



OHV-RELATED DEATHS COMPARISON: QUADS & SIDE-BY-SIDES

August 2026

OHV-related Deaths Comparison: Quads & Side-by-sides

The Injury Prevention Centre resides on the traditional territory of Cree, Blackfoot, Nakota Sioux, Iroquois, Dene, and Ojibway / Saulteaux / Anishinaabe nations; lands that are now known as part of Treaties 6, 7, and 8, and homeland of the Métis. We respect the sovereignty, lands, histories, languages, knowledge systems, and cultures of First Nations, Métis and Inuit nations.

REPRODUCTION

Reproduction, in its original form, is permitted for background use for private study, education instruction and research, provided appropriate credit is given to the Injury Prevention Centre. Citation in editorial copy, for newsprint, radio and television is permitted. The material may not be reproduced for commercial use or profit, promotion, resale, or publication in whole or in part without written permission from the Injury Prevention Centre.

For questions regarding this report, contact:

INJURY PREVENTION CENTRE
School of Public Health,
4-248 Kipnes Health Research Academy,
University of Alberta
11405 87 Ave NW
Edmonton AB, T6G 1C9

Email: ipc@ualberta.ca
Phone: 780.492.6019
Web: www.injurypreventioncentre.ca

SUGGESTED CITATION

OHV-related Deaths Comparison: Quads & Side-by-sides. Edmonton, AB: Injury Prevention Centre, 2026

© 2026 - Injury Prevention Centre, School of Public Health. University of Alberta. *OHV-related Deaths Comparison* is made available under Creative Commons License BY-NC-ND 4.0

OHV-related Deaths Comparison: Quads & Side-by-sides

Executive Summary

This report by the Injury Prevention Centre at the University of Alberta compares fatalities related to Off-Highway Vehicles (OHVs) - specifically Quads (ATVs) and Side-by-Sides (UTVs) - in Alberta between 2002 and 2023.

Key Findings

- **Overall Fatalities:** A combined total of 335 ATV- and UTV-related deaths occurred in Alberta over the study period. This includes 291 quad-related deaths (averaging 14.5 annually from 2002–2011 and 15.0 annually from 2012–2023) and 44 side-by-side-related deaths (averaging 2.6 annually since tracking began in 2007).
- **Mechanism of Injury:** Machine rollovers or flips are the leading cause of fatalities, accounting for 54% of ATV deaths and 75% of UTV deaths.
- **Causes of Death:** Head injuries and multiple traumas represent the majority of fatalities for both vehicle types. Head injuries accounted for 35% of ATV deaths and 34% of UTV deaths.
- **Helmet Non-Compliance:** Helmet use remains critically low. Among cases with documented use, 75% of ATV victims and 88% of UTV victims were not wearing a helmet. Furthermore, 81% of ATV and 82% of UTV head-injury fatalities involved victims who were not wearing helmets.
- **Substance Involvement:** Alcohol and drugs are heavily implicated in fatalities. Over 50% of deceased operators tested positive for alcohol (57% for ATVs and 55% for UTVs). Additionally, 34 drivers tested positive for other substances, such as cannabis, cocaine, and opioids.

Quads (**ATVs**) are 4-wheeled, motorized vehicles that have tires which are often kept at low pressure. Quads have a seat designed to be straddled by the operator, and handlebars for steering control similar to a motorcycle. Some quads may accommodate a passenger as well as the driver.

