

Understanding ATV and UTV Risks

Data-Driven Safety Solutions for Alabama



Aaron Yoder, PhD

Ellen Duysen, MPH



University of Nebraska Medical Center

Central States Center for Agricultural Safety and Health



Central States Center for Agricultural Safety and Health (CS-CASH)

Funding - National Institutes for
Occupational Safety and Health
(NIOSH)

- 11 US Ag Centers
- 7 States CS-CASH Region
- Research
- Prevention
- Education
- Outreach



JAKE ROGERS PHOTOGRAPHY

Objectives

- Understand the injury statistics, demographics and types of injuries associated with ATV and UTV incidents focusing on Alabama.
- Discuss barriers to preventing ATV incidents and possible solutions.
- Review recent policy changes regarding ATV/UTV road use.
- Identify local and national ATV injury prevention resources that are available to safety professionals and to the public.



All Terrain and Utility Vehicles

Valuable tool on the farm and ranch

Checking on fields, sprinklers, livestock, etc.

Minimal fuel use & ability to perform on diverse terrains

Sports activities – mountains, trails

- Families ride for fun
- Hunting

Search and Rescue/Military

Inexpensive and convenient



Utility Vehicles (UTV)

Similar to golf carts, except some are fitted with cargo boxes to carry materials

Four, Five, or Six wheels

Designed for WORK

Can be diesel, gasoline, electric or hydrogen fuel cell powered

Likely to have roll-over protection and seat belts

Low-pressure tires are NOT designed for pavement

Popular for recreational use.



Recreational Off-Road Vehicle (ROV)

Made for recreational use, not hauling or work.

Speed is a factor in most incidents.

Use is prevalent on hard-surfaced roads.

Some states allow these to be licensed if modified.



All Terrain Vehicles (ATV)

More stable than three-wheelers

Sales of three-wheelers were banned in the U.S. in 1988 due to high injury rates, especially among children.

Same factors that impact all vehicle roll-overs impact ATVs. Slope, speed, centrifugal force, bumps

Unlike most vehicles, the center of gravity can be affected by the rider. And the CG changes can change quickly.



Power and Speed

70 to over 800 cc
Can exceed 75 mph

A 450 cc ATV weighs
520 lbs

*They are now bigger,
faster, heavier and can
cause greater physical
damage.*

**ONE SIZE
DOES NOT FIT ALL**

READ AND FOLLOW THE MANUFACTURERS
RECOMMENDATIONS FOR AGE GROUPS.



TAKE AN ATV RIDERS COURSE TODAY!

CONTACT:



© CANADA SAFETY COUNCIL - 2750 SHEPPARD AVE. E. UNIT 6, COTTLEMAN, ONTARIO, CANADA M1S 1B2 TEL: 905-709-1339



Operation and Safety

Manufacturers recommended engine size by age:

>16 years ATV >90 cc

12 – 15 years ATV
between 70-90 cc

6 – 12 years ATV use
70 cc and less

Manufacturers cannot knowingly sell an ATV >90cc for use to anyone under 16 years of age.



Roadway Use Laws Differ by State

• Alabama ATV/ UTV Laws

STATE OF ALABAMA ATV OPERATION

The following laws establish how an ATV may be legally operated within the state of Alabama, on both private and public/state owned property. While ATVs do have 4 wheels, they are designed for off-road use and typically do not meet federal safety guidelines. As such, the state created laws to limit their use and protect the public from accidents. Failure to abide by these laws will typically result in costlier fines and potentially jail time depending on the offense.

Required Equipment in Alabama

The following items are required by Alabama law to be installed upon an ATV or worn by an operator during use.

- **Helmet** Not Required.
- **Headlight(s)** Required if operated within the period of one half hour before sunset or one half hour after sunrise.
- **Tail Light** Required if operated within the period of one half hour before sunset or one half hour after sunrise.
- **Muffler** Not Required.
- **Spark Arrestor** Not Required.
- **Brakes** Not Required.
- **Other**

What is the Minimum Age to Operate an ATV in Alabama?

NA - As ATVs may only be operated on private property in Alabama there exists no law which restricts the age at which a person can operate an ATV.

Can I Drive my ATV on Public Roads in Alabama?

No - § 32-1-7 - Alabama strictly prohibits the use of ATVs on public roads and property, including beaches and sand dunes. Legal operation is only allowed on property in which you own or have permission to use, which can include beaches.

