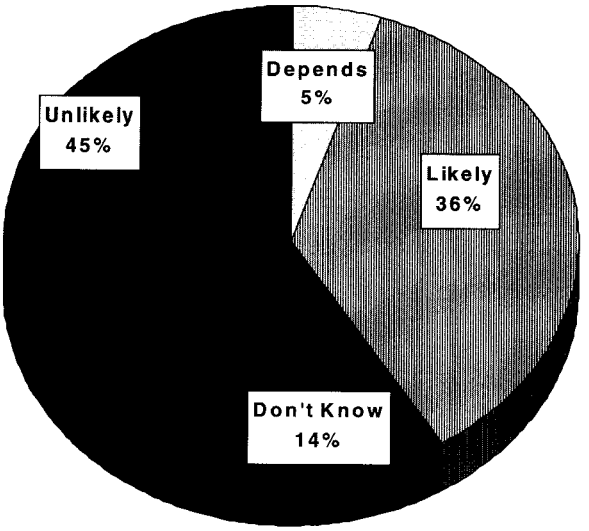


Qx: Based on what you know or have heard, how likely is it that a(n) [adult/small child] sitting in the front seat would be injured by an air bag when it opens normally?
Base: Total population age 16+
Unweighted N=6,049

Likelihood of Injury With Air Bag in Vehicle

Drivers were divided on whether they would be injured in a crash with major vehicle damage while in an air bag equipped vehicle. Nearly half (45%) felt injury was unlikely with air bags; however, more than a third (36%) felt injuries were likely even with air bags. A fairly large proportion said they weren't sure (14%) or it depends (5%).

Figure 15
Likely or Unlikely To Be Injured In Crashes Involving Major Vehicle Damage When Air Bag Is Present, 2000

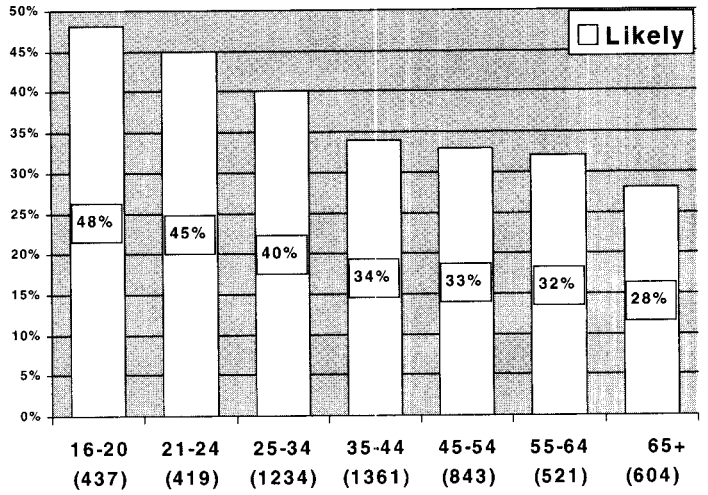


Qx: If you are driving in a vehicle that has an air bag and you get into an accident involving major vehicle damage, is it likely or unlikely that you would be injured?
Base: Drivers whose primary vehicle is not a motorcycle
Unweighted N=5,491

Likelihood of Injury With Air Bag in Vehicle By Age

Youth and young adults were more likely than older drivers to believe they would be injured if they were in a crash in an air bag equipped vehicle. Nearly half of drivers ages 16-20 (48%) believed it is likely they would be injured, with the percentage decreasing steadily for older driver age groups to 28% for drivers 65 and older.

Figure 16
Believe Injury With Air Bag Likely In Crashes Involving Major Vehicle Damage By Age, 2000



Qx: If you are driving in a vehicle that has an air bag and you got into an accident involving major vehicle damage, is it likely or unlikely that you would be injured?
Base: Drivers whose primary vehicle is not a motorcycle
Unweighted N's listed above

This age correlation may be more a function of risky driving behavior than an indication of people's confidence in air bags. The data suggest that those who engage in risky driving behaviors (e.g., speeding, driving and drinking, infrequent seat belt use, etc.) are more likely than those who don't to believe they are vulnerable to injury in a crash involving major vehicle damage while in an air bag equipped vehicle.

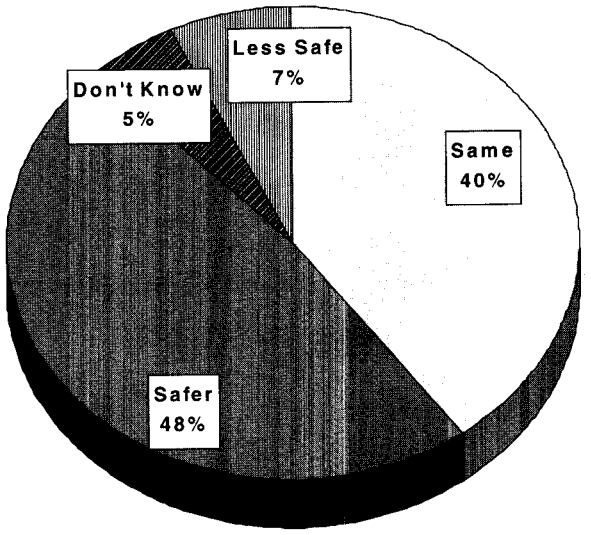
Table 2. Percent Believing Injury Likely In a Crash While In An Air Bag Equipped Vehicle By Driving Behavior, 2000

Driving Behavior	Believe Injury Likely	Unweighted N
Highway Passing		
Others tend to pass me	34%	3,151
I tend to pass others	40%	1,850
Highway Driving Speed		
Less than 55 mph	31%	240
55 mph	33%	777
56-60 mph	36%	845
61-65 mph	33%	1514
Over 65 mph	41%	1949
Drinking and Drivin In Past 30 Days		
No, didn't drink in past 30 days	34%	2,390
No, but did drink in past 30 days	37%	2,263
Yes, drove after drinking in past 30 days	37%	818
Frequency of Seat Belt Use		
All the time	35%	4,587
Most of the time	36%	465
Some of the time	47%	212
Rarely/Never	45%	207

Feeling Safer With Air Bags

All respondents were asked whether they felt safer or less safe in vehicles with air bags. Despite some concerns about air bag safety, the public did not appear to regard air bags as dangerous to them personally. Nearly half (48%) said they felt safer with air bags compared to 7% who said they felt less safe. Forty percent said they felt about as safe with air bags as without them.

Figure 17
Feel Safer, About the Same or Less Safe With Air Bags, 2000



Qx: In general, do you feel safer in motor vehicles with air bags, about the same, or less safe in vehicles with air bags than those without air bags?
Base: Total population age 16+
Unweighted N=6,072

Gender Differences

Safety Concerns By Gender

Females were more likely to be concerned about air bag safety than were males. More than half of females (52%) said they had concerns about air bag safety compared with 40% of all males. More females than males also believed it likely for both adults and small children to be injured by air bags. Females were less likely than males to feel safer in a vehicle with air bags (44% compared to 52%).

Table 3. Safety Concerns By Gender, 2000

Item	Total	Males	Females
Have Concerns About Safety of Air Bags	46%	40%	52%
Likely to Injure Adult	52%	46%	57%
Likely to Injure Small Child	81%	77%	84%
Feels Safer With Air Bags in Vehicle	48%	52%	44%

Qx: Do you have any concerns about the safety of air bags?

Qx: Based on what you know or have heard, how likely is it that an adult sitting in the front seat would be injured by an air bag when it opens normally?

Qx: Based on what you know or have heard, how likely is it that a small child sitting in the front seat would be injured by an air bag when it opens normally?

Qx: In general, do you feel safer in motor vehicles with air bags, about the same, or less safe in vehicles with air bags than those without air bags?

Base: Total population age 16+

Unweighted N=6,049

Knowledge of Air Bag Functionality By Gender

Females were generally less knowledgeable about how air bags function than were males. About one in five (*19%) females thought that air bags deployed at speeds of 20 MPH or less compared to nearly half (*43%) males. Nearly two fifths (38%) of females said they "don't know" what the minimum impact speed for an air bag to deploy is, compared to one-fifth (21%) of males.

Fewer females (83%) than males (89%) said their air bags would open if their vehicle was hit at a moderate speed from the front. The majority of females (53%) thought that air bags would deploy if their vehicle was hit from behind, compared to 46% of males.