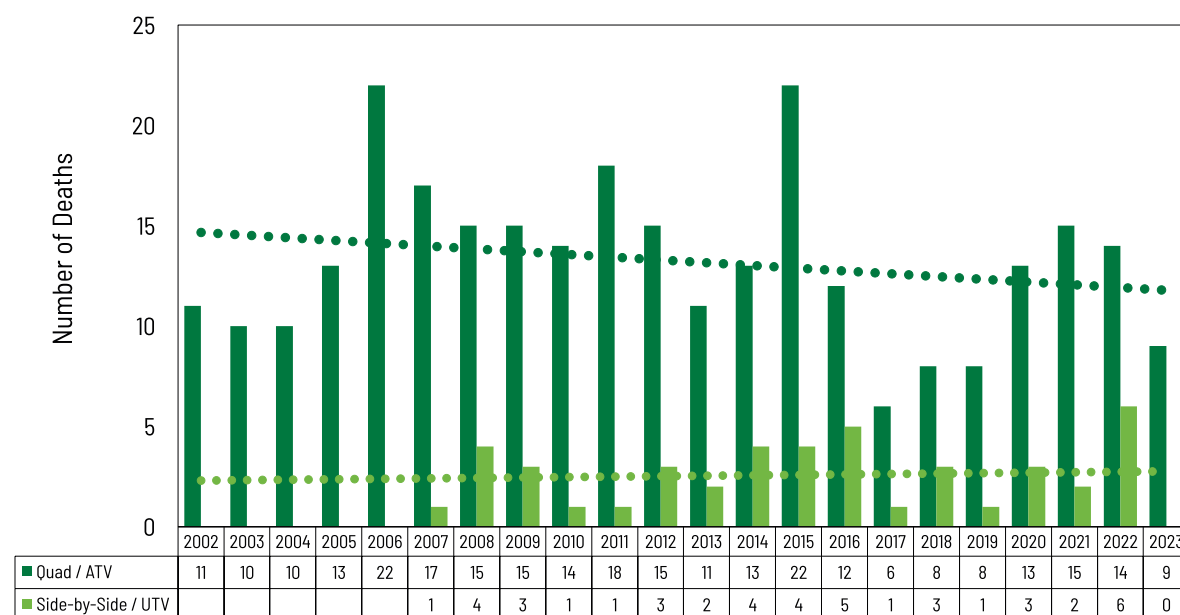


Side-by-Sides (**UTVs**) are utility task vehicles. Their design is similar to a rugged golf cart or dune buggy, with car-like controls consisting of pedals, a steering wheel, and seating close to that of a car or truck, hence the name side by side. They may also have a rear seat.



OHV-related Deaths Comparison: Quads & Side-by-sides

Number of Deaths by Year, Alberta, 2002-2023



Over the 22-year period from 2002 to 2023, there was a total of 291 quad-related (**ATV**) deaths. During the first 10 years (2002 to 2011), there was an average of 14.5 deaths each year. During the latter 14 years (2012 to 2023) there as an average of 15.0 deaths each year.

The first recorded side-by-side-related (**UTV**) death was in 2007. Over the 17 years from 2007 to 2023, there was an average of 2.6 deaths each year.

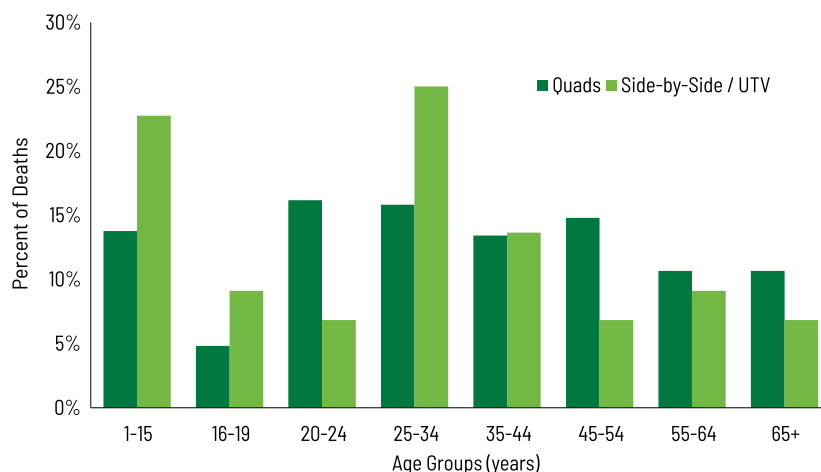
Over the first 8-year period (2007 to 2014), there was an average of 2.4 UTV-related deaths each year. During the latter 8 years (2015 to 2023), there was an average of 2.8 deaths each year.