Alabama ATV Rules of the Road

- **Excessive Speed** - ATV operators may not travel at a speed that is greater than reasonable for the conditions.
- **DUI/DWI** - It is illegal in every state to operate a motor vehicle on public roads or property while under the influence of alcohol. Most states also employ a zero tolerance approach to ATVs and more strict penalties for excessive blood alcohol concentrations (BAC).

The Statistics – Consumer Product Safety Commission

<https://www.cpsc.gov/Safety-Education/Safety-Education-Centers/ATV-Safety-Information-Center#:~:text=ATVs%20accounted%20for%20more%20than,percent%20of%20the%20OHV%20injuries.>



United States
Consumer Product Safety Commission

2023 Report of Deaths and Injuries Involving Off-Highway Vehicles with More than Two Wheels

May 2024

Chao Zhang
Directorate for Epidemiology
Division of Hazard Analysis
U.S. Consumer Product Safety Commission
4330 East West Highway
Bethesda, MD 20814

OHV = Off-Highway Vehicles

ATV Deaths by State 2022

Alabama #4

The information below includes data from January 1, 2022 to May 1, 2022

Table 6 ATV Fatalities by State

	<i>Count</i>	<i>Percentage</i>
Florida	8	13.3%
Pennsylvania	6	10.0%
Texas	4	6.7%
Alabama	3	5.0%
Arizona	3	5.0%
Kentucky	3	5.0%
Oklahoma	3	5.0%
South Carolina	3	5.0%
California	2	3.3%
Georgia	2	3.3%
Minnesota	2	3.3%
Mississippi	2	3.3%
North Carolina	2	3.3%
Ohio	2	3.3%
Colorado	1	1.7%
Illinois	1	1.7%

ATV Deaths by State 2023

Alabama #5

The information below includes data from January 1, 2023 to Dec 31, 2022

Table 6 ATV Fatalities by State		
	Count	Percentage
Florida	20	6.9%
Wisconsin	18	6.2%
Kentucky	16	5.5%
Texas	14	4.8%
Alabama	13	4.5%
California	13	4.5%
Ohio	13	4.5%
Pennsylvania	13	4.5%
Minnesota	12	4.1%
Georgia	11	3.8%
New York	11	3.8%
Missouri	10	3.4%
Louisiana	9	3.1%
South Carolina	8	2.7%
Mississippi	7	2.4%
Virginia	7	2.4%
Illinois	6	2.1%
Indiana	6	2.1%

Fatalities for Children Under 16 and 12 Years of Age

Table 5: Reported OHV-Related Fatalities for All Ages and Children's Age Groups, 2018–2020

	All Ages	Under 16 Years of Age		Under 12 Years of Age		
Year	Deaths	Deaths	Percent of All Deaths	Deaths	Percent of All Ages	Percent of Deaths under 16
2018	714	71	10%	38	5%	54%
2019	744	94	13%	43	6%	46%
2020	990	123	12%	46	5%	37%
Total	2,448	288	12%	127	5%	44%

Source: CPSRMS.



The Burden of Child ATV/UTV Fatalities

Last Month in Alabama

COVERAGE YOU CAN COUNT ON



Vigil for 8-year-old who died in ATV Crash

WAAY 31 News
59K subscribers

Subscribe

👍 8

👎

➦ Share

💎 Ask

⬇️ Download

Continued

September 2025

[NATION](#)

Alabama

[Add Topic +](#)

2 adults dead, 7 children injured in Alabama ATV crash



[Dinah Voyles Pulver](#)

USA TODAY

Updated Sept. 2, 2025, 9:29 a.m. ET

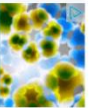


Advertisement



Precious samples?
We're up for the challenge.

RNA-seq
WORKFLOW SOLUTIONS



2 adults killed, 7 children injured in ATV crash

Authorities said nine people were riding together on a side-by-side ATV at Indian Mountain ATV Park when it collided with another vehicle. *Fox - 5 Atlanta*