Table 4. Knowledge Of Air Bag Functionality By Gender, 2000

Item	Total	Males	Females
Minimum Speed of Impact For Air Bag to Open:			
10 MPH or less	13%	19%	8%
11-20 MPH	17%	23%	12%
21-30 MPH	19%	20%	18%
31-40 MPH	13%	11%	14%
41 MPH and Over	8%	5%	11%
Don't Know/Refused	30%	21%	38%
Expect Air Bag To Open If Hit At Moderate Speed From...?			
Front	86%	89%	83%
Behind	50%	46%	53%

Qx: If a vehicle is hit from the [front, behind] at a moderate speed, would you expect the air bag to open?

Qx: Based on what you know or have heard, what is the minimum speed a vehicle would have to be hit in order for an air bag to open up?

Base: Total population age 16+

Unweighted N=6,072

** The number does not equal the sum of the components in the Figure due to rounding.*

Car Seats

A number of well-publicized injuries involving air bags have occurred to children sitting in the vehicle's front seat. In some cases, the injuries involved small children in car seats. Therefore, it is important to know where adults who drive with children place child car seats and whether this is affected by the presence of air bags.

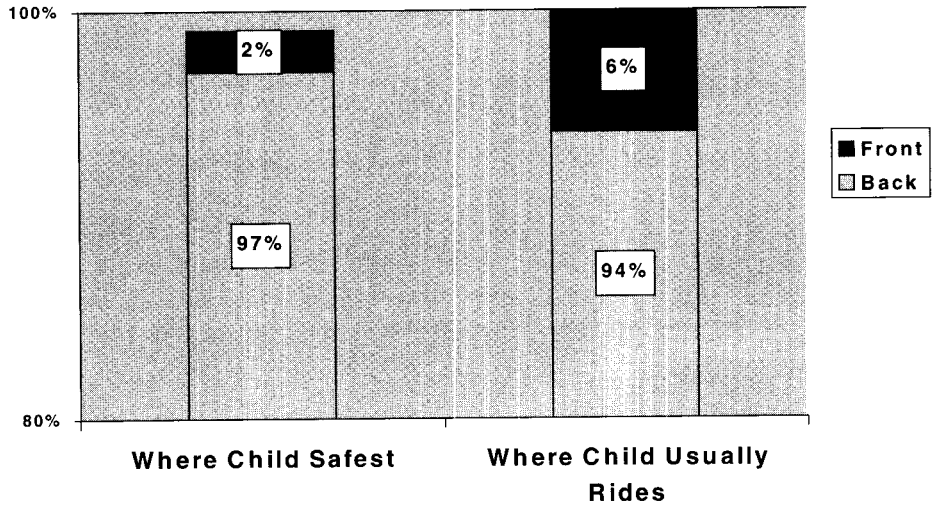
The 2000 Motor Vehicle Occupant Safety Survey asked a detailed set of child car seat questions to a subgroup in the sample for whom car seat issues were deemed especially relevant. These were parents of children under age 9, regardless of whether they were living with the child, and non-parents living with children under age 9 who at least sometimes drove with those children. For each of these respondents, a specific child was selected as a referent about whom questions were asked. In households where multiple children were eligible as referents, the interviewers randomly selected one child. If the child at least sometimes rode in a car seat, an extensive series of questions about car seat use was asked for that child.

The following three pages present selected findings from this series of questions on car seats that relate to the air bag issue.

Placement of Child Car Seat

The overwhelming majority (97%) of this parent/caregiver subsample knew that the back seat is the safest part of the vehicle to place a child's car seat. Only 2% felt that the front seat was the safest place for a child car seat. Nonetheless, six percent still usually placed the child in the front seat when they drove.

Figure 18
Placement of Child Car Seat, 2000



Qx: When you are driving and the (AGE) rides in the child car seat, is (he/she) usually in the front seat or the back seat?

Qx: Where would you say it is safest to place a child car seat in the vehicle...in the front seat or in the back seat?

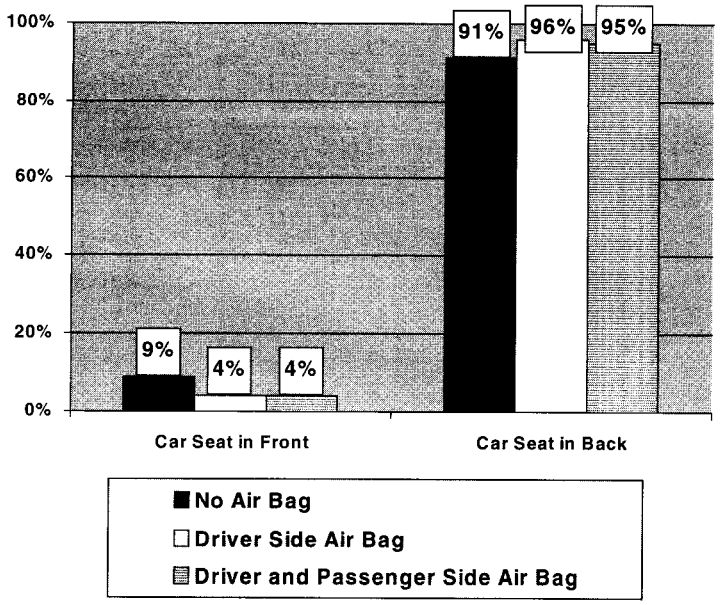
Base: Child at least sometimes rides in car seat

Unweighted N=779

Placement of Child Car Seat In Vehicles With Air Bags

Children are safer when placed in the back seat, especially if the vehicle has passenger side air bags. Children riding in the front seat can be seriously injured or killed when an air bag comes out in a crash. The respondents were more likely to place car seats in the front seat if their primary vehicle didn't have an air bag. About 4% of those having air bags said they usually place the car seat in the front seat. By contrast, 9% of those without any air bags said they put the car seat in the front.

Figure 19
Placement of Child Car Seat
By Primary Vehicle Comparison, 2000

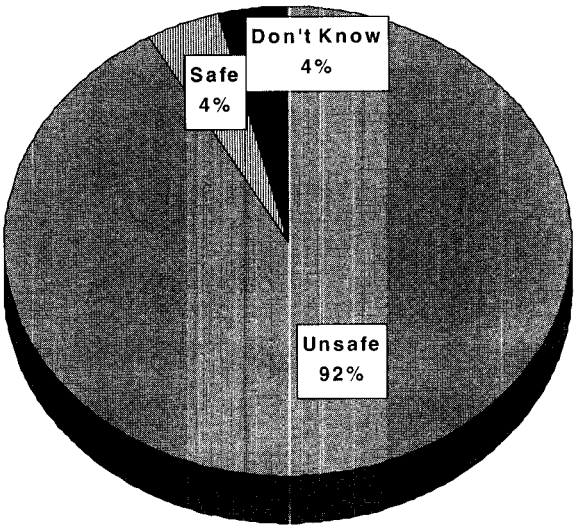


Qx: When you are driving and the (AGE) rides in the child car seat, is (he/she) usually in the front seat or the back seat?
Base: Child at least sometimes rides in car seat
Unweighted N=779

Rear-Facing Child Car Seats In Vehicles With Air Bags

This parent/caregiver subsample was asked if they thought it was safe to place a rear-facing car seat in the front seat of a vehicle having passenger-side air bags. **The correct answer is no, because it could place the child in the air bag's path, with the force of impact being too great for the child.** While most (92%) said it was unsafe, 4% believed it was safe, and 4% said they weren't sure.

Figure 20
Safety of Child in Front With Air Bag When Child Car Seat is Facing Backward, 2000



Qx. Some child car seats are designed so that the child faces backward, to the rear of the motor vehicle. Suppose a child is riding in a child car seat facing backward...if the vehicle has a passenger side air bag, is it safe or unsafe to have the child car seat in the front seat?

