



All Terrain Vehicle-Related Deaths Comparison: Quads & Side-By-Sides

July 2024

QUAD (ATV) AND SIDE-BY-SIDE (UTV) INJURY DEATHS

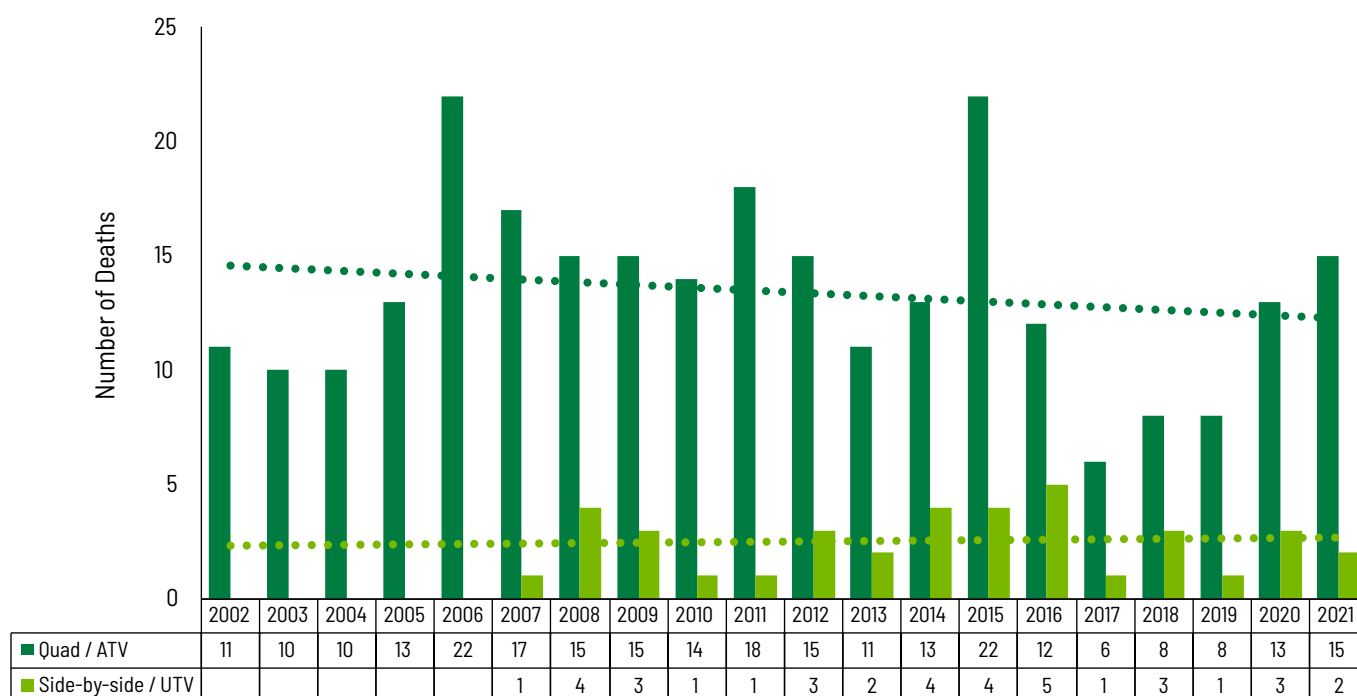
Quads (**ATVs**) are 4-wheeled, motorized vehicles that have tires which are often kept at low pressure. Quads have a seat designed to be straddled by the operator, and handlebars for steering control similar to a motorcycle. Some quads may accommodate a passenger as well as the driver.



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.



Comparison of Number of Deaths by Year, Alberta, 2002-2021



Over the 20-year period from 2002 to 2021, there was a total of 268 quad-related (**ATV**) deaths. During the first 10 years (2002 to 2011), there were an average of 14.5 deaths each year. During the latter 10 years (2012 to 2021) there were an average of 12.3 deaths each year.

The first recorded side-by-side-related (**UTV**) death was in 2007. Over the 15 years from 2007 to 2021, there were an average of 2.5 deaths each year. Over the first 8-year period (2007 to 2014), there were an average of 2.4 UTV-related deaths each year. During the latter 7 years (2015 to 2021), there were an average of 2.7 deaths each year.