Combined, there was a total of 335 ATV- and UTV-related deaths between 2002 and 2023 in Alberta.

OHV-related Deaths Comparison: Quads & Side-by-sides

Comparison of Percent of Deaths by Age Group, Alberta, 2002-2023

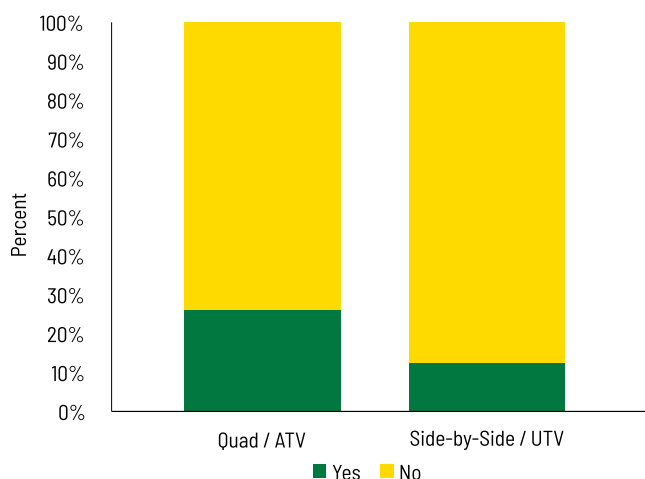
When looking at the percent of deaths by age group from 2002 to 2023 for the quad-related (ATV) deaths, those between 20 and 24 years accounted for 16% (n=47) of all ATV-related deaths. Similarly, those aged 25 to 34 years accounted for 16% (n=46). Those 45 to 54 years of age accounted for 15% (n=43) of all ATV-related deaths. This was followed by those aged 1 to 15 years accounting for 14% (n=40) and those 35 to 44 years of age each accounting for 13% (n=39) deaths. Those 55 to 64 years of age, and those 65 years of age and older, each accounted for an additional 11% (n=31) of deaths.



Those 25 to 34 years of age accounted for 25% (n=11) of the UTV-related deaths. Children aged 1 to 15 years accounted for 23% (n=10) and those 35 to 44 years of age accounted for an

additional 14% of UTV-related deaths (n=6).

Comparison of Percent of Deaths by Helmet Usage, Alberta, 2002-2023



! KEY POINT

Fewer UTV occupants wear helmets than ATV riders.

Of driver- and passenger-related ATV deaths in which helmet use was documented, the majority, 75% (n=159) were **not** wearing a helmet at the time of the incident.

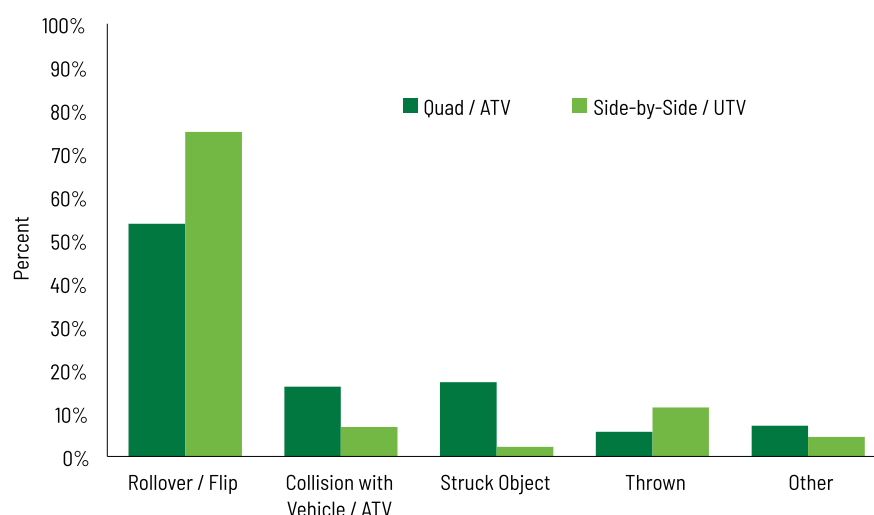
Of the driver / passenger UTV-related deaths, the majority 88% (n=32) were **not** wearing a helmet at the time of the incident.

