

# NEWS FROM THE PIT

Arizona Poison and Drug Information Center



## Spilling The Tea on the 7 T's

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Picture this, imagine you are working in the emergency department of a hospital, when you overhear a patient is being brought in for a suspected venomous snake bite. Who is the person in your mental image? Is it a drunk male in his twenties? Perhaps they have several visible tattoos? Do you assume this resulted from their choice to intentionally mess with a dangerous animal? If so, your perception aligns with a decades old mnemonic known as the “7 T’s”.

In the 1980’s, a study was conducted describing the characteristics of snakebite patients to guide educational efforts aiming to reduce the number of snake bites. This resulted in certain attributes identified by a single center study, at one point in time, becoming broadly applied and persisting to this day. This perception didn’t match with our perception of who the typical snake bite patient was, so we decided to investigate the matter.

### NEWSLETTER HIGHLIGHTS

Discussion of attributes historically associated with snakebite patients

**Image 1: Arizona black rattlesnake (*Crotalus cerberus*)**

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## The 7 T's

Testosterone. It simply means men are more likely to be bitten than women. Our data found that 70% of snakebite patients are male. About 43% of our adult male patients and their circumstances commonly include bites near their house while gardening, taking out the trash, or cleaning out a shed. Occasionally, a few people each year will mistake a snake's rattle for the sound of water. This usually results in them reaching into a bush or irrigation system, then being struck on the hand.

Teasing. This refers to patients who did something intentionally interacting with the snake, during which they were bitten. In the snakebite literature, teasing is referred to as an "illegitimate snakebite". The legitimacy of a snakebite is defined by whether the patient was aware of the snake prior to being bitten. This particular phrasing goes back to at least the 1950's, with possible origins coming from a 1927 publication describing how professional snake handlers seemed to have worse outcomes when bitten. The intent of utilizing this language in the realm of public health education, was to identify populations where targeted education may have the most impact. Nowadays, we feel all Arizona citizens should understand the importance of situational awareness regarding rattlesnakes as well as the dangers of envenomation. We discourage the use of the term "illegitimate" in any medical literature as it introduces the potential for clinician bias regarding patient treatment. From a medical perspective, the legitimacy of the circumstances around envenomation has no bearing on the clinical course and the term illegitimate may come across as referring to a dry bite (meaning venom was not injected). We found that only 19% of our patients were aware of the snake prior to being bitten.

Truck. Refers to rattlesnake bites being more prevalent amongst rural communities. We found only 7% of bites occurred in rural counties, as defined by RUCA scoring. It is important to note that inequalities in population densities amongst counties should be related to the number of snakebites, as it takes both a human and a snake to generate a snakebite victim.



**"Circumstances commonly include bites near their house while gardening, taking out the trash, or cleaning out a shed."**





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Tequila. It's a common misconception that snakebite patients are typically intoxicated at the time of the bite, leading to increased risk-taking behavior. Why else would anyone ever choose to intentionally handle an animal capable of rapidly causing harm? Although alcohol does make you a bit more confident, it is not a common denominator amongst all snakebite patients and plenty of "legitimately" bitten patients were consuming alcoholic beverages around the time of envenomation. We found alcohol is not routinely part of the equation and only 5% of patients were consuming alcohol at the time of their bite. Of those drinking alcohol, 57% intentionally interacted with the snake, suggesting simultaneous alcohol and venomous animals may be a poor life choice.

The remaining T's include tattoos, tank tops, and toothless. These terms are an offensive and inappropriate attempt at determining a patient's socioeconomic status. At the AzPDIC we take a firm stance on this matter and strongly discourage their use, as we believe they have no place in modern medicine.

## Common Risk Factors

Though most of our snakebite patients are male, it is not the end all be all. About a third of our bites occur right at home while in the yard, driveway, or by the pool. In addition, children are more commonly bitten while playing in a sandbox or while near a bush. Many times, children are bitten while mistaking a snake for a stick, rock, or toy. Quite often patients, regardless of age, are bitten while walking outside barefoot. Additionally, many patients inform us they did not see or hear the snake until after.

Certain months such as August and September are prime times for bites. In fact, 40% of bites occur during these two months, and almost 50% of snakebites occur in the evening from 4pm-10pm. The end of the day is an opportune time for snakes to be out and about due to cooler temperatures. Like humans, snakes also prefer beautiful 80-degree weather.

In the end, based on our experience the typical snake bite patient is a male in their 40's who is gardening, pulling weeds, doing yard work, or landscaping. Now maybe you're asking, if all of this is true, then why do I mainly hear the stories about young males getting bit? Well, which story would you rather hear about, the one about the little old lady who is gardening, reached into a bush and got bit by a snake? Or the one about the drunk guy who picked up a snake to play with and got bit by his hand next to his ironic "Bite Me" tattoo? One of these is more common and one is more memorable, which story would you tell? In advertising and media, sex sells. In the world of toxicology, venture and questionable life choices equate to job security.

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## Prevention Tips

Having an accurate idea of who might be most likely to get bitten by a snake allows us to better target which group of people need prevention training. Here are some tips to prevent getting bit this snake season:

1. Use a flashlight when walking outside or while taking out the trash at night.
2. When gardening, be sure to look around before reaching down.
3. Avoid reaching into sheds, bushes, or holes where you can't reliably see.
4. Overall, be vigilant about maintaining your situational awareness with any outdoor activities!



**The authors, Jennifer Ramirez (right) and Raman Kaur (left)**