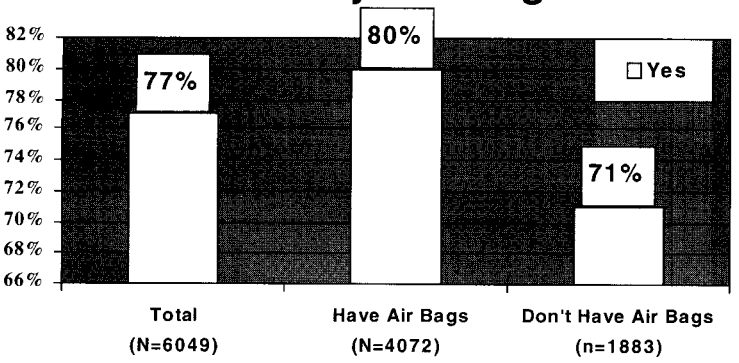
Base: Child at least sometimes rides in car seat

Unweighted N=779

Air Bag Safety Warnings

All respondents were asked if they had ever heard or seen any safety warnings about air bags. More than three-quarters (77%) had heard or seen safety warnings. Those respondents were asked specifically what warnings they had heard or seen. The most common warnings were: the back seat is safest for children (34%), air bags can kill children (20%), never put a rear facing child seat in front (13%), sit as far back from air bag as possible (12%), air bags can cause injury or suffocation in children and small adults (7%), and air bags can cause injury or suffocation without reference to age or size (7%).

Figure 21
Have Heard or Seen Safety Warnings about Air Bags, 2000



Qx: Have you heard or seen any safety warnings about air bags? Base: Total Population 16+

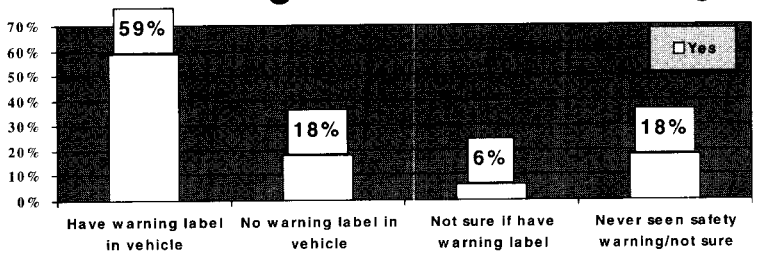
Table 5. Safety Warnings Heard and Seen, 2000

Safety Warnings	Total	Have Air Bags	Don't Have Air Bags
Back seat is safest for children	34%	35%	33%
Air bags can kill children	20%	19%	20%
Never put a rear facing child seat in front	13%	13%	11%
Sit as far back from air bag as possible	12%	13%	8%
Can cause injury/suffocation in children/small adults	7%	7%	8%
Can cause injury/can cause suffocation (unspec)	7%	7%	7%

Qx: What safety warnings about air bags have you heard or seen?
Base: Heard/Seen safety warnings about air bags
Unweighted N=4763

More than half (59%) of drivers who had an air bag in their primary vehicle reported that the vehicle had a warning label about air bags. Those who had a warning label in their primary vehicle most often reported that the warning label was located on the sun visor (82%). Other locations for safety warnings about air bags included the dashboard (11%), owner's manual (4%), glove compartment (3%), steering wheel (1%), and inside the door or on the door panel (1%). Two percent reported other locations, while three percent could not or would not say where the warning labels were located.

Figure 22
Have Warning Labels About Air Bags, 2000



Qx: Are there any warning labels about air bags in the (car/truck/van) you normally drive?

Qx: Have you heard or seen any safety warnings about air bags?

Base: Drivers whose primary vehicle (not motorcycle) has an air bag Unweighted N=3,824

Table 6. Location of Warning Labels on Primary Vehicle, 2000

Item	Total
Sun visor	82%
Dashboard	11%
Owner's manual	4%
Glove compartment	3%
Steering wheel	1%
Inside door/door panel	1%
Other	2%
Don't know	3%

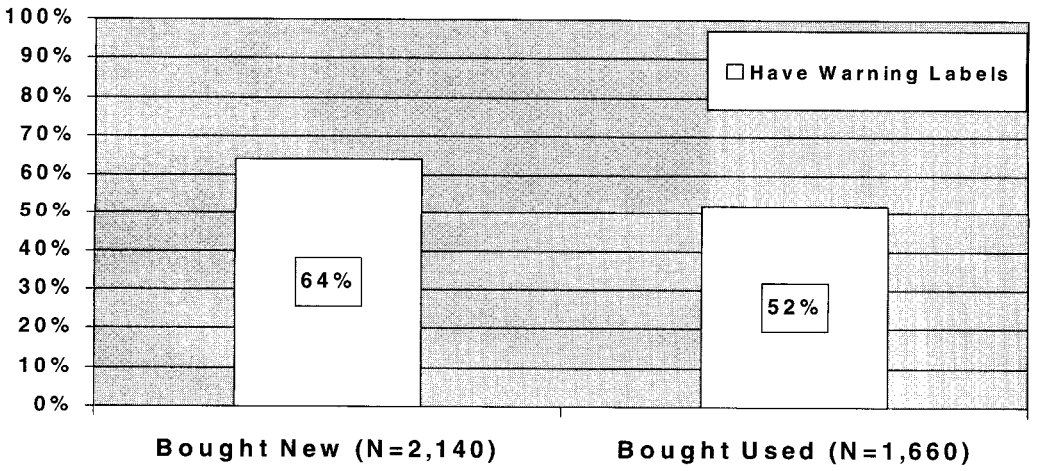
Qx: Where in the vehicle are the warning labels?

Base: Drivers who have a safety warning label about air bags in their air bag equipped vehicle

Unweighted N=2,327

Among drivers with air bags in their primary vehicles, 64% report warning labels in vehicles purchased new, compared to 52% of those purchased used.

Figure 23
Have Warning Labels for Air Bags By New/Used Vehicle, 2000



Qx: Have you heard or seen any safety warnings about air bags?
Qx: Are there any warning labels about air bags in the (car/truck/van) you normally drive?
Qx: When you got the (car/truck/van) did you get it new or used?
Base: Drivers whose primary vehicle (not motorcycle) has an air bag

SECTION 2

TRENDS

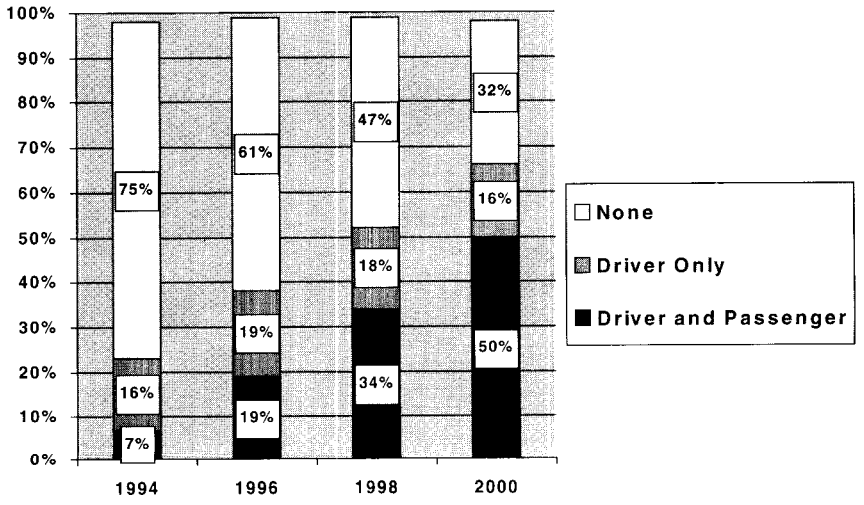
1994 – 2000

2000 Motor Vehicle Occupant Safety Survey: Air Bags

Prevalence of Air Bags, 1994-2000

The percentage of drivers reporting air bags in their primary vehicles has continued to increase. In 2000, *67% reported air bags in their primary vehicle compared to *53% in late 1998. This continues a pattern of steady increase since the first survey in 1994, when the percentage of drivers reporting air bags was only 24%. Since 1998 the largest increase came in the percentage of vehicles with both driver and passenger side air bags, increasing from 34% to 50% over this period of time. In contrast, the percentage of vehicles with driver side only air bags decreased two percentage points, from 18% to 16%.

Figure 24
Air Bags in Primary Vehicle, 1994-2000



Qx: Does the (vehicle) you normally drive have an air bag?

Qx: Is the air bag for the driver only or is there also an air bag for the front seat passenger?

