



How Knowledgeable Are Americans About Concussions?

Assessing and Recalibrating the Public's Knowledge

CONTENTS

Foreword	
Background and Objectives	1
Method	2
General Attitudes	3
Perceived Knowledge	4
Myth Busting	5
Definition	5
Signs and Symptoms	6
Susceptibility	7
Impact on Life	8
Care and Treatment	9
Personal Exposure	10
Contact Sports	11
Resources	12
Media	13
Gender and Age Analysis	14-15
Parent Analysis	16-18
Concussion Sports Experience Analysis	19-20
Concussion Analysis	21-22
Factual Knowledge Analysis	23

Foreword

According to the Centers for Disease Control, as many as 3.8 million concussions occur each year in the United States. As awareness grows, so do misconceptions. Fear is instilled in parents and athletes, when it doesn't have to be.

At the UPMC Sports Medicine Concussion Program we've been treating and researching concussion for over 15 years. Each year we treat more than 17,000 patients and our researchers have published hundreds of academic research papers on the subject. From all of this, the most important thing we've learned: ***Concussions can be treated.***

Concussion isn't something you can detect on a CT scan, an MRI, or with a standard neurologic examination. However, our research has shown that there are six clinical trajectories of concussion that a trained concussion expert can identify. Because of this knowledge we're now able to provide proven treatments and evidence-based rehabilitation therapies. This individualized approach to concussion and the ability to use a multidisciplinary team to return patients to normal lives has changed the course of the injury.

UPMC commissioned a survey by Harris Poll in April among over 2,000 U.S. adults aged 18 or older, because we are dedicated to changing the conversation surrounding concussion and educating the public on the facts. Despite most Americans (85%) saying they feel they are at least somewhat knowledgeable about concussions, this does not seem to be the case. In fact, nearly 9 out of 10 (87%) Americans cannot correctly define a concussion. More work needs to be done.

Our program will continue to do what we can to properly educate patients and families about concussion, and I hope after reading this report, you will want to do the same. People should think of concussion as a treatable injury in the right hands, not some untreatable condition that causes you to retreat to a dark room.

Please join the conversation by visiting [ReThinkConcussions.com](https://www.upmc.com/ReThinkConcussions).

Thank you,

Michael "Micky" Collins, PhD
Clinical and Executive Director

UPMC Sports Medicine Concussion Program

BACKGROUND / OBJECTIVES

UPMC set out to explore the opinions and basic knowledge of U.S. adults on the subject of sustaining and treating concussions.

Specifically, UPMC wanted to know:

- Adults' (and their children's) interest in, involvement in, and attitudes toward contact sports.
- Adults' perceived and actual knowledge of concussions.
- Adults' general attitudes about concussions and the information available to them.
- Adults' personal experience in dealing with concussions.
- The treatment received for concussions.

METHOD

Long Version

This survey was conducted online within the United States by Harris Poll on behalf of UPMC between April 16-23, 2015, among 2,012 U.S. adults age 18 or older. Figures for age, sex, race/ethnicity, education, and household income were weighted where necessary to bring them into line with their actual proportions in the population. Propensity score weighting also was used to adjust for respondents' propensity to be online.

All sample surveys and polls, whether or not they use probability sampling, are subject to multiple sources of error which are most often not possible to quantify or estimate, including sampling error, coverage error, error associated with nonresponse, error associated with question wording and response options, and post-survey weighting and adjustments. Therefore, the words "margin of error" are avoided as they are misleading. All that can be calculated are different possible sampling errors with different probabilities for pure, unweighted, random samples with 100% response rates. These are only theoretical because no published polls come close to this ideal.

Respondents for this survey were selected from among those who have agreed to participate in Harris Poll surveys. The data have been weighted to reflect the composition of the U.S. adult population. Because the sample is based on those who agreed to participate in panel, no estimates of theoretical sampling error can be calculated.

Short Version

This survey was conducted online within the United States by Harris Poll on behalf of UPMC between April 16-23, 2015 among 2,012 U.S. adults age 18 or older, 948 of whom are parents. For complete survey methodology, including weighting variables, please contact Deana Percassi, Harris Poll (585) 214-7212.

These statements conform to the principles of disclosure of the National Council on Public Polls.

GENERAL ATTITUDES

For Most Americans, Fear Consumes Reality

The vast majority of Americans express relatively high levels of concern over concussions and don't feel like the issue is treated seriously enough. A substantial minority (about 4 in 10) compares getting a concussion to "living a nightmare." On a more individual level, one-quarter of Americans expresses alarm that a concussion would change their life forever.

A third of parents live in fear that their children, both athletes and non-athletes, may sustain a concussion someday. In turn, one-quarter of parents do not allow their children to play some contact sports for fear of concussion.