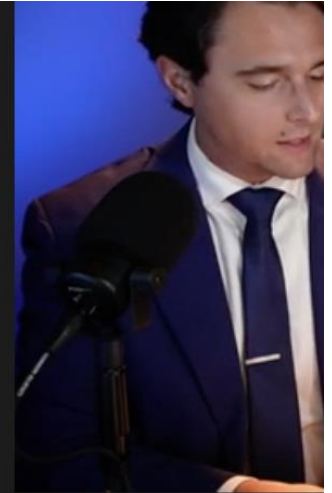
MOBILE COUNTY

Juvenile killed in ATV accident: Mobile police

by: Pat O'Donnell

Posted: Dec 3, 2024 / 07:23 PM CST

Updated: Dec 3, 2024 / 07:23 PM CST



SHARE



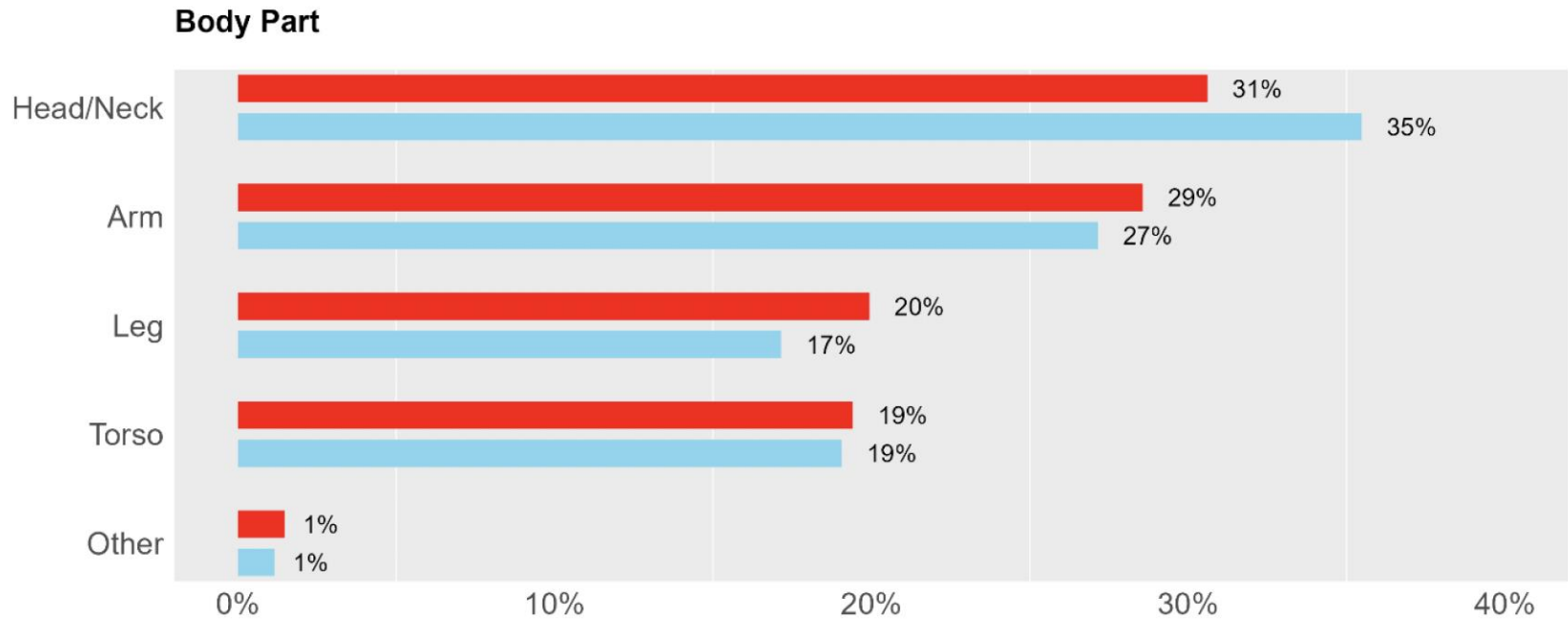
MOBILE, Ala. ([WKRG](#)) — A juvenile was killed in an all-terrain vehicle accident on Tuesday, according to the Mobile Police Department.

Continued
December 2024

National Statistics - Injuries

In 2023, there were an estimated **102,000** emergency room visits related to ATV injuries





Body Part Affected – ATV Incidents




Behaviors Associated with Fatalities

92%+ ATV-related fatalities involve one or more unsafe behaviors


- No PPE – specifically a helmet
- Riding on paved surfaces
- Extra Passengers (25% of those killed)
- Riding ATV larger than recommended
- Speeding
- Use of alcohol/drugs

Approx. 90% of ATV-related injuries and deaths to youth under 16 occur on adult-sized machines





Injury Prevention

- Size Matters!
 - No Passengers
 - Personal Protective Equipment
 - Knowing the environment
 - Pre-ride Inspections
 - Training and Education for parents and youth riders
- 

Policy

SB64 INTRODUCED



1 SB64
2 V4A4VLL-1
3 By Senators Stutts, Gudger, Williams, Givhan, Shelnutt,
4 Chesteen, Stewart, Singleton
5 RFD: Agriculture, Conservation, and Forestry
6 First Read: 07-Feb-24

Alabama 2024 SB64

Motor vehicles, off-road vehicles, use on
public roads, authorized under certain
conditions

Introduced – Dead!