OHV-related Deaths Comparison: Quads & Side-by-sides

Comparison of Percent of Deaths by Mechanism of Injury, Alberta, 2002-2022

Of the 291 ATV-related deaths, the majority, 54% (n=150) were as a result of a rollover / flip of the ATV. Deaths as a result of striking an object (e.g.: tree or post) accounted for 17% (n=48), and collision with a vehicle or another ATV accounted for 16% (n=45). ATV deaths of 'other' mechanisms accounted for 7% (n=20), and being thrown from an ATV accounted for 6% (n=16).

Of the 44 UTV-related deaths, 75% (n=33) were the result of a rollover / flip. Another 11% (n=5) were the result of being thrown from the vehicle. Deaths as a result of collision with vehicle or another ATV / UTV accounted for 7% (n=3). UTV-related deaths of 'other' mechanisms accounted for 5% (n=2). UTV deaths as a result of striking an object (e.g.: tree or post) accounted for 2%.

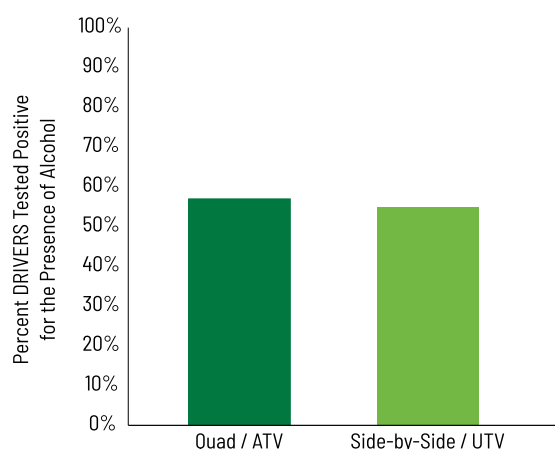


! KEY POINT

Machine rollovers account for the majority of ATV / UTV deaths.

OHV-related Deaths Comparison: Quads & Side-by-sides

Comparison of Percent of Deaths Tested Positive for the Presence of Alcohol, Alberta, 2002-2023



Overall, a total of 143 deceased ATV / UTV drivers tested positive for the presence of alcohol.

57% of the quad / ATV drivers tested positive for the presence of alcohol.

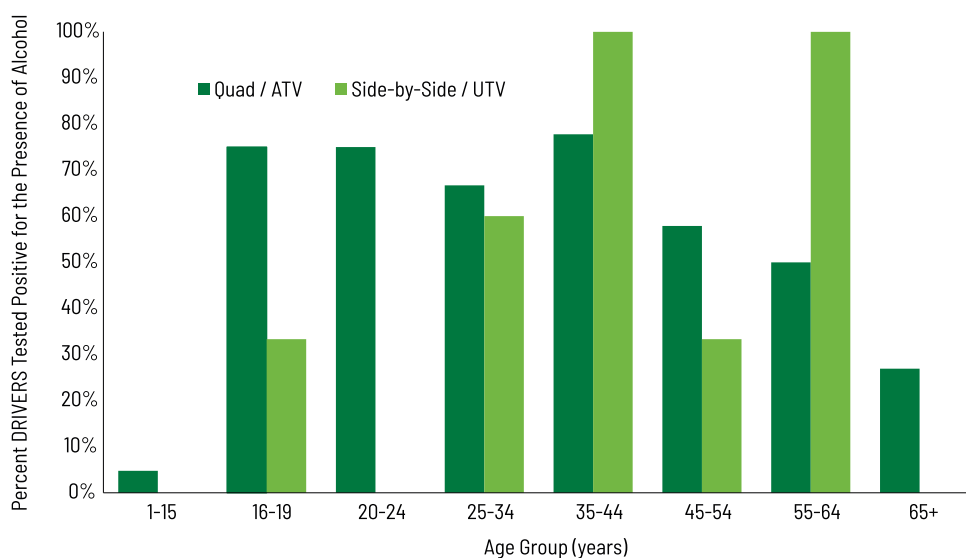
55% of the side-by-side / UTV drivers tested positive for the presence of alcohol.