The survey further revealed some surprising results regarding general attitudes and thoughts about concussion, including:

- Approximately 9 in 10 adults (89%) believe concussions are a moderate or serious health concern
- Only a very slim 2% say it is not a health concern at all.
- 41% feel that getting a concussion is living a nightmare.
If they personally sustained a concussion, 24% would be scared it would change their life forever and 22% would be anxious that they wouldn't be able to live their life the way they want to.
- Only 18% feel that concussions aren't as bad as people think they are.
- 83% feel that people generally do not take concussions seriously enough.
- 32% of parents live in fear that their child will get a concussion.
- 25% of parents do not let their kids play some contact sports because of fear of concussions.

PERCEIVED KNOWLEDGE

Most Americans Admit to Below Average Knowledge

A large majority of Americans feel they have at least some knowledge about concussions, but very few describe themselves as experts. In fact, on the topic of concussions, only about 4 in 10 believe they have anymore knowledge than the average adult, and a very slight 16% feel they know everything they need to know.

In reality (and perhaps unexpectedly), those with greater perceived knowledge don't seem to have any greater intelligence on the fundamentals of concussions (such as treatment, recovery, or even the basic definition) than those who do not (see *Table 3*).

- 85% feel at least somewhat knowledgeable about concussions, though only 10% categorize themselves as very knowledgeable.
- 43% feel they are more knowledgeable about concussions than the average adult.
- 37% say concussions confuse them.
If they personally sustained a concussion, 33% are confused about what to expect as an outcome.
- Only 16% say they know everything they need to know on concussions.

MYTH BUSTING #1: THE DEFINITION

The Vast Majority Can't Correctly Define a Concussion

Approximately 9 in 10 Americans cannot correctly define a concussion, even when given five options. Only about 1 in 8 chose the correct definition: neurochemical and cellular changes in the brain triggered by an injury caused by direct or indirect forces. And while 8 in 10 U.S. adults understand that a person doesn't need to lose consciousness to have a concussion, only about one-third recognizes that a concussion doesn't require a blow to the head.

- Nearly 2 in 5 (37%) admit they are confused about what a concussion really is.
- 9 in 10 Americans (87%) do not know how to define a concussion.
Only 13% of Americans correctly say an injury caused by direct or indirect forces that cause chemical changes in the brain, as opposed to a loss of consciousness, swelling in the brain, bruise on the brain, or lack of oxygen to the brain.
- 80% realize that for an injury to be considered a concussion, the person does not need to lose consciousness.

However, only 32% recognize that to sustain a concussion, there does not need to be a blow to the head.

MYTH BUSTING #2: SIGNS AND SYMPTOMS

Key Signs and Symptoms are Overlooked by Most Americans

Concussions affect people in various ways and different types of concussions trigger different symptoms, which ultimately determine both treatment and rehabilitation. However, while the majority of U.S adults realize all concussions are not the same, most Americans do not recognize many of the key signs and symptoms.

Some symptoms like headache, cognitive difficulty, and dizziness are evident to a slight (but not overwhelming) majority of Americans, but other common symptoms are not (for example, nausea and fatigue). A concussion's emotional side effects (like changes in mood) are recognized by only a very slim 13% of adults. Most Americans know a few vital signs, but very few are aware of most or all of the signs to watch for.

- Almost 4 in 5 U.S. adults (78%) know that generally speaking, all concussions are not the same.
- 56% realize that everyone who has a concussion is affected in some way.

Signs of Concussion

- Most Americans can correctly identify certain immediate signs that a concussion has occurred such as: disorientation or confusion (80%); loss of consciousness (68%); headache (66%); and feeling lightheaded (56%).

But, all other common signs are identified by less than half of the U.S. population, such as vomiting (48%), the inability to speak clearly (46%), sleepiness (40%), and amnesia (29%).

Symptoms of Concussion

- The majority of Americans also recognize the general symptoms of concussions like: headache (58%), dizziness or motion sensitivity (58%) and cognitive difficulty (55%).

However, far fewer understand that the following are also symptoms of a concussion: nausea or vomiting (42%); fatigue (34%); or slurred speech (31%).

Only about 1 in 10 (13%) recognizes that changes in mood are a symptom.

MYTH BUSTING #3: SUSCEPTIBILITY

There is No Clear Understanding of Risk

Americans can't properly classify the level of risk for sustaining concussions. Only a minority of Americans (about 1 in 3) realizes that all adults are at about equal risk of sustaining a concussion. In fact, nearly 1 in 2 Americans mistakenly believe (or are unsure) that those who have already suffered a concussion are not just as likely to sustain another, compared to someone who has never had one.

- Only about half (53%) know that a person who has had a concussion is just as likely to get another concussion as someone who has never had one. Twenty- eight percent say this is “false” and another 19% say they are “not sure.”
- Only 31% recognize that all adults are pretty much at the same risk of getting a concussion.
- About one-quarter (23%) believe that everyone gets a concussion at some point in their life.

MYTH BUSTING #4: IMPACT ON LIFE

Many Overstate the Long-term Impact and Understate the Treatability

The majority of Americans don't realize that concussions are treatable, leaving many anxious or scared that sustaining a concussion would have an irreparable (and damaging) impact on their life. A minority (about 3 in 10) are misguided in thinking that most concussions are actually life-threatening.