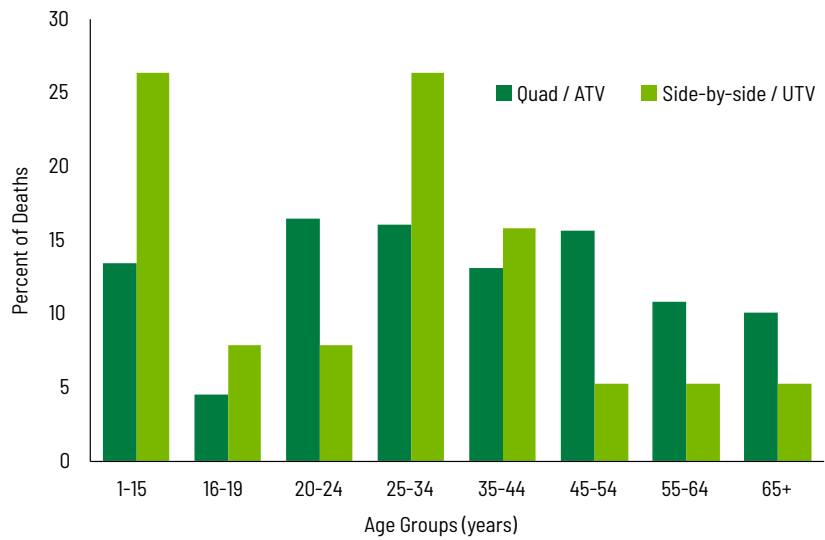
Combined, there was a total of 306 ATV- and UTV-related deaths between 2002 and 2021 in Alberta.

QUAD (ATV) AND SIDE-BY-SIDE (UTV) INJURY DEATHS

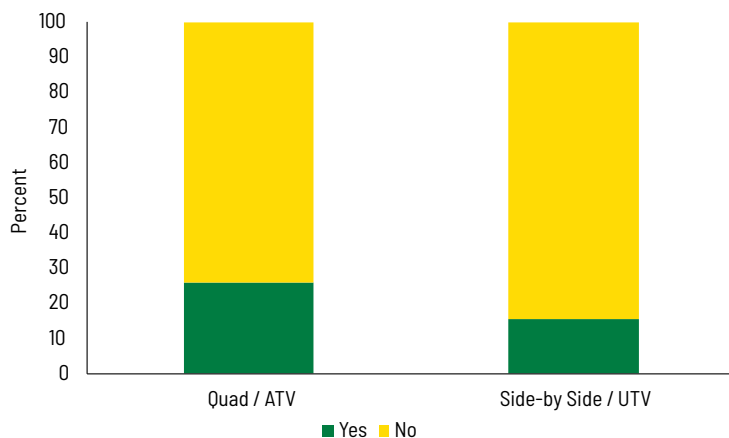
Comparison of Percent of Deaths by Age Group, Alberta, 2002-2021

When looking at the percent of deaths by age group from 2002 to 2021 for the quad (ATV) deaths, those between 20 and 24 years accounted for 16% (n=44) of all ATV deaths. Similarly, those aged 25 to 34 years (n=43) and those 45 to 54 years of age (n=42) each accounted for 16% of all ATV deaths. This was followed by those aged 1 to 15 years, accounting for 13% (n=35), and those 55 to 64 years of age accounting for an additional 11% (n=29) of deaths. Those 65 years of age and older accounted for 10% (n=27) of ATV deaths.

The percent of deaths by age group for the UTV deaths for those 1 to 15 years and 25 to 34 year of age each accounted for 26% of the UTV deaths. Those 35 to 44 years of age accounted for an additional 16% of UTV deaths.