! KEY POINT

More than half of deceased operators tested positive for the consumption of alcohol.

Comparison of Percent of Deaths Tested for the Presence of Alcohol, Alberta, 2002-2023

A total of 132 deceased quad / ATV drivers tested positive for the presence of alcohol. Seventy-eight percent of ATV drivers between 35 and 44 years of age tested positive for the presence of alcohol. Seventy-five percent of drivers aged 16 to 19 years, and those 20 to 24 years of age tested positive for the presence of alcohol. Sixty-seven percent of ATV drivers 25 to 34 years of age tested positive for the presence of alcohol.



A total of 11 side-by-side / UTV drivers tested positive for the presence of alcohol. All of the UTV drivers age 35 to 44 years of age and all of those 55 to 64 years of

age tested positive for the presence of alcohol. Sixty percent of UTV drivers between 25 and 34 years of age tested positive for the presence of alcohol, while 30% of those 16 to 19 and those 45 to 54 years of age tested positive for the presence of alcohol.

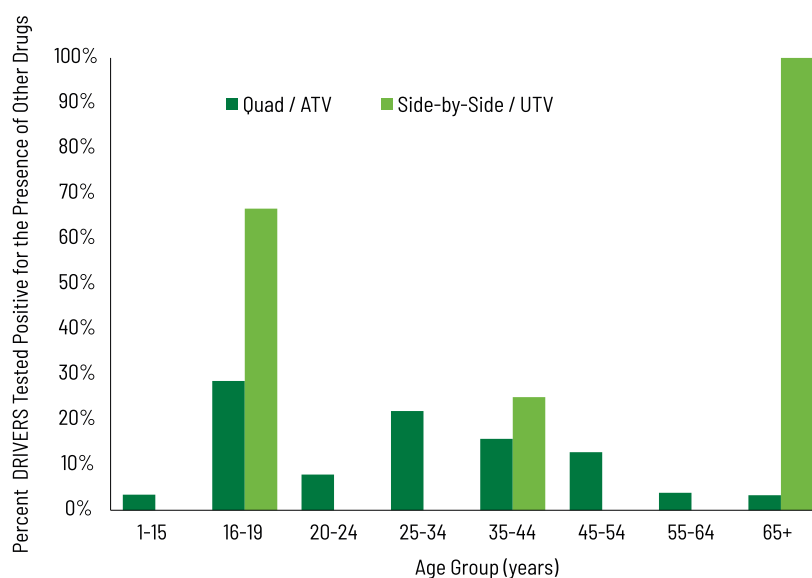
OHV-related Deaths Comparison: Quads & Side-by-sides

Comparison of Percent of Deaths Tested Positive for the Presence of Other Drugs, Alberta, 2002-2022

Overall, there were 34 drivers who tested positive for the consumption of another drug. This would include cannabis, cocaine, amphetamines, opioids, and benzodiazepines.