Moreover, most Americans do not understand that with proper treatment, you can avoid sustaining permanent damage and actually rehabilitate the brain from concussion. Nearly 4 in 5 incorrectly believe that you can only lessen symptoms of concussion and that you can never fully recover.

- 26% do not understand that people can rehabilitate from a concussion.
- Seven in 10 adults (72%) are not sure if or incorrectly believe that while a person may recover from a concussion, the damage done to the brain is permanent.
- 79% incorrectly believe—or are unsure—that there is no real way to cure a concussion; the symptoms can only be lessened.
- Only 29% of Americans believe that all concussions are treatable.
- About 3 in 10 (32%) incorrectly believe that most concussions are life-threatening—or are unsure.
- About 4 in 5 (81%) Americans aren't comfortable that they would know the steps to manage or treat a concussion if they sustained one.
- More than 1 in 5 (22%) Americans would feel anxious that they wouldn't be able to live their life the way they wanted to if they sustained a concussion.
- 41% of Americans believe that getting a concussion is living a nightmare.
- Almost 1 in 4 (24%) Americans would be scared that their life would change forever if they sustained a concussion.

MYTH BUSTING #5: CARE AND TREATMENT

Most Recognize Treatment Progress – But Not the Exact Methods

Approximately 8 in 10 Americans feel that major progress has been made over the past decade in the field of concussion treatment. Most also believe that there is no one-size-fits-all model to treatment. However, most still do not recognize that all concussions are treatable given the right expertise.

When it comes to the specific details, most U.S. adults are unaware of proper recovery methods for concussions. Even more meaningfully, fewer than 2 in 5 Americans recognize that using neurocognitive tests is considered a “best practice” in treating concussions.

- 83% feel that major progress has been made in the past 10 years in assessing and treating concussions.
- About 8 in 10 (78%) understand that with appropriate care, concussions can be managed.
- However, only 29% recognize that concussions are treatable.
- About 8 in 10 (79%) correctly recognize that there are various ways to treat a concussion, since each one is different.
- However, the majority of Americans don’t recognize some key best practices to treat a concussion.
- Less than half understand that it is beneficial to limit physical activity and not participate in competitive activities until cleared (48%).
 - Roughly 4 in 10 recognize the need for using neurocognitive tests (38%).
 - 16% incorrectly believe there are no best practices to treat a concussion.
- Only about 1 in 2 (49%) realize that after a concussion, a person does not need to stay awake for 24 hours.

PERSONAL EXPOSURE

Most Americans Have Personal Experience –With Noticeable Impact on Knowledge, With the Exception of Parents

The majority of Americans have had at least some direct exposure to concussions. Many attribute whatever knowledge they have about concussions to this personal experience. In reality, the direct experience (especially when the concussion is self-sustained) does appear to have a clear impact on knowledge about symptoms, care, or life impact. But compellingly, parents who have had a child sustain a concussion at some point, do not seem to have any significantly greater knowledge than other parents who have not (see Table 3).

Based on past experience, most adults who have sustained a concussion (or have had a child sustain a concussion) appear to have sought proper medical treatment. However, there still appear to be some clear holes in treatment (either improper management or lack of action) for a smaller minority of U.S. adults. For example, one-quarter chose to handle the concussion on their own; one-third did not receive any treatment; and many pursued misguided treatment like massaging the temples or applying heat. Moreover, only a very slight minority (about 1 in 10) sought the care of a neurologist—and only 2% saw a neuropsychologist.

- Nearly 6 in 10 (57%) of American adults have personal experience with concussions, primarily sustained by themselves (24%); a friend (27%); or a family member (20%).
- Among those who are somewhat knowledgeable, many say personal experience either having a concussion themselves (16%) or knowing someone else who has sustained a concussion (27%) has informed their expertise.
- Thinking about their personal experience with concussions (i.e., the latest concussion they/their child sustained),
 - 39% received care from an emergency room – and 36% from a primary care physician. About one in four (26%) did not see a healthcare professional.
 - The most commonly prescribed treatment was: refraining from physical activity (51%), followed by keeping hydrated (34%) and taking OTC medicine (28%). One-third (33%) did not get any prescribed treatment.
 - 7 in 10 (70%) say they followed their HCP's advice exactly as prescribed. But 30% (more so adults than children) either did not seek out care or did not follow HCP advice exactly.
 - 93% feel they/their child have fully recovered, but nearly 1 in 10 (7%) do not.
 - Among those who have not fully recovered, the most common reason is that they still have symptoms (58%). And, among those who have fully recovered, the primary reason is that they are symptom free (68%), followed by ability to do everything they used to do (63%) and feeling like old self again (60%).
- Overall, 2 in 5 (38%) adults see using neurocognitive testing as a best practice to measure an address concussions.
 - For those who personally had or their child had a concussion, only 14% went to a neurologist. Only 2% saw a neuropsychologist.