Comparison of Percent of Deaths by Helmet Usage, Alberta, 2002-2021



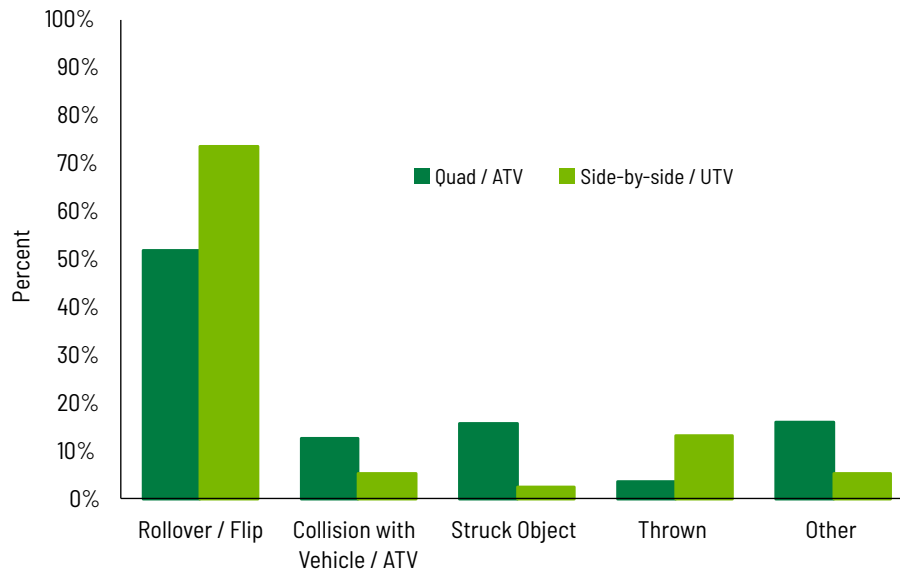
! KEY POINT

Fewer UTV occupants wear helmets than ATV riders.

Of driver and passenger ATV deaths in which helmet use was documented, the majority, 74% (n=145) of the ATV deaths were not wearing a helmet at the time of the incident. Of the driver / passenger UTV deaths, the majority 85% (n=22) were not wearing a helmet at the time of the incident.

QUAD (ATV) AND SIDE-BY-SIDE (UTV) INJURY DEATHS

Comparison of Percent of Deaths by Mechanism of Injury, Alberta, 2002-2021



Of the 268 ATV deaths, the majority, 52% (n=139) were as a result of a rollover / flip of the ATV. Another 16% of deaths (n=42) were the result of striking an object (e.g.: tree or post).

Sixteen percent of ATV deaths (n=43) were attributed to another (unknown) mechanism. An additional 13% (n=34) were as a result of a collision with a motor vehicle.

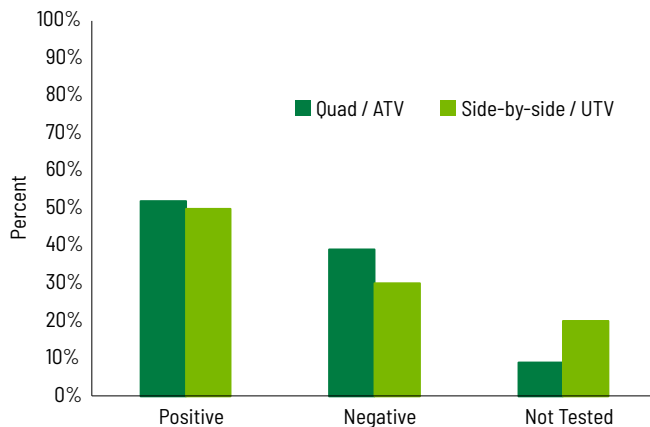
Of the 38 UTV deaths, 74% (n=28) were the result of a rollover / flip. Another 13% (n=5) were the result of being thrown from the vehicle. Both striking an object and other mechanisms each accounted for 5% of the deaths (2 deaths for each mechanism).

! KEY POINT

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

QUAD (ATV) AND SIDE-BY-SIDE (UTV) INJURY DEATHS

Comparison of Percent of Deaths Testing for the Presence of Alcohol, Alberta, 2002-2021



A total of 255 deceased machine operators were tested for the presence of alcohol.

Fifty-two percent (n=122 deaths) of ATV drivers, and 50% (n=10 deaths) of UTV drivers tested positive.

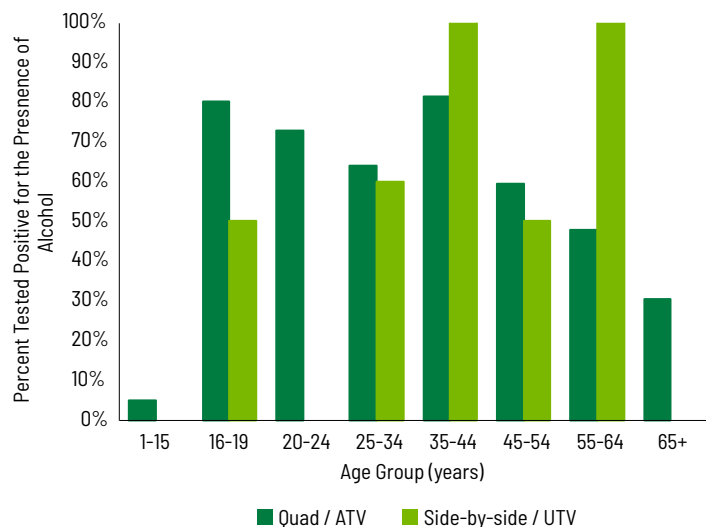
Thirty-nine percent (n=92 deaths) of ATV drivers tested negative for the presence of alcohol, and 30% (n=6 deaths) of UTV drivers, tested negative.