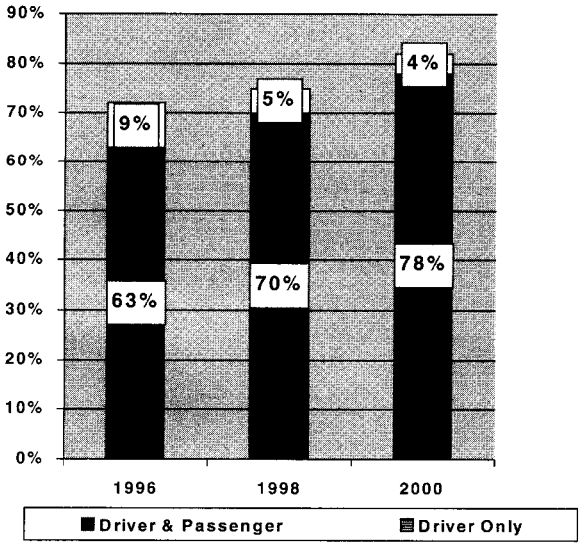
Base: Drivers whose primary vehicle is not a motorcycle

This includes the 1% not shown in Figure 24 who said they had an air bag, but could not identify the type.

Air Bag Demand, 1996-2000

The proportion of drivers who prefer that their next vehicle have air bags increases steadily from 72% in 1996 and 75% in 1998 to 82% in 2000. Preference for both driver and passenger side air bags also increases steadily from 63% in 1996 to 78% in 2000.

Figure 25
Prefer Air Bags On Next Vehicle, 1996 to 2000

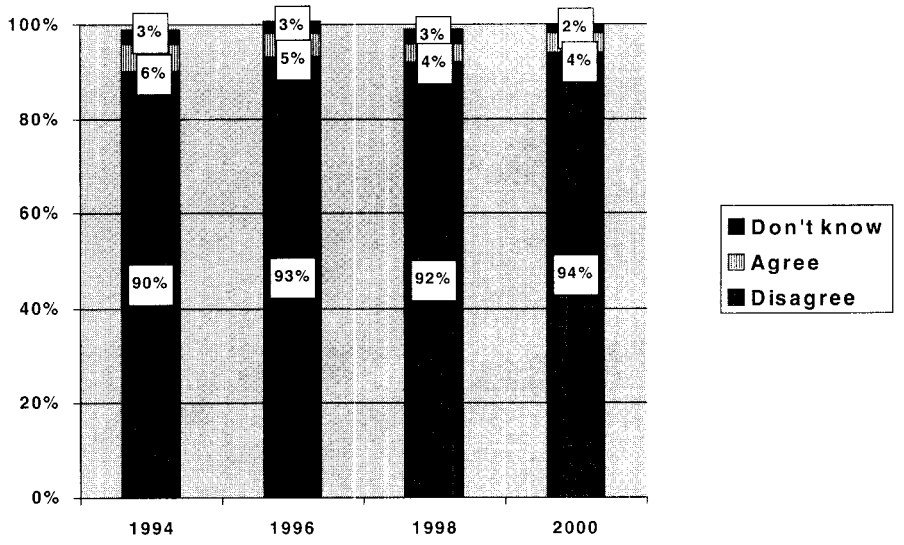


Qx: Would you prefer that your next vehicle have driver air bags only, driver and passenger air bags, or no air bags??
Base: Total Population Age 16+

Air Bags and Seat Belt Use, 1994-2000

The proportion of respondents who did not view air bags as a substitute for seat belts increased slightly. In 1994, 90% disagreed with the statement "If my car has an air bag, I don't need to wear my seat belt when driving/riding" slightly increasing to 93% in 1996. Since 1996 the proportion of drivers who disagree with the statement has stayed about the same (92% in 1998 and 94% in 2000).

Figure 26
Agree Or Disagree: Seat Belt Unnecessary When Air Bag is Present, 1994-2000



Qx: Please tell me if you agree or disagree with the following statement: "If my car has a (driver/passenger) side air bag, I don't need to wear my seat belt when (driving/riding)."?

Base: Total population age 16+

The data shows an increasing trend from 1994 to 2000 among both drivers and non-drivers in understanding that safety belts should still be used when the vehicle has an air bag. Since 1994, more than nine out of ten drivers have consistently disagreed with the statement that seat belts were unnecessary with air bags. By contrast, only 71% of non-drivers disagreed with the statement in 1994, compared to 79%-89% who disagreed with it from 1996-2000.

Table 7. Agree Or Disagree: Seat Belt Is Unnecessary With Air Bag Drivers vs. Non-drivers, 1994-2000

Driver					Non-driver				
If my car has an air bag, I don't need to wear my seat belt	**1994**	**1996**	**1998**	**2000**	**If my car has an air bag, I don't need to wear my seat belt**	**1994**	**1996**	**1998**	**2000**
Agree	6%	4%	4%	4%	Agree	14%	12%	8%	6%
Disagree	92%	94%	94%	95%	Disagree	71%	79%	82%	89%
Don't Know	2%	2%	2%	2%	Don't Know	15%	9%	11%	4%

Qx: Please tell me if you agree or disagree with the following statement: "If my car has a (driver/passenger) side air bag, I don't need to wear my seat belt when (driving/riding)."

Base: Total population age 16+

As in 1998, those with air bags in their primary vehicle were slightly more likely to know that air bags do not eliminate the need for seat belts. Ninety-six percent of those with air bags in 2000 disagreed with the statement "If my car has a driver side air bag, I don't need to wear my seat belt when driving" compared with 93% of those without air bags in the primary vehicle. Correct understanding of the need for a seat belt even with air bags has remained largely unchanged from 1994 to 2000.

Table 8. Agree Or Disagree: Seat Belt Is Unnecessary When Air Bag is Present Primary Vehicle Comparison, 1994-2000

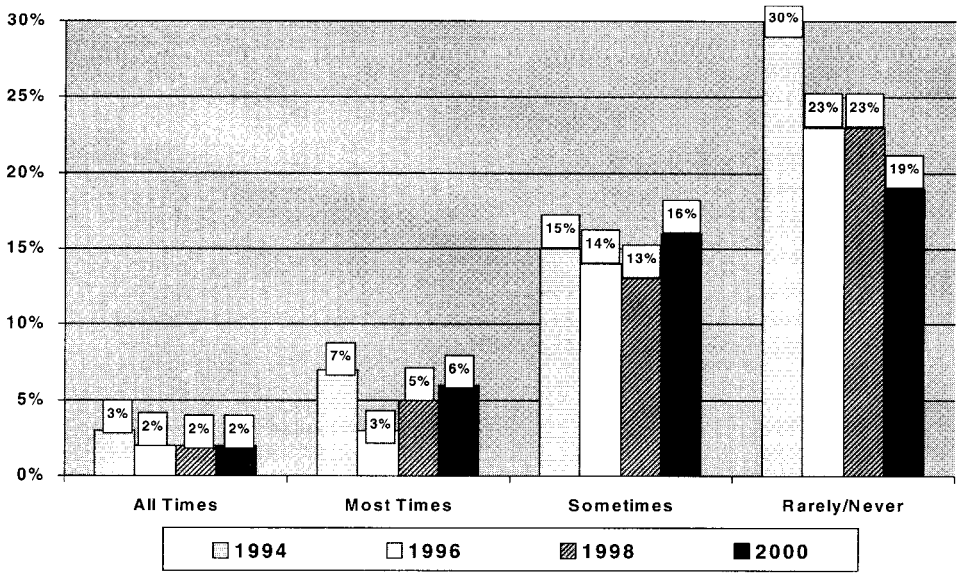
Have Air Bag					Don't Have Air Bag				
If my car has an air bag, I don't need to wear my seat belt	1994	1996	1998	2000	If my car has an air bag, I don't need to wear my seat belt	1994	1996	1998	2000
Agree	4%	2%	3%	3%	Agree	6%	5%	4%	4%
Disagree	96%	97%	95%	96%	Disagree	91%	92%	92%	93%
Don't Know	0%	1%	1%	1%	Don't Know	3%	3%	4%	3%

Qx: Please tell me if you agree or disagree with the following statement: "If my car has a (driver/passenger) side air bag, I don't need to wear my seat belt when (driving/riding)."