CONTACT SPORTS

Most Have Experience with Contact Sports – but Little Trust in Schools, Coaches and Professional Leagues

Watching and participating in contact sports is an American pastime for both children and adults. While most Americans realize that all concussions do not occur during contact sports, the majority overemphasizes the benefits of safety equipment (and therefore perhaps minimizes the risk/potential for concussions). Three in four U.S. adults incorrectly believe (or are unsure) that safety equipment (like helmets or mouth guards) can prevent the majority of all concussions.

And while most Americans believe that coaches own the responsibility to protect their athletes, only about 1 in 2 have confidence at the youth level that the schools/coaches are properly trained and at the professional level that the league leaders actually care about their athletes' health.

- 60% enjoy watching contact sports.
- Nearly 2 in 5 (37%) have experience playing sports. Among those who played a contact sport at some point,
 - 10% are currently playing contact sports but most last played about 18 years ago on average.
- About 1 in 2 (47%) define themselves as mostly just spectators of contact sports; 13% play recreationally in leisure or non-competitive leagues and 11% play competitively.
- 76% have children who have played a concussion-risk sport or activity at some point.
 - Among those who don't have a child who has played contact sports, 32% say they would not allow their child to engage in a contact sport or activity.
 - 1 in 4 parents (25%) say they personally do not let their kids play some contact sports because of fear of concussions.
- Only 53% of adults know that not all concussions occur while playing a contact sport or activity.
- Only one-quarter (25%) realize that safety equipment (like helmets or mouth guards) cannot prevent the majority of all concussions.
- 77% realize that no athlete should be allowed to return to the current activity after sustaining a concussion during play.
- About 9 in 10 (87%) believe that coaches have the responsibility to protect their athletes from concussions.
 - However, only half (50%) of U.S. adults feel that their children's school and their coaches are adequately trained to deal with concussions.
 - About 7 in 10 (71%) say too often, athletes are encouraged to keep playing sports right after they sustain concussions.
- About half (48%) feel that leaders of major sports leagues don't care when athletes sustain concussions.

RESOURCES

Many Are Unclear About Where They Should Turn to for Information or Care

Most Americans are optimistic that they would find an appropriate solution if they ever sustained a concussion. The vast majority trusts their health care provider would offer the best possible care. But simultaneously, most say they are not confident they would know where to turn. In fact, nearly 4 in 10 admit they wouldn't know what to do. Only a minority (about 2 in 5 Americans) believe they have tried to learn as much as they can about concussions, and the majority feels there is a lot of misinformation about concussions. So given clear misperceptions, confusion, and lack of knowledge, it appears that more education is warranted.

- Only about 2 in 5 (37%) Americans, have tried to learn as much as they can about concussions.
- More than 1 in 4 (27%) say if they got a concussion, they would not know where to turn for information.
 - Nearly 4 in 10 (39%) wouldn't know what to do if they sustained a concussion.
- 9 in 10 (90%) say if they sustained a concussion, they would trust their healthcare provider to provide them with the best care possible.
- If they sustained a concussion, 57% are hopeful that they would find the best solution to solve their specific concussion.
 - But only 44% are confident they would know where to go to get the best possible care.
- Nearly 3 in 4 (73%) believe there is a lot of misinformation on concussions.

MEDIA ATTENTION:

Public Not Seeking Out Information As Much As They Could

Many Americans demonstrate that they are confused by or know only a modest amount about concussions. This is possibly fueled by the following reasons:

1) A general public that pays only cursory attention to what they read and hear. The majority of Americans say they typically believe what they see about concussions and link any knowledge they have with information they have read and heard. Yet, 2 in 3 Americans admit they don't follow news stories all that closely (or perhaps as closely as they should).

2) A media environment that offers potentially incomplete or inaccurate information. About 1 in 2 Americans put the onus on the media, saying they don't do a very good job reporting on concussions. However, it is important to note that those who follow news stories more closely actually rate the media more positively on concussion reporting.

- Only about 2 in 5 (37%) Americans, have tried to learn as much as they can about concussions.
- Just 16% say they know everything they need to know on concussions.
- 75% admit they typically believe what they read and hear about concussions.
 - But only one-third (33%) say they follow news stories about concussions very closely.
- Among those who feel at least somewhat knowledgeable, most feel their expertise comes from reading or seeing information about the topic (i.e., articles, blogs, or documentaries) (66%).
- Only about half (49%) feel that the media does a good job reporting on concussions.
 - Those who follow news stories about concussions very closely are more likely than those who don't to say the media does a good job reporting on them (62% vs. 43%).

GENDER AND AGE ANALYSIS

Clear Gender Gap Exists on Concussion Interest – But Not Necessarily Concussion Knowledge

Unsurprisingly, men and women do not face concussions with the same level of unease or expertise. Following stereotype, women are more likely to see concussions as a serious health concern, while men are more likely to proactively consume information about concussions and claim to be better informed about the topic. In reality, men do score a bit better than women on concussion facts, but both genders still lack key knowledge.