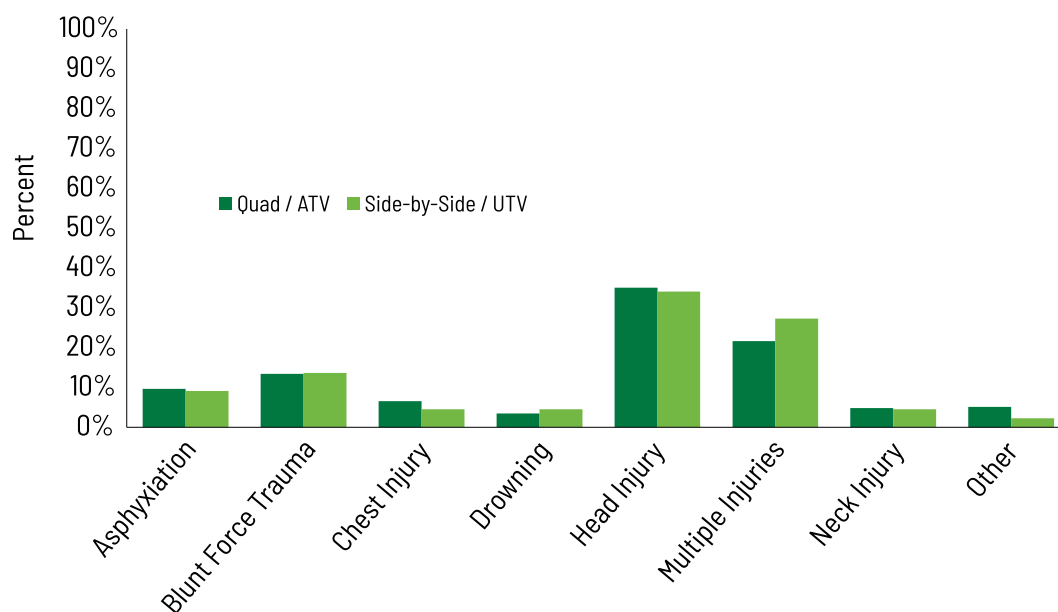
Thirty quad / ATV drivers tested positive for the presence of another drug. Thirty percent of those 16 to 19 years of age, and 22% of those 25 to 34 years of age tested positive for the presence of another drug.

One hundred percent (n=1) of side-by-side / UTV driver tested positive for the consumption of another drug. Sixty-seven percent of drivers between 16 and 19 years of age tested positive for the presence of another drug.



OHV-related Deaths Comparison: Quads & Side-by-sides

Comparison of Percent of Deaths by Cause of Death, Alberta, 2002-2023



Of the 290 ATV-related deaths, 35% (n=102) were the result of head trauma. Another 22% (n=63) of these deaths were the result of multiple traumas. Another 13% (n=39) were the result of blunt trauma, 10% (n=28) were the result of asphyxiation, 7% (n=19) were the result of chest trauma, and 5% (n=15) were the result of other causes. Five percent of these deaths (n=14) were the result of neck trauma, and 3% (n=10) were as a result of drowning.

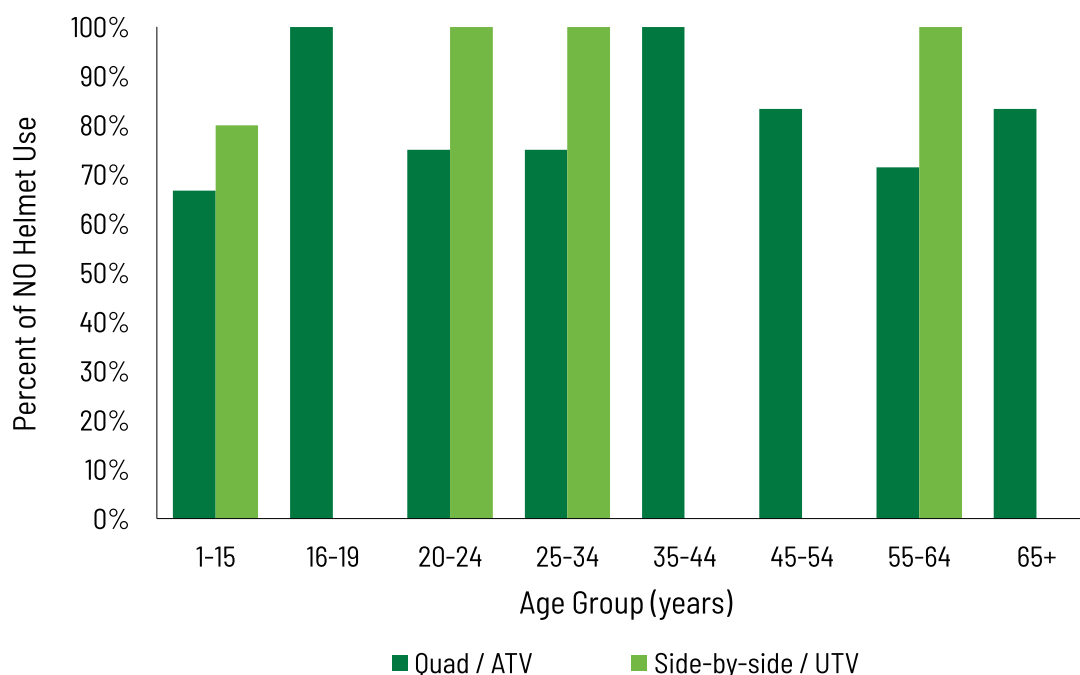
Of the 44 UTV-related deaths, 34% (n=15) were the result of head trauma. Twenty-seven percent of these deaths (n=12) were the result of multiple trauma. Blunt trauma accounted for 14% (n=6) of UTV-related deaths, while chest trauma, drowning, and neck trauma each accounted for another 5%; each with 2 deaths.