Base: Drivers whose primary vehicle is not a motorcycle

For those respondents who report using their seat belt all or most of the time, there was no significant change, from 1998 to 2000, in the proportion of people who agreed with the statement, "If my car has a driver side air bag, I don't need to wear my seat belt when driving." For those who reported using seat belts only sometimes the proportion that agreed with the statement increased slightly (13% to 16%). The biggest change occurred among infrequent (rarely or never) seat belt users. In 1998, 23% of infrequent belt users were more likely to disregard the importance of seat belts if a car has air bags, compared with only 19% in 2000. Moreover, this proportion has declined from 30% in 1994 to 19% in 2000.

Figure 27
Believe Seat Belt Unnecessary With Air Bag By Belt Use, 1994-2000



Qx: Please tell me if you agree or disagree with the following statement: "If my car has a (driver/passenger) side air bag, I don't need to wear my seat belt when (driving/riding)."?

Base: Drivers whose primary vehicle is not a motorcycle

Drivers with air bags continued to be more likely to use their seat belts than were those without air bags in their primary vehicle. In 2000, 85% of drivers with air bags reported that they used their seat belts all the time and 8% most of the time. By comparison, 80% of drivers whose primary vehicle did not have an air bag said they used their seat belt all the time with an additional 10% using their belt most of the time.

Table 9. Frequency of Driver Seat Belt Use By Whether Vehicle Has Air Bag, 1994-2000

	Have Air Bag					Don't Have Air Bag			
Frequency of Seat Belt Use	1994	1996	1998	2000	Frequency of Seat Belt Use	1994	1996	1998	2000
All Times	82%	80%	82%	85%	All Times	72%	74%	75%	80%
Most Times	10%	11%	11%	8%	Most Times	14%	13%	13%	10%
Sometimes	4%	5%	4%	3%	Sometimes	7%	6%	6%	4%
Rarely/Never	4%	4%	4%	3%	Rarely/Never	8%	6%	7%	5%

Qx: Does the vehicle you normally drive have an air bag

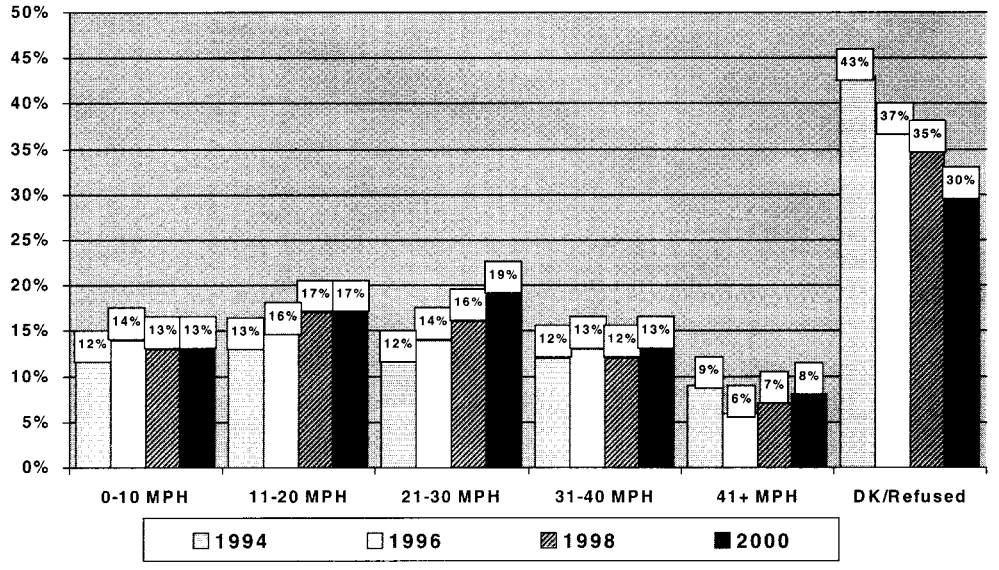
Base: Drivers whose primary vehicle is not a motorcycle

Minimum Impact Speed for Air Bag Deployment, 1994-2000

As was the case in 1998, public knowledge appears to be divided about the minimum speed at which air bags deploy.

Similar to 1998's results, the estimates of crash speed for air bag deployment were spread fairly evenly across a wide range of speeds. Clustering the ranges by 10 mph increments, 13% said 0-10 mph, 17% said 11-20 mph, 19% said 21-30 mph, and 13% said 31-40 mph. However, respondents continue to be slightly more likely to estimate a speed than they were two years ago. In 2000, 30% said they didn't know (or refused to say) compared to 35% in 1998. This proportion that say they don't know (or refused to say) has continued to decline from 43% in 1994 to 30% in 2000.

Figure 28
Estimated Minimum Impact Speed For Air Bag to Deploy (10 Mile Increments), 1994-2000

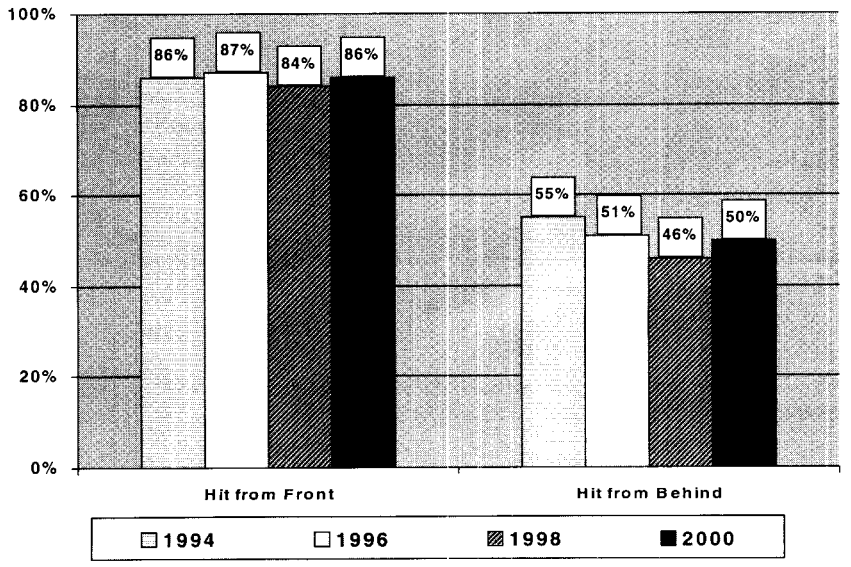


Qx: Based on what you know or have heard, what is the minimum speed a vehicle would have to be hit in order for an air bag to open up?
Base: Total population age 16+

Location of Impact and Air Bag Deployment, 1994-2000

The proportion of the public that expects air bags to open if a vehicle is hit from the front at a moderate speed is slightly higher in 2000 (86%) than in 1998 (84%). At the same time, the proportion of the public that incorrectly believes that air bags would open if a vehicle was hit from behind has also increased between 1998 (46%) and 2000 (50%).

Figure 29
Expect Air Bag to Open When Hit From Front or Behind, 1994-2000



Qx: If a vehicle is hit from the [front, behind] at a moderate speed, would you expect the air bag to open??

Base: Total population age 16+

The percentages of drivers assuming that rear impacts can cause air bags to deploy have not changed dramatically in the past six years. Drivers who did not have air bags continue to be more likely than drivers with air bags to believe that an air bag would deploy from rear impacts.

Table 10. Expectations Concerning Air Bag Deployment: Front and Rear Impacts, Primary Vehicle Comparison, 1994-2000

% Saying Air Bag Would Open									
Have Air Bag	1994	1996	1998	2000	Don't Have Air Bag	1994	1996	1998	2000
Front	87%	88%	85%	88%	Front	87%	89%	86%	86%
Behind	46%	43%	41%	46%	Behind	57%	55%	51%	53%

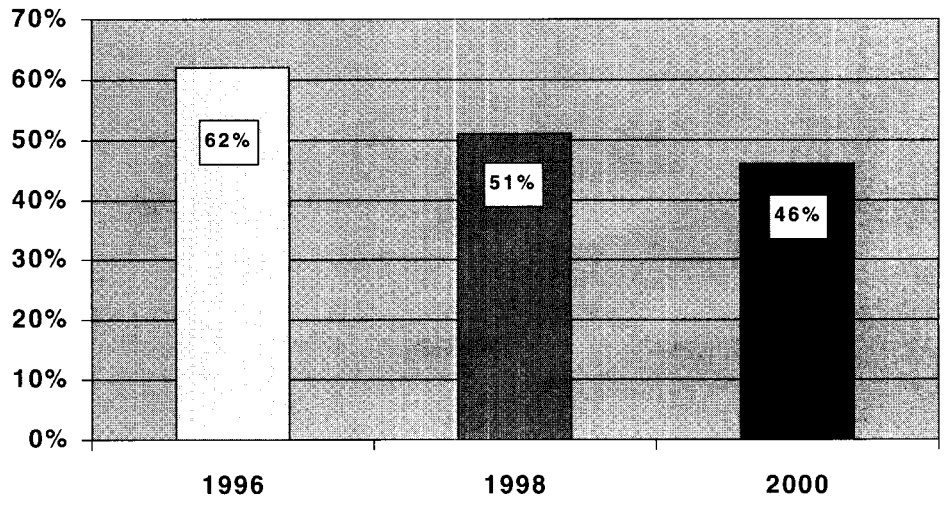
Qx: If a vehicle is hit from the (front, behind) at a moderate speed, would you expect the air bag to open?