With Age Comes Understanding

Despite having greater exposure to concussions personally, younger adults (ages 18-34) admit they are less likely to follow the latest news on concussions and know how to take action if a concussion occurs, while older adults ages 55+ demonstrate much more awareness and insight on the topic.

Gender

- Women are more likely than men to:
 - See concussions as a very serious health concern (55% vs. 47%)
 - Feel confused about what a concussion is (40% vs. 34%)
- Men are more likely than women to:
 - Have tried to learn to as much as they can about concussions (42% vs. 33%)
 - Follow concussion stories very closely (37% vs. 28%)
 - Believe that they are more knowledgeable than the average adults about concussions (50% vs. 36%)
- 2 in 5 of either gender admit they wouldn't know what to do if they sustained a concussion (40% males and 38% females).
- While men are more likely than women to get a majority of key facts correct about concussions (43% vs. 35%):
 - Only about 1 in 10 of each gender knows the correct definition of a concussion (12% males and 14% females).
 - Only a third of men (33%) and about one-quarter of females (26%) think nearly all concussions are treatable.
 - Almost half of both genders think there is no real way to cure a concussion, that the symptoms can only be lessened (45% males and 48% females).
 - Over half of both genders think sports equipment can prevent most concussions (53% males and 61% females).

Age

- Those aged 18-34 are more likely than other ages groups to know someone who has had a concussion [18-34 (65%) vs. 35-44 (55%), 45-54 (51%), 55+ (53%)].
- Those aged 18-34 are the least likely to say they follow concussions stories very closely [18-34 (25%) vs. 35-44 (37%), 45-54 (35%), 55+ (36%)].

- Those aged 18-34 are more likely than those aged 55 or older to say they wouldn't know what to do if they sustained a concussion [18-34 (44%) vs. 55+ (36%)].
- Those aged 55 or older are the most likely to get a majority of key facts on concussions correct, and this knowledge increases with age [55+ (48%) vs. 18-34 (32%), 35-44 (34%), 45-54 (37%)].
- Those aged 18-34 are more likely than their older counterparts to say most concussions are sustained during a contact sport or activity [18-34 (36%) vs. 35-44 (28%), 45-54 (28%) and 55+ (27%)].

Table 1—Gender and Age						
	Gender		Age			
	Men (n=947)	Women (n=1065)	18-34 (n=675)	35-44 (n=443)	45-54 (n=400)	55+ (n=494)
	(A)	(B)	(C)	(D)	(E)	(F)
CONCUSSION ATTITUDES						
% believe very serious health concern	47%	55%A	40%	42%	45%	66%CDE
% feel getting concussion is “living a nightmare”	42%	40%	41%	48%F	41%	39%
% know someone who has had concussion	59%	55%	65%DEF	55%	51%	53%
PERCEIVED KNOWLEDGE						
% have tried to learn as much as they can	42%B	33%	36%	43%E	34%	38%
% follow concussion stories very closely	37%B	28%	25%	37%C	35%C	36%C
% believe more knowledgeable than average adult	50%B	36%	47%	46%	40%	40%
% feel confused about what a concussion is	34%	40%A	38%	37%	36%	36%
% wouldn't know what to do if had a concussion	40%	38%	44%F	39%	38%	36%
ACTUAL KNOWLEDGE						
True/False Test Score (10 or More/16)	43%B	35%	32%	34%	37%	48% CDE
% correctly identify definition of concussion	12%	14%	12%	11%	15%	14%
% identify all/most correct symptoms	24%	26%	26%	28%	23%	23%
% feel all concussions are treatable	33%B	26%	28%	25%	31%	32%
% say no real way to cure a concussion; the symptoms can only be lessened	45%	48%	40%	55%CE	44%	49%C
% say most concussions sustained during contact sports or activity	27%	33%A	36%EF	28%	28%	27%
% feel athletes should be allowed to return to sports immediately	12%	11%	14%	10%	10%	10%
% feel safety equipment can prevent most concussions	53%	61%A	63%F	55%	57%	54%

Letters indicate statistically significant difference between subgroups at a 95% CL.

PARENT ANALYSIS

Parents of Athletes Are More Interested, More Exposed, and More Knowledgeable

Parents are more likely than non-parents to take concussions seriously and feel they are a grave health concern. Not unexpectedly therefore, parents in general pay closer attention to the news and seek out more information on the topic.

Within the overall category of parents, those with athletic children are much more likely to have had direct personal exposure to concussions, either through their child or someone else they know. And perhaps as a result, they are even more likely to proactively seek out and consume information about concussions.

Interestingly, parents of athletes and non-athletes rate their knowledge of concussions nearly equally. But in reality, parents of athletes demonstrate much greater knowledge than their peers, likely because they have done more of their own research and have had greater experience with concussions.

That said, despite having somewhat greater knowledge, the majority of parents of athletes still lack some key intelligence that may impact their ability to make good choices for their children. For example, most overstate the benefits of using safety equipment and a staggering nearly 1 in 7 feel athletes should be able to return to the field after sustaining a concussion.