! KEY POINT

Helmet use among ATV and UTV users needs to be improved.

OHV-related Deaths Comparison: Quads & Side-by-sides

Comparison of Percent of Head Injury Deaths and No Helmet Use, Alberta, 2002-2022



Of the 107 ATV and UTV driver and passenger deaths resulting from a head injury, there was adequate documentation of helmet use for 85% (n=91).

Of the 80 ATV deaths with helmet use documented, 81% (n=65) of the deceased were not wearing a helmet at the time of the incident. None of those 16 to 19 years of age and those 35 to 44 years of age was wearing a helmet at the time of their death. Eighty-three percent of those aged 45 to 54 and 65 years plus were not wearing a helmet at the time of their death. Seventy-five percent of those 20 to 24 and those 25 to 34 years, were not wearing a helmet at the time of their death. Seventy-one percent of those 55 to 64 years of age were not wearing a helmet at the time of death; likewise for 67% of those 1 to 15 years of age.

Of the 11 UTV deaths with helmet use documentation, 82% (n=9) were not wearing a helmet at the time of their death. None of those 20 to 24 years, 25 to 34 years, nor 55 to 64 years of age was wearing a helmet at the time of their death. Only 20% of those 1 to 15 years of age was wearing a helmet at the time of their death.

Overall, of the 15 UTV-related deaths as a result of a head injury, 14 of the deceased ought to have been wearing a helmet (i.e.: drivers and passengers).

For 11 of those deaths, there was adequate documentation to determine the use of a helmet. Of the 11 UTV-related deaths, only 18% (n=2) of the deceased were wearing a helmet at the time of the incident.

Types of Off-Highway Vehicles (OHVs)



Quad, 4x4 ATV, All-terrain Vehicle, Quad-bike, Four-wheeler.



Sport Quad, 2x4 ATV, Quad-bike, Four-wheeler.



ATC, Trike, Three-wheeler.



Dirtbike, Motocross Bike, Enduro Bike.



UTV, Side-by-side, Utility SxS, Mule, Ute, ROV.



Side-by-side, Sport SxS, ROV.



Argo, 6x6, 8x8, ATAV, Amphibious ATV

Source: Office of the Chief Medical Examiner, Alberta.



If you would like additional information about this or other types of injuries, please visit injurypreventioncentre.ca or contact us via phone at **780.492.6019** or email ipc@ualberta.ca

INJURY PREVENTION CENTRE

4-248 Kipnes Health Research Academy,
University of Alberta
11405 87 Ave NW
Edmonton AB T6G 1C9

tel. 780.492.6019
ipc@ualberta.ca

© Copyright 2026 – Injury Prevention Centre

injurypreventioncentre.ca

Funding and Support

The Injury Prevention Centre receives core business funding from the Ministry of Primary and Preventive Health Services and is part of the School of Public Health at the University of Alberta. Provision of funding by Primary and Preventive Health Services does not signify that this project represents the policies or views of Primary and Preventive Health Services.