Base: Drivers whose primary vehicle is not a motorcycle

Safety Concerns, 1996-2000

Although nearly half of the public still expresses concerns about the safety of air bags (46%), this proportion has steadily declined from 62% with concerns in 1996 and 51% in 1998.

Figure 30
Have Safety Concerns About Air Bags, 1996-2000



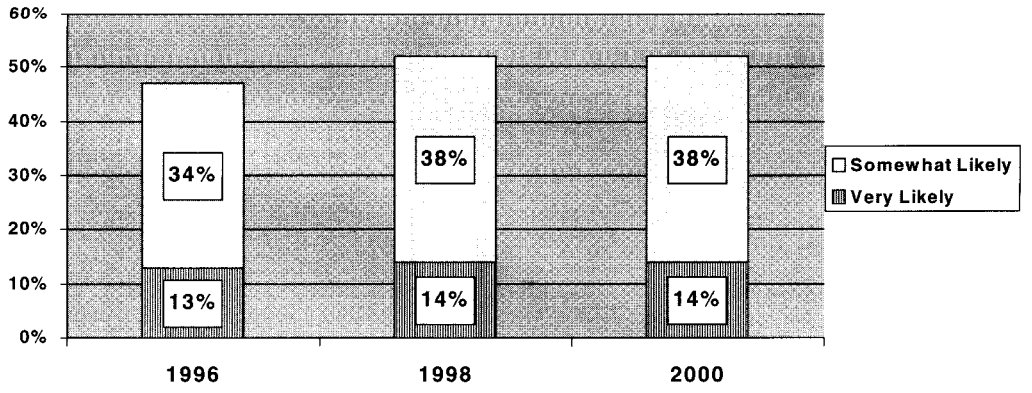
Qx: Do you have any concerns about the safety of air bags?

Base: Total population age 16+

Likelihood of Injury to Adult from Air Bag, 1996-2000

In 2000, over half (52% of the public believed it either somewhat likely (38%) or very likely (14%) that an adult would be injured by an air bag when it deploys normally. This proportion remains unchanged from 1998 and is only slightly higher than 1996 (34% said somewhat likely and 13% said very likely).

Figure 31
Likelihood of Adult Being Injured By An Air Bag, 1996-2000

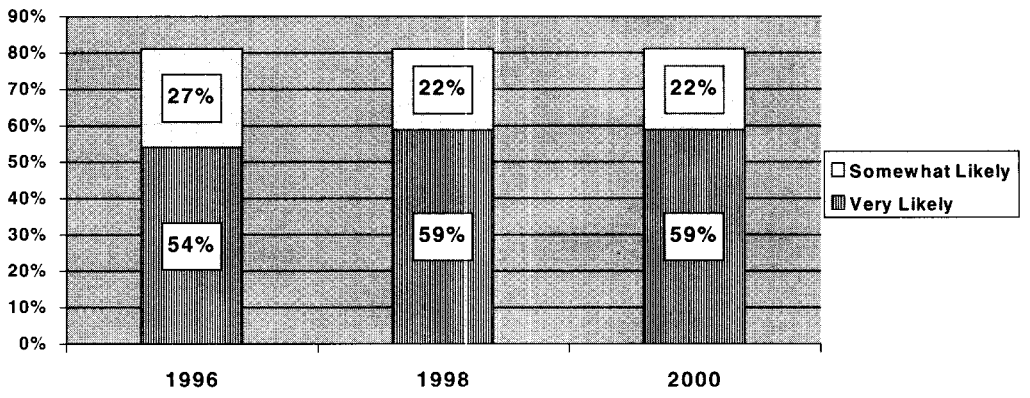


Qx: Based on what you know or have heard, how likely is it that an adult sitting in the front seat would be injured by an air bag when it opens normally?
Base: Total population age 16+

Likelihood of Injury to Child from Air Bag, 1996-2000

The proportion of the public that thought it was very likely (59%) or somewhat likely (22%) that a small child sitting in the front seat would be injured by an air bag when it deploys normally remains unchanged from 1998 to 2000. The combined very and somewhat likely percentages were also the same in 1996 (81%), but those who said very likely increased from 54% in 1996 to 59% in 2000.

Figure 32
Likelihood of Child Being Injured By An Air Bag, 1996-2000

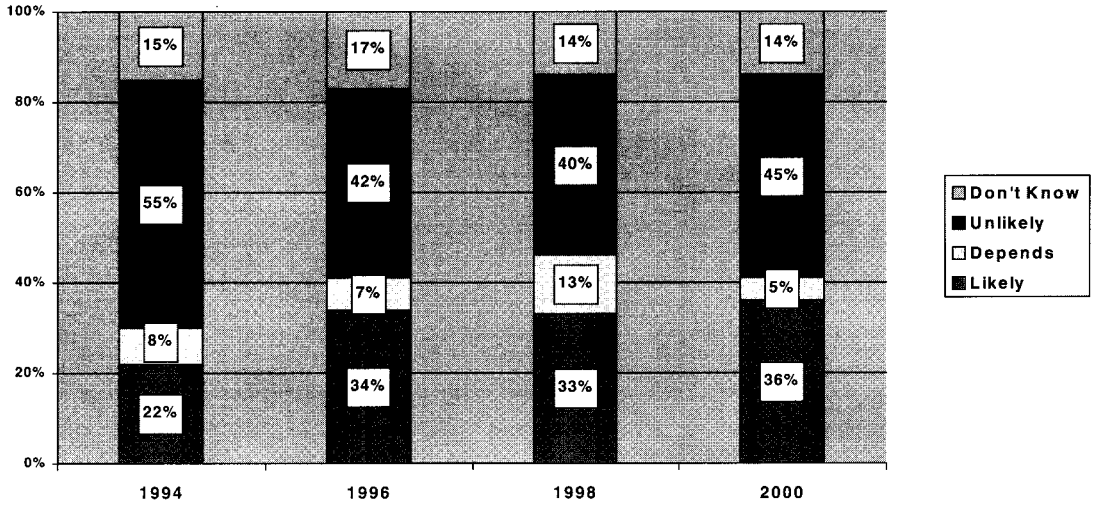


Qx: Based on what you know or have heard, how likely is it that a small child sitting in the front seat would be injured by an air bag when it opens normally?
Base: Total population age 16+

Likelihood of Injury With Air Bag in Accident Involving Major Vehicle Damage, 1994-2000

In 2000, 45% of drivers felt an injury was unlikely in an accident involving major vehicle damaged in an air bag equipped vehicle, a 5 percent increase from two years earlier. At the same time, 36% felt an injury was likely in such an accident in 2000, up from 33% in 1998. The proportion that said, "it depends" declined from 13% in 1998 to 5% in 2000. Looking at the trend since 1994, the percentage of drivers who consider an injury likely with air bags in an accident involving major vehicle damage remains higher in 2000 (36%) than it was in 1994 (22%), while the proportion who feel injury would be unlikely has declined (55%-45%) has declined over the same period.