Also of note, fathers are more likely to self-describe as “knowledgeable” and mothers as “confused.” And in reality, fathers do in fact display slightly – though not overwhelmingly – more insight on the topic.

Parents vs. Non Parents

- Parents are more likely than non parents to believe concussions are a very serious health concern (54% vs. 47%).
- Parents are more likely than non-parents to:
 - Say they have tried to learn as much as they can about concussions (42% vs. 32%).
 - Follow news stories about concussions very closely (39% vs. 26%).

Parents of Athletes vs. Parents of Non Athletes

- 71% of parents of athletes say that, too often, athletes are encouraged to keep playing sports right after they sustain concussions.
- When reporting perceived knowledge, nearly 9 in 10 parents of athletes and non athletes alike consider themselves at least somewhat knowledgeable (89% vs. 86%).
- Parents of athletes are more likely than those of non athletes to say they:
 - Have tried to learn as much as they can about concussions (45% vs. 33%)

- Follow news stories about concussions very closely (42% vs. 30%)
- 45% of parents of non-athletes say they wouldn't know what to do if they sustained a concussion, compared to 35% of parents of athletes.
- Although not a significant difference, 23% of parents of athletes think that everyone gets a concussion at some point in their lives, compared to 16% of parents of non-athletes.
- 56% of parents of athletes know that a person doesn't have to stay awake for 24 hours following a concussion, compared to 44% of parents of non-athletes.
- Both parents of athletes and non athletes alike incorrectly believe that using safety equipment (like helmets or mouth guards) can prevent the majority of all concussions (58% vs. 59%).
- 61% of parents of athletes know that a person who has gotten a concussion is just as likely to get another one as someone who has never had one, compared to 52% of parents of non-athletes.
- 72% of parents of athletes know that most concussions aren't life threatening, compared to just 61% of parents of non-athletes.
- 1 in 3 (33%) parents of athletes say they live in fear that their child will get a concussion.
- Only half (52%) of parents of athletes feel like their children's school and their coaches are adequately trained to deal with concussions.

Mothers and Fathers

- Fathers are more likely than mothers to say they are more knowledgeable than the average adult (52% vs. 38%).
- Mothers are more likely than fathers to be confused about what a concussion really is (40% vs. 31%).
- Fathers are more likely to get a majority of key facts correct about concussions (47% vs. 38%)—but this is less than half in both genders.

Table 2—Parent* Analysis

	Parent Status		Parent With Child Athlete		Parent Gender	
	Yes (n=948)	No (n=1064)	Yes (n=704)	No (n=244)	Father (n=440)	Mother (n=508)
	(A)	(B)	(C)	(D)	(E)	(F)
CONCUSSION ATTITUDES						
% believe very serious health concern	54%B	47%	55%	53%	50%	58%
% feel getting concussion is “living a nightmare”	43%	40%	43%	41%	46%	40%
% believe too often, athletes are encouraged to keep playing sports right after they sustain concussions	71%	72%	71%	70%	71%	71%
% know someone who has had concussion	56%	58%	62%D	37%	58%	53%
PERCEIVED KNOWLEDGE						
% At least somewhat knowledgeable	88%B	81%	89%	86%	91%	86%
% have tried to learn as much as they can	42%B	32%	45%D	33%	46%	39%
% follow concussion stories closely	39%B	26%	42%D	30%	46%F	33%
% believe more knowledgeable than average adult	44%	42%	46%	40%	52%F	38%
% feel confused about what a concussion is	36%	38%	36%	36%	31%	40%E
% believe everyone gets a concussion at some point in their life	21%	24%	23%	16%	27%F	17%
% wouldn't know what to do if had a concussion	37%	41%	35%	45%C	38%	36%
ACTUAL KNOWLEDGE						
True/False Test Score (10 or More/16)	42%B	36%	45%D	31%	47%F	38%
% correctly identify definition of concussion	14%	12%	14%	12%	13%	15%
% identify all/most correct symptoms	25%	25%	25%	25%	25%	24%
% feel all concussions are treatable	31%	27%	32%	30%	37%F	27%
% say no real way to cure a concussion; the symptoms can only be lessened	50%B	42%	52%	47%	46%	54%
% know a person does not have to stay awake for 24 hours after sustaining a concussion	53%B	45%	56%D	44%	57%	50%
% say a person who has had a concussion is just as likely to get another concussion as someone who has never had one	59%B	47%	61%	52%	59%	59%
% say most concussions sustained during contact sports or activity	30%	30%	29%	35%	26%	33%
% feel safety equipment can prevent most concussions	59%	56%	58%	59%	54%	62%F
PARENT SPECIFIC ATTITUDES						
% live in fear child will get a concussion	32%	N/A	33%	31%	32%	32%
% do not let kids play some contact sports because of concussion fear	25%	N/A	22%	31%D	25%	24%
% feel that their children's school and their coaches are adequately trained to deal with concussions	50%	N/A	52%	42%	49%	50%

Letters indicate statistically significant difference between subgroups at a 95% CL.