Policy

ELSEVIER
AJPM Focus



▶ AJPM Focus. 2025 Mar 18;4(3):100335. doi: [10.1016/j.focus.2025.100335](https://doi.org/10.1016/j.focus.2025.100335)

An Analysis of ATV and UTV-Related Injuries Pre- and Post-Enactment of West Virginia Senate Bill 690

[Toni M Rudisill](#)^{1,*}, [Jeffrey Beyon](#)², [Patrick C Bonasso](#)³, [James M Bardes](#)³

▶ [Author information](#) ▶ [Article notes](#) ▶ [Copyright and License information](#)

PMCID: PMC12032893 PMID: [40290864](https://pubmed.ncbi.nlm.nih.gov/40290864/)

Abstract

Introduction

All-terrain vehicles and utility task vehicles are associated with a high incidence of injuries, particularly in West Virginia, which has the highest all-terrain vehicle-related fatality rate in the U.S. In 2020, the enactment of the West Virginia Senate Bill 690 allowed all-terrain vehicles and utility task vehicles on public roads, raising concerns about potential increases in injury rates. This study aimed to evaluate the impact of Senate Bill 690 on trauma admissions related to all-terrain vehicle and utility task vehicle injuries at a Level I trauma center in West Virginia.

Significant increase in injuries and fatalities following passage of this legislation allowing ATV/UTVs on roadways.



Demonstration of how speed and terrain can affect handling.



Personal Protective Equipment

Importance of Wearing a Helmet

- **Larger ATV engine size correlates with an increased rate of traumatic brain injury.**
- Butts CC, Rostas JW, Lee YL, Gonzalez RP, Brevard SB, Frotan MA, Ahmed N, Simmons JD. *mInjury*. 2015 Apr;46(4):625-8. doi: 10.1016/j.injury.2014.11.007. Epub 2014 Nov 24. PMID: 25527458.
- **The burden of unhelmeted and uninsured ATV drivers and passengers.**
- Merrigan TL, Wall PL, Smith HL, Janus TJ, Sidwell RA. *Traffic Inj Prev*. 2011 Jun;12(3):251-5. doi: 10.1080/15389588.2011.561455. PMID: 21660891.
- **Conclusions:** *Helmets are frequently not worn by ATV riders. Helmets protect ATV drivers and passengers and decrease societal costs associated with ATV crashes.*