Figure 33
Likelihood of Being Injured By Air Bag In Crash With Major Vehicle Damage, 1994-2000

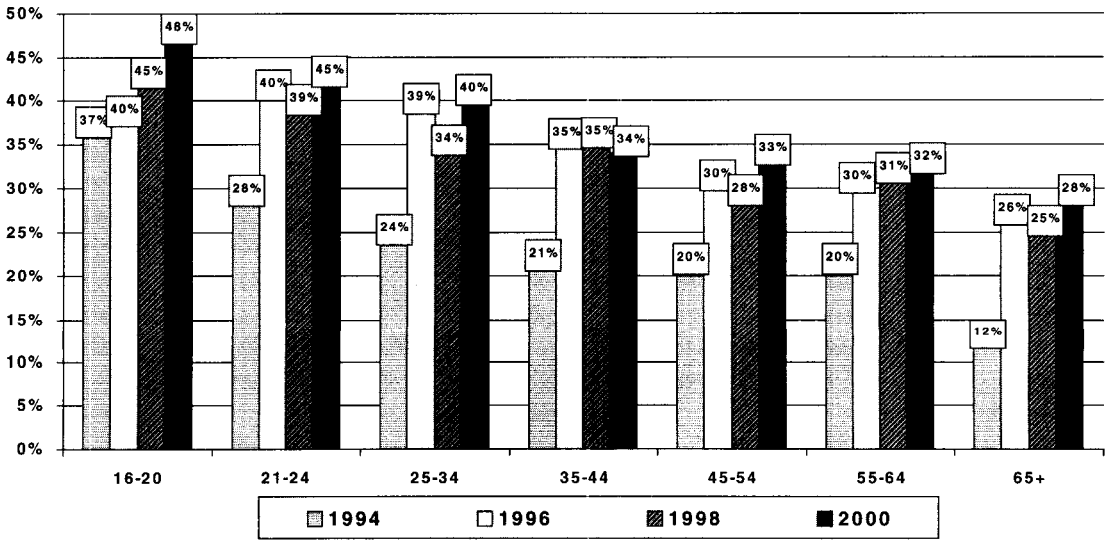


Qx: If you are driving in a vehicle that has an air bag and you get into an accident involving major vehicle damage, is it likely or unlikely that you would be injured?
Base: Drivers

As in previous years, younger drivers in 2000 were more likely than older adults to believe they would be injured if they had a serious crash in an air bag equipped vehicle. The largest increases from 1998 were for 21-24 and 25-34 year olds.

All age groups showed increases in believing they would be hurt in a serious crash even with air bags across the past 6 years. In 1994, only 12% thought injury likely in the 65+ age group. In 2000, this figure rose to 28 percent. Likewise, 37% of drivers 16-20 years old thought injury likely in 1994, while 48% thought this was the case in 2000.

Figure 34
Believe Injury with Air Bag Likely In Crash With Major Vehicle Damage By Age, 1994-2000



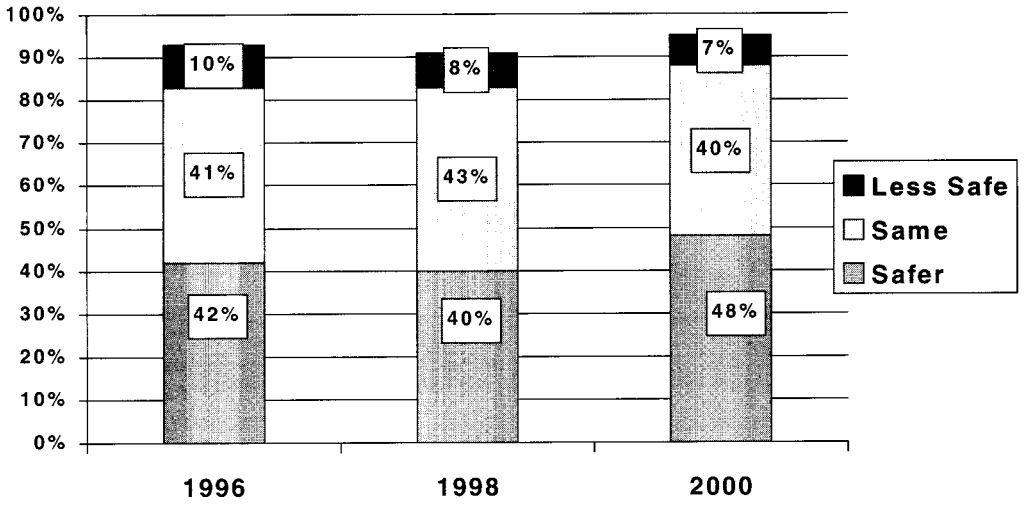
Qx: If you are driving in a vehicle that has an air bag and you get into an accident involving major vehicle damage, is it likely or unlikely that you would be injured?

Base: Drivers

Feeling Safer With Air Bags, 1996-2000

There has been no change in the past two years in the perception of a majority of adults that a small child in the front seat is very likely to be injured, and an adult is at least somewhat likely to be injured, by an air bag when it opens normally. However, despite this recognition of the risks associated with air bags, the public feels safer with air bags than they did two years ago. The proportion of the public who say they feel safer in motor vehicles with air bags has increased from 40% in 1998 to 48% in 2000.

Figure 35
Feel Safer, About the Same, or Less Safe With Air Bags, 1996-2000



Qx: In general, do you feel safer in motor vehicles with air bags, about the same, or less safe in vehicles with air bags than those without air bags?
Base: Total population age 16+

CONCLUSIONS

In 1996 there were several well-publicized events about air bag related fatalities involving small children. These events seem to have had a long-term impact on the public's perception of air bag safety and effectiveness between 1994 and 2000. Not surprisingly, most of the concerns about air bag safety focus on their potentially harmful effects on children.

The public still does not fully understand how air bags function. For example, a large percentage of air bag owners believe air bags will deploy when impact is from behind. Also, there is no consensus on what speed a car must be going in order for the air bag to deploy.

Despite the concerns about their safety, air bags still possess broad public support. The proportion of primary vehicles with air bags continues to increase. Most consumers said they would like their next vehicle to have air bags on both the driver's and passenger's side. Only a small percentage regards vehicles with air bags as less safe to them personally than vehicles without air bags. It appears that most of the public wants the added safety that air bags potentially offer.

The public does not regard air bags as a substitute for seat belts; in fact, the presence of air bags in vehicles has not caused a decline in seat belt usage. On the contrary, those with air bags in their primary vehicles are more likely than those without air bags to wear their seat belts. So despite concerns about their safety, the public still favors air bags.

APPENDIX A

PRECISION OF SAMPLING ESTIMATES

Precision of Sample Estimates

The objective of the sampling procedures used on this study was to produce a random sample of the target population. A random sample shares the same properties and characteristics of the total population from which it is drawn, subject to a certain level of sampling error. This means that with a properly drawn sample we can make statements about the properties and characteristics of the total population within certain specified limits of certainty and sampling variability.

The confidence interval for sample estimates of population proportions, using simple random sampling without replacement, is calculated by the following formula:

$$\text{var}(x) = z\sqrt{[(p*q)/(n-1)]}$$

Where:

var (x)	=	the expected sampling error of the mean of some variable, expressed as a proportion
p	=	some proportion of the sample displaying a certain characteristic or attribute
q	=	(1 - p)
z	=	the standardized normal variable, given a specified confidence level (1.96 for samples of this size).
n	=	the size of the sample

The sample sizes for the surveys are large enough to permit estimates for subsamples of particular interest. Table 5, on the next page, presents the expected size of the sampling error for specified sample sizes of 8,000 and less, at different response distributions on a categorical variable. As the table shows, larger samples produce smaller expected sampling variances, but there is a constantly declining marginal utility of variance reduction per sample size increase.