CONCUSSION SPORT EXPERIENCE ANALYSIS

Those With Contact Sport Experience Are More Interested, More Exposed and More Knowledgeable

Americans who have had personal experience with contact sports scored “higher” on almost every measure with respect to concussions than those who have never had personal contact sport experience. They have had more direct exposure to concussions, certainly through their own experiences but also through someone else they know. They rate themselves as more knowledgeable – and are actually more knowledgeable than those without contact sport experience. They are more likely to feel concussions are serious business and demonstrate more interest and focus in learning as much as they can about concussions.

- Those with contact sport experience (compared to those with no experience):
 - Know someone who has sustained a concussion (76% vs. 45%)
 - Say themselves, have sustained a concussion (38% vs. 16%)
 - Believe they are at least somewhat knowledgeable about concussions (96% vs. 78%)
 - Have tried to learn as much as they can about concussions. (47% vs. 32%)
 - Say they follow news stories about concussions very closely (42% vs. 28%)
 - Say concussions confuse them (31% vs. 41% of non-athletes)
 - Say they are confused about what a concussion really is (27% vs. 43% of non-athletes)
 - Don't know that most concussions aren't life threatening (26% vs. 36%)
 - Don't know that a person doesn't have to stay awake for 24 hours following a concussion (40% vs. 57%).
 - Say that they wouldn't know what to do if they sustained a concussion (31% vs. 44% of non-athletes).
- Only 1 in 4 of those with contact sport experience (26%) are comfortable that they know the steps to manage or treat a concussion (vs. 15% with no experience).
- 81% of those with contact sport experience believe that people do not take concussions seriously enough (vs. 83% with no experience).
- 1 in 5 with contact sport experience (20%) would be scared that their life would change forever following a concussion (vs. 27% with no experience).
- 41% of those with contact sport experience say getting a concussion is like living a nightmare (vs. 42% with no experience).
- 84% of those with contact sport experience feel that coaches have the responsibility to protect their athletes from concussions (vs. 88% with no experience).
- 54% of those with contact sport experience believe that limiting physical activity is a best practice to treating concussions (vs. 44% with no experience).
- 71% of those with contact sport experience believe that too often, athletes are encouraged to keep playing sports right after they sustain concussions (vs. 72% with no experience)

Table 3—Contact Sport Experience Analysis		
	Personal Experience Status	
	Yes (n=738)	No (n=1274)
	(A)	(B)
CONCUSSION ATTITUDES		
% believe people do not take concussions seriously enough	81%	83%
% feel getting concussion is “living a nightmare”	41%	42%
% scared their life will change forever following a concussion.	20%	27%A
% know someone who has had concussion	76%B	45%
% who have had a concussion themselves	38%B	16%
SPORTS SPECIFIC ATTITUDES		
% feel that coaches have the responsibility to protect their athletes from concussions	84%	88%
% believe that limiting physical activity is a best practice for treating concussions	54%B	44%
% believe no athlete should be allowed to return to the current activity after sustaining a concussion during play	80%	75%
% believe that too often, athletes are encouraged to keep playing sports right after they sustain concussions	71%	72%
PERCEIVED KNOWLEDGE		
% have tried to learn as much as they can	47%B	32%
% follow concussion stories closely	42%B	28%
% believe at least somewhat knowledgeable about concussions	96%B	78%
% believe more knowledgeable than average adult	58%B	35%
% feel confused about what a concussion is	27%	43%A
% wouldn’t know what to do if had a concussion	31%	44%A
% feel comfortable in knowing the steps to manage or treat a concussion	26%B	15%

Table 3—Contact Sport Experience Analysis		
	Personal Experience Status	
	Yes (n=738)	No (n=1274)
ACTUAL KNOWLEDGE		
True/False Test Score (10 or More/16)	46%B	35%
% correctly identify definition of concussion	15%	12%
% think that most concussions are life threatening (<i>or are not sure</i>)	26%	36%
% identify all/most correct symptoms	28%	23%
% feel all concussions are treatable	31%	29%
% say no real way to cure a concussion; the symptoms can only be lessened	52%B	43%
% say most concussions sustained during contact sports or activity	29%	30%
% feel safety equipment can prevent most concussions	58%	57%
% think a person needs to stay awake for 24 hours following a concussion	40%	57%A

Letters indicate statistically significant difference between subgroups at a 95% CL.

CONCUSSION ANALYSIS

No Surprise—Having Actual Experience and Knowledge Matters

Adults with personal concussion experience (either through themselves or someone else they know) express—and actually demonstrate—more knowledge of concussions. Moreover, they stay more up-to-date on concussions and feel more confident in their ability to take action. Perhaps in part due to their increased awareness, they also are less likely to overdramatize the experience or equate concussions to “living a nightmare.” However, those with concussion experience are more likely to feel there is no cure.

Knowledge—both perceived and actual—leads clearly to greater confidence and lower concern on the management of concussions in general.