! KEY POINT

Half of deceased operators tested for alcohol consumption were positive.

Comparison of Percent of Deaths Testing for the Presence of Alcohol, Alberta, 2002-2021

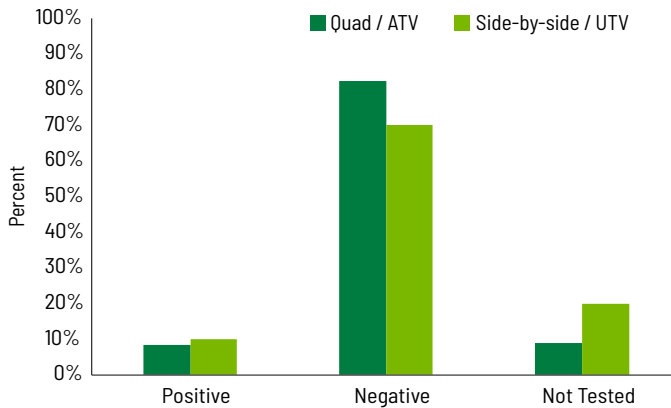
Of the 122 ATV drivers who tested positive for presence of alcohol, those between 35 and 44 years of age had the highest percent of positive tests (81%) and accounted for 26 deaths. This was followed by drivers between 16 and 19 years, of which 80% (n=8 deaths) tested positive for alcohol. Seventy-three percent (n=24 deaths) of the ATV drivers between 20 and 24 years tested positive for alcohol. Sixty-four percent (n=23 deaths) of ATV drivers between 25 and 34 years of age tested positive for alcohol, and 59% (n=22 deaths) of the drivers between 45 and 54 years of age tested positive for the presence of alcohol.



Ten UTV drivers tested positive for presence of alcohol; among those, 100% of drivers between 35 and 44 years of age (n=4), and 100% of those 55 to 64 years of age (n=1), tested positive. Sixty percent (n=3) of UTV drivers between 25 and 34 years tested positive for alcohol. Fifty percent of the drivers between 16 and 19 years (n=1) and those between 45 and 54 year of age (n=1) tested positive for alcohol.

QUAD (ATV) AND SIDE-BY-SIDE (UTV) INJURY DEATHS

Comparison of Percent of Deaths Testing for the Presence of Cannabis, Alberta, 2002-2021



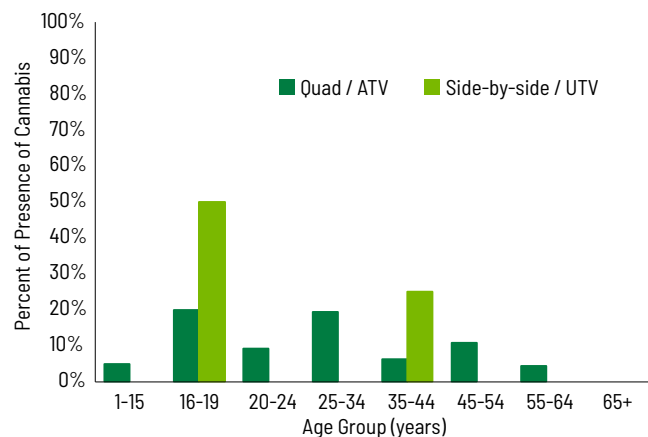
A total of 255 deceased machine operators were tested for the presence of cannabis.

The majority (83%) of ATV drivers (n=194 deaths), and 70% (n=14 deaths) of UTV drivers tested negative for the presence of cannabis.

Nine percent (n=20 deaths) of ATV drivers tested positive for the presence of cannabis, and 10% (n=2 deaths) of UTV drivers tested positive for cannabis.

Comparison of Percent of Deaths Testing for the Presence of Cannabis, Alberta, 2002-2021