TABLE 5
Expected Sampling Error (Plus or Minus)
At the 95% Confidence Level
(Simple Random Sample)

Size of Sample or Subsample	Percentage of the Sample or Subsample Giving A Certain Response or Displaying a Certain Characteristic for Percentages Near:				
	10 or 90	**20 or 80**	**30 or 70**	**40 or 60**	**50**
8,000	0.7	0.9	1.0	1.1	1.1
6,000	0.8	1.0	1.2	1.2	1.3
4,500	0.9	1.2	1.3	1.4	1.5
4,000	0.9	1.2	1.4	1.5	1.5
3,000	1.1	1.4	1.6	1.8	1.8
2,000	1.3	1.8	2.0	2.1	2.2
1,500	1.5	2.0	2.3	2.5	2.5
1,300	1.6	2.2	2.5	2.7	2.7
1,200	1.7	2.3	2.6	2.8	2.8
1,100	1.8	2.4	2.7	2.9	3.0
1,000	1.9	2.5	2.8	3.0	3.1
900	2.0	2.6	3.0	3.2	3.3
800	2.1	2.8	3.2	3.4	3.5
700	2.2	3.0	3.4	3.6	3.7
600	2.4	3.2	3.7	3.9	4.0
500	2.6	3.5	4.0	4.3	4.4
400	2.9	3.9	4.5	4.8	4.9
300	3.4	4.5	5.2	5.6	5.7
200	4.2	5.6	6.4	6.8	6.9
150	4.8	6.4	7.4	7.9	8.0
100	5.9	7.9	9.0	9.7	9.8
75	6.8	9.1	10.4	11.2	11.4
50	8.4	11.2	12.8	13.7	14.0

NOTE: Entries are expressed as percentage points (+ or -)

However, the sampling design for this study included a separate, concurrently administered oversample of youth and young adults (age 16-39). Both the cross-sectional sample and the oversample of the youth/younger adult population were drawn as simple random samples; however, the disproportionate sampling of the age 16-39 population introduces a design effect that makes it inappropriate to assume that the sampling error for total sample estimates will be identical to those of a simple random sample.

In order to calculate a specific interval for estimates from a sample, the appropriate statistical formula for calculating the allowance for sampling error (at a 95% confidence interval) in a stratified sample with a disproportionate design is:

$$ASE = 1.96 \sqrt{\sum_{h^{1-g}}^{g} [W_h^2 \{(1-f_h)(s^2_h/n_h - 1)\}]}$$

where:

ASE	=	allowance for sampling error at the 95% confidence level;
h	=	a sample stratum;
g	=	number of sample strata;
W_h	=	stratum h as a proportion of total population;
f_h	=	the sampling fraction for group h -- the number in the sample divided by the number in the universe;
s^2_h	=	the variance in the stratum h -- for proportions this is equal to p_h (1.0 - p_h);
n_h	=	the sample size for the stratum h.

Although Table 5 above provides a useful approximation of the magnitude of expected sampling error, precise calculation of allowances for sampling error requires the use of this formula. To assess the design effect for sample estimates, we calculated sampling errors for the disproportionate sample for a number of key variables using the above formula. These estimates were then compared to the sampling errors for the same variables, assuming a simple random sample of the same size. The two strata (h^1 and h^2) in the disproportionate sample were all respondents age 16-39 and all respondents age 40 and over respectively. The proportion for the 16-39 year old stratum (w^1) was 44.3 percent while the proportion for the 40 and over stratum (w^2) was 55.7 percent.

As shown in Table 6, the disproportionate sampling decreases the confidence interval by 1.3 percent, compared to a simple random sample of the same size. This means the sample design slightly increases the sampling precision for total population estimates, while also increasing the precision of sampling estimates for the target population aged 16-39 years old. Since the difference in sampling precision between the stratified disproportion sample and a simple random sample is less than one tenth of a percentage point in each case, the sampling error table for a simple random sample will provide a reasonable approximation of the precision of sampling estimates in the survey.

TABLE 6
Design Effect on Confidence Intervals for Sample Estimates Between Disproportionate Sample Used in Occupant Protection Survey And a Proportionate Sample of Same Size

	p=	CONFIDENCE INTERVALS ± AT 95% CONFIDENCE LEVEL: HYPOTHETICAL PROPORTIONATE SAMPLING*	CURRENT DIS-PROPORTIONATE SAMPLING	DIFFERENCE IN CONFIDENCE INTERVALS ABOUT ESTIMATES
USE NEW VARIABLES				
Driven in the past year	*90.1%*	*0.53*	*0.49*	*-8.2%*
Drunk alcohol in past year	*61.3%*	*0.87*	*0.85*	*-2.4%*
Always use safety belt	*83.5%*	*0.70*	*0.68*	*-2.9%*
Dislike seat belts	*34.9%*	*1.27*	*1.34*	*+5.2%*
Always use passenger belt (front)	*80.3%*	*1.04*	*1.02*	*-2.0%*
Favor (a lot) seat belt laws	*67.4%*	*1.18*	*1.18*	*0.0%*
Primary enforcement	*63.1%*	*1.25*	*1.27*	*+1.6%*
Ever ticketed by police for seat belt	*8.4%*	*0.70*	*0.68*	*-2.9%*
Ever injured in vehicle accident	*24.5%*	*0.76*	*0.78*	*+2.6%*
Drives a car for work almost every day	*52.0%*	*2.23*	*2.25*	*+0.9%*
Set a good example for others (reason for using seat belts)	*76.4%*	*1.14*	*1.16*	*+1.7%*
Driver-side only Air Bag in vehicle	*24.0%*	*0.96*	*0.95*	*-1.1%*
Race: Black/African American	*9.6%*	*0.52*	*0.52*	*0.0%*
Ethnicity: Hispanic	*9.9%*	*0.53*	*0.48*	*-10.4%*
Gender: Male	*48.2%*	*0.89*	*0.88*	*-1.1%*
AVERAGE DIFFERENCE IN CONFIDENCE INTERVALS				*-1.3%*

* Total sample proportions using SRS formula

Estimating Statistical Significance

The estimates of sampling precision presented in the previous section yield confidence bands around the sample estimates, within which the true population value should lie. This type of sampling estimate is appropriate when the goal of the research is to estimate a population distribution parameter. However, the purpose of some surveys is to provide a comparison of population parameters estimated from independent samples (e.g. annual tracking surveys) or between subsets of the same sample. In such instances, the question is not simply whether or not there is any difference in the sample statistics that estimate the population parameter, but rather is the difference between the sample estimates statistically significant (i.e., beyond the expected limits of sampling error for both sample estimates).

To test whether or not a difference between two sample proportions is statistically significant, a rather simple calculation can be made. Call the total sampling error (i.e., var (x) in the previous formula) of the first sample s1 and the total sampling error of the second sample s2. Then, the sampling error of the difference between these estimates is sd that is calculated as:

$$sd = \sqrt{(s1^2 + s2^2)}$$

Any difference between observed proportions that exceeds sd is a statistically significant difference at the specified confidence interval. Note that this technique is mathematically equivalent to generating standardized tests of the difference between proportions.

An illustration of the pooled sampling error between subsamples for various sizes is presented in Table 7. This table can be used to indicate the size of difference in proportions between drivers and non-drivers or other subsamples that would be statistically significant.

TABLE 7. Pooled Sampling Error Expressed as Percentages For Given Sample Sizes (Assuming P=Q)

Sample Size																	
4000	14.1	10.0	7.1	5.9	5.1	4.7	4.3	4.0	3.8	3.6	3.5	3.0	2.7	2.5	2.4	2.3	2.2
3500	14.1	10.0	7.1	5.9	5.2	4.7	4.3	4.1	3.8	3.7	3.5	3.0	2.7	2.6	2.4	2.3	
3000	14.1	10.0	7.2	5.9	5.2	4.7	4.4	4.1	3.9	3.7	3.6	3.1	2,8	2.7	2.5		
2500	14.1	10.0	7.2	6.0	5.3	4.8	4.5	4.2	4.0	3.8	3.7	3.2	2.9	2.8			
2000	14.2	10.1	7.3	6.1	5.4	4.9	4.6	4.3	4.1	3.9	3.8	3.3	3.1				
1500	14.2	10.2	7.4	6.2	5.5	5.1	4.7	4.5	4.3	4.1	4.0	3.6					
1000	14.3	10.3	7.6	6.5	5.8	5.4	5.1	4.8	4.7	4.5	4.4						
900	14.4	10.4	7.7	6.5	5.9	5.5	5.2	4.9	4.8	4.6							
800	14.4	10.4	7.8	6.6	6.0	5.6	5.3	5.1	4.9								
700	14.5	10.5	7.9	6.8	6.1	5.7	5.5	5.2									
600	14.6	10.6	8.0	6.9	6.3	5.9	5.7										
500	14.7	10.8	8.2	7.2	6.6	6.2											
400	14.8	11.0	8.5	7.5	6.9												
300	15.1	11.4	9.0	8.0													
200	15.6	12.1	9.8														
100	17.1	13.9															
50	19.8																
	50	100	200	300	400	500	600	700	800	900	1000	1500	2000	2500	3000	3500	4000
Sample Size																	