- Those who have had any concussion experience are more likely to say they are more knowledgeable than the average adult (52% vs. 32%) and also get a majority of key facts about concussion correct (44% vs. 32%).
- Those who have had any concussion experience are more likely than those who have none to say they learn as much as they can about concussions (43% vs. 30%) and follow concussion news stories very closely (35% vs. 29%).
- Those who have no concussion experience are more likely than those who have had any to say they feel confused about what a concussion really is (45% vs. 31%), wouldn't know what to do if they had a concussion (51% vs. 30%), and that getting a concussion is like living a nightmare (47% vs. 37%).
- Those who have had any concussion experience are more likely than those who have none to say there is no real cure for a concussion (53% vs. 37%).

TABLE 3—Concussion Traits

	Any Personal Concussion Experience		Child Concussion Experience		Perceived Knowledge		True/False Test (Number correct out of 16)	
	Yes (n=1177)	No (n=835)	Yes (n=111)	No (n=837)	Some/None (n=1270)	Moderate/High (n=742)	10 or More (n=794)	9 Or Less (n=1218)
	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)
CONCUSSION ATTITUDES								
% believe very serious health concern	48%	54%	60%	54%	46%	58%E	52%	50%
% feel getting concussion is “living a nightmare”	37%	47%A	36%	44%	39%	45%E	34%	46%G
% know someone who has had concussion	100%	0%	100%D	49%	49%	69%E	64%H	52%
PERCEIVED KNOWLEDGE								
% have tried to learn as much as they can	43%B	30%	57%D	40%	25%	57%E	40%	36%
% follow concussion stories closely	35%B	29%	47%	38%	24%	47%E	34%	32%
% believe more knowledgeable than average adult	52%B	32%	60%D	42%	30%	65%E	50%H	39%
% feel confused about what a concussion is	31%	45%A	23%	38%C	46%F	23%	25%	45%G
% wouldn’t know what to do if had a concussion	30%	51%A	32%	38%	48%F	25%	27%	47%G
ACTUAL KNOWLEDGE								
True/False Test Score (10 or More/16)	44%B	32%	53%	40%	36%	45%E	100%	0%
% correctly identify definition of concussion	13%	13%	17%	13%	12%	14%	12%	13%
% identify all/most correct symptoms	29%B	20%	31%	24%	21%	32%E	30%H	22%
% feel all concussions are treatable	29%	30%	37%	31%	29%	30%	44%H	20%
% say no real way to cure a concussion; the symptoms can only be lessened.	53%B	37%	57%	49%	42%	54%E	50%H	44%
% say most concussions sustained during sports	30%	29%	25%	31%	30%	31%	23%	34%G
% feel athlete should be allowed to return to sports immediately	13%	10%	10%	13%	11%	13%	8%	13%G
% feel safety equipment can prevent most concussions	60%B	54%	59%	58%	57%	57%	56%	58%

Letters indicate statistically significant difference between subgroups at a 95% CL.

FACTUAL KNOWLEDGE ANALYSIS

Americans Lack Crucial Information on Concussions

Given a set of 16 statements that examine fundamental knowledge of concussions, most Americans answer only about half (or fewer) correctly, revealing a wide gap in concussion education. Notably, a few groups score higher on this “knowledge test,” notably parents of athletes; those with concussion experience; fathers, and older adults. But even for these more aware groups, the top average score is 9.2 (and only a very slight minority (10% or fewer) accurately respond to 13 or more of the 16 statements.

TABLE 4 – True/False Test Results

	Distribution of Correct Answers (out of possible 16)					Average
	13-16	10-12	7-9	4-6	0-3	
Total	4%	35%	40%	14%	7%	8.3
DEMOGRAPHICS						
Male	5%	37%	37%	13%	6%	8.5
Female	3%	32%	42%	16%	7%	8.1
Ages 18-34	3%	29%	45%	13%	9%	8.0
Ages 35-44	3%	30%	36%	19%	11%	7.7
Ages 44-54	3%	34%	39%	19%	5%	8.3
Ages 55+	5%	43%	37%	12%	4%	8.9
Northeasterners	4%	36%	40%	13%	7%	8.3
Midwesterners	4%	31%	42%	17%	5%	8.4
Southerners	4%	37%	39%	16%	6%	8.4
Westerners	4%	35%	37%	12%	9%	8.2
CONCUSSION TRAITS						
Concussion experience (any)	5%	39%	42%	11%	2%	8.9
Concussion experience (self)	7%	42%	79%	16%	3%	9.2
Concussion experience (child)	10%	45%	38%	7%	1%	9.5
Concussion experience (none)	1%	30%	37%	20%	12%	7.5
Perceived knowledge (some/none)	4%	33%	39%	18%	9%	8.0
Perceived knowledge (moderate/high)	5%	40%	40%	11%	5%	8.8
PARENT TRAITS						
Have child (any age)	5%	36%	39%	14%	5%	8.6
Do not have child	2%	33%	41%	14%	8%	8.1
Have child athlete	6%	40%	37%	14%	4%	8.8
Do not have child athlete	4%	28%	42%	17%	11%	7.9
Father	8%	38%	37%	12%	4%	8.9