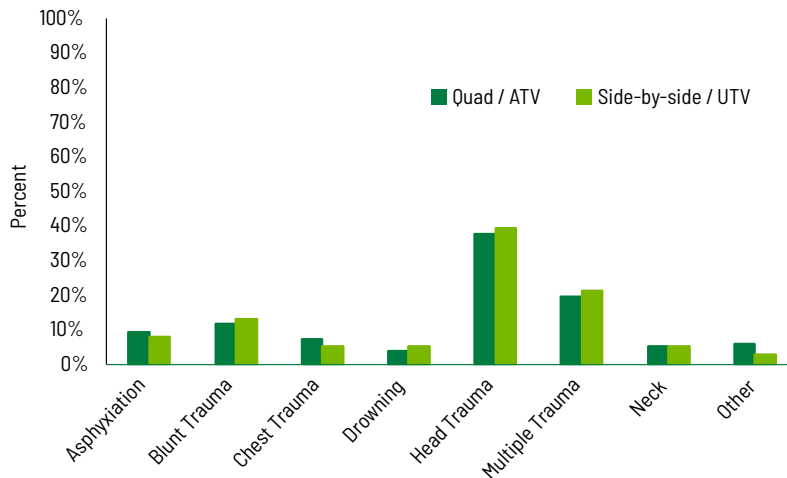
There were 20 ATV drivers who tested positive for the presence of cannabis. When we analyze the percentages by age group of those tested and those who tested positive, 1 driver out of 20 (5%) between 1 and 15 years of age tested positive for cannabis. Two drivers out of 10 in the 16 to 19 years of age group were tested; 20% of those tested positive for cannabis. Those between 20 and 24 years of age had 3 drivers test positive for cannabis (9%) of the 33 drivers tested. Those between 25 and 34 years of age had 7 drivers out of 36 drivers tested (19%), tested positive for cannabis. Those between 45 and 54 years of age, out of 37 drivers tested, 4 tested positive for cannabis (11%).



Those 55 to 64 years of age, out of the 23 drivers tested for cannabis, 1 driver tested positive (4%). Of those 65 years of age and older, of the 23 drivers tested for the presence of cannabis, zero drivers tested positive.

QUAD (ATV) AND SIDE-BY-SIDE (UTV) INJURY DEATHS

Comparison of Percent of Deaths by Cause of Death, Alberta, 2002-2021



Of the 268 ATV deaths, 38% (n=101) were the result of head trauma. Another 19% (n=52) of these deaths were the result of multiple traumas. Another 12% (n=31) were the result of blunt trauma, 9% (n=25) were the result of asphyxiation, 7% (n=19) were the result of chest trauma, and 6% (n=16) were the result of other causes. Five percent of these deaths (n=14) were the result of neck trauma, and 4% (n=10) were as a result of drowning.

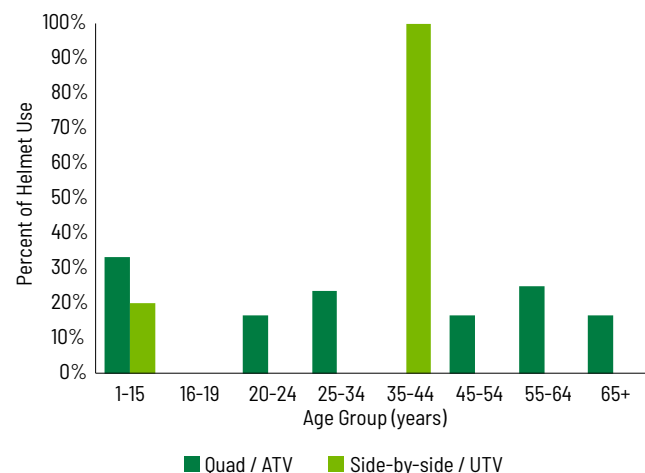
Of the 38 UTV deaths, 39% (n=15) were the result of head trauma. Twenty-one percent of these deaths (n=8) were the result of multiple trauma. Blunt trauma accounted for 13% (n=5) of UTV deaths, while chest trauma, drowning, and neck trauma each accounted for another 5%; each with 2 deaths.

Comparison of Percent of Head Injury Deaths and Helmet Use, Alberta, 2002-2021

Of the 101 ATV deaths resulting from a head injury, 99 of the deceased should have been wearing a helmet according to the *Alberta Traffic Safety Act* (i.e.: drivers and passengers).

Of those 99 deaths (i.e.: drivers and passengers), there was adequate documentation of helmet use for 82 cases. Of the 82 deaths, only 17% (n=14) of the deceased were wearing a helmet at the time of the incident.

Overall, of the 15 UTV 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 deaths, only 18% (n=2) of the deceased were wearing a helmet at the time of the incident.

! KEY POINT

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

TYPES OF OFF-HIGHWAY VEHICLES



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



ATC, Trike, Three-wheeler.



Dirtbike, Motocross Bike, Enduro Bike.



UTV, Side-by-side, Mule, Ute, ROV, Recreational Off-highway Vehicle.



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

If you would like additional information about quad-related injuries or other types of injuries, please visit <http://injurypreventioncentre.ca> or contact us via phone at **780.492.6019** or email **ipc@ualberta.ca**



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