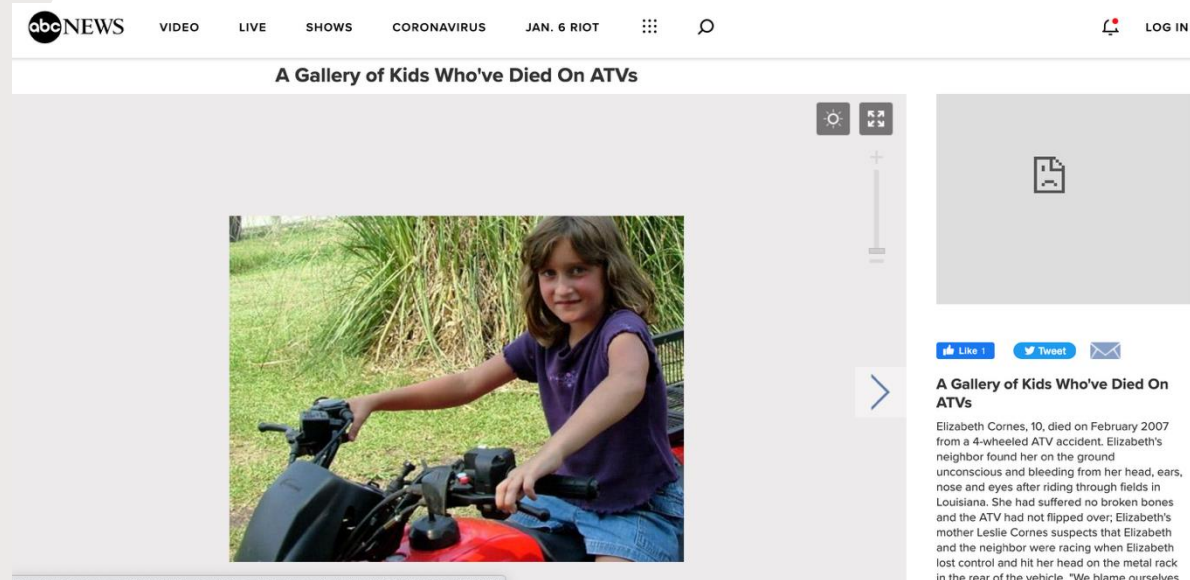
Long Sleeves, Boots and Gloves

Elimination (a favorite)

**Children under 16
never operate or ride
on an ATV over 70cc.**

Barriers to elimination

- Requires adults to eliminate the risk
- Parents, guardians see ATVs as toys/recreation
- Parents, guardians may not understand the hazards
- Children don't have the mental capacity to understand the hazards



Substitution

Options include

- Lighter, lower power ATVs (<70 cc)
- Provides children with the opportunity to “ride” while eliminating the risk of speed and weight (crushing)

Barriers

- Cost
- Lack of understanding regarding the risk of full-sized ATVs



Engineering Controls

Crush protection device “Quad Bar”

ATVs without this device can no longer be sold for agricultural use in Australia

Barriers in the U.S

Cost

This is an aftermarket device so installation required

Acceptance – “not cool”



Administrative Controls

Legislation

- Laws regarding the use of an ATV >70 cc before age 16.
- Laws regarding insuring ATVs
- Laws regarding use of PPE while riding, specifically helmets.
- Education – we more need

Example of Indiana law passed in 2017:

In accordance with Indiana law, beginning July 1, 2017 all children under 18 years are required to wear a helmet on or in any Off-Road Vehicle (ORV). This applies to all ORVs, including but not limited to ATVs, UTV, side-by-side vehicles, and dirt bikes. The law applies both to public and private property.

A large orange circle on the left side of the slide, partially cut off by the edge.


Talking Point

Insurance Coverage

ATV insurance usually covers riders who are at least 16 years old and have a valid driver's license.

However, some insurance policies may explicitly exclude young operators. Additionally, state and provincial regulations may restrict the age of operators. For example, Safeco's minimum operator age is 14, and they don't cover vehicles made for or used by young children.

The death of a young rider on an ATV or UTV that you own can cost you your farm, home and other resources.

A blue dashed line in the bottom right corner, consisting of several short, curved segments.

Innovation in PPE and Safety Initiatives

A brilliant example of
a manufacturer doing
the right thing – even
before they are
“mandated” to do
it....



Industry-leading Safety Features

Enjoy peace of mind knowing all Polaris Youth SxS come with key safety features including safety nets, adjustable speed limiter, geofencing, helmet aware technology, and industry-exclusive safety kit.

EDUCATION!
EDUCATION!
EDUCATION!



ATV Simulator

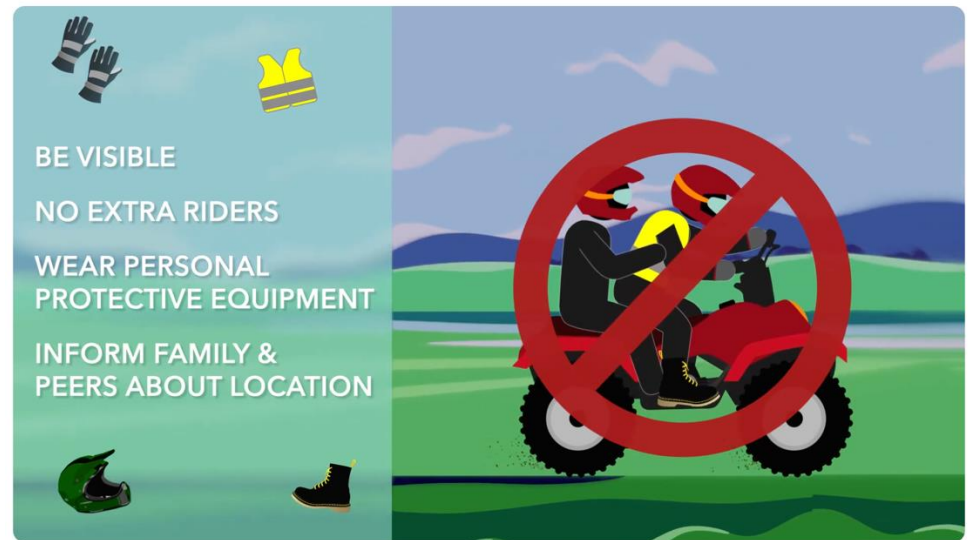
Demonstrates:

- Correct body position
- Why the size of the rider and the machine matter
- How to react in an overturn
- Why PPE matters
-



Training Videos

<https://www.youtube.com/watch?v=3q43E4lQdBQ&t=56s>





Safer ATV Riding on Farms and Ranches



by U.S. Agricultural Safety and Health Centers

Playlist • Public • 9 videos • 1,992 views

▶ Play all



≡ Sort

All

Videos

Shorts

=



Introduction to Safer Riding on ATVs in Agriculture

U.S. Agricultural Safety and Health Centers • 2.3K views • 8 years ago

2:26

=



Clothing and Protective Gear that You Need when Riding your ATV in...

U.S. Agricultural Safety and Health Centers • 5K views • 8 years ago

1:53

=



Know how to operate your ATV controls to improve your safety

U.S. Agricultural Safety and Health Centers • 8.1K views • 8 years ago

1:32

=



Riding Strategies for Improving your Safety on ATVs in Agriculture

U.S. Agricultural Safety and Health Centers • 830 views • 8 years ago

4:29

Uphill, Downhill, Traversing, and Other Advanced Techniques ...

U.S. Agricultural Safety and Health Centers • 19K views • 8 years ago

USAg Centers YouTube Training Videos

<https://www.youtube.com/playlist?list=PLY7XQBihZRNvnrijKCGm9yoYjcQpT1yjnd>



Include EMS and Fire Personnel in Trainings

ATV *RiderCourse*

Hands On ATV Training Courses

The *ATV RiderCourse* is two parts, a 2 hour online e-Course and a hands-on, 2-2.5 hour s-Course conducted by licensed ATV Safety Institute Instructors. The e-Course develops safety knowledge and awareness through interactive activities and video. The course covers protective gear (like DOT-compliant ATV helmets), environmental concerns, riding strategies, and local laws and is a pre-requisite for the hands-on s-Course. The s-Course provides an opportunity to practice basic riding skills.

**GET TRAINED. GO RIDE.
ENROLL NOW.**



Online Training Courses



Partner with Alabama Motorsports Dealers

CS-CASH ATV Resources:

<https://www.unmc.edu/publichealth/cscash/resources/resources-atv-utv-safety.html>

Print

Co-brand

Rebrand

Request hard copies

Share the link

Add your resources to our page

Let's partner!

ATV/UTV Safety

Ag workers rely on many tools and technologies to keep their operations running smoothly, like ATVs or UTVs. These vehicles are particularly useful because they can easily navigate rough terrain and carry heavy loads. However, they can be dangerous if the proper safety precautions are not taken. Find resources for ATV and UTV safety here.



Resources

UTV Resources

[Side-by-Side Safety Flyer](#)

[Side-by-Side Responsible Operation Flyer](#)

[Pre-Operation Inspection Flyer](#)

[Recreational Off-Highway Vehicle Association \(ROHVA\) Website](#)

ATV Safety

[ATV Aware Curriculum Facilitator Guide](#)

[ATV Aware Flyer](#)

[ATV Safety Flyer](#)

[ATV Table Top Demonstration Guide](#)



This short educational stop-motion video describes injury and fatality prevention strategies for ATV riders. Statistics, engineering controls, and equipment maintenance are discussed with a special emphasis on agricultural ATV use.

Resource Page

- **Let's Collaborate!**



CS-CASH Resource Page -

<https://www.unmc.edu/publichealth/cscash/resources/index.html>



All materials can be co-branded and are free of charge.



Photo Sharing Website – Free Agricultural Safety and Health photos that can be used to create educational materials: <https://www.surveymonkey.com/r/9NWCML2>



USAgCenter YouTube Channel – Ag Safety and Health Videos

<https://www.youtube.com/user/USagCenters>



ATV Information by State - <https://www.cpsc.gov/Safety-Education/Safety-Education-Centers/ATV-Safety-Information-Center/State-ATV-Information/>



Tabletop Simulation

Demonstrates concepts regarding center of gravity, hitching and hauling loads

Let's Talk!

Aaron.yoder@unmc.edu

Ellen.duysen@unmc.edu

