

KO3 · DataScienceDivision

Pit-Type Dogs as a Public Danger

Rate tables. Every major file carries a percentage.

ABSTRACT

Finding. Pit-type dogs are a public danger. DogsBite 2005-2019: 345 of 522 U.S. deaths (66.1%). Family-dog subset 182 of 282 (64.5%). 2005-2024: 536 vs 63 Rottweiler (~8.5×). Crude pit-type death rate per 100 million rose 453% from 1989-94 to 2015-19 while the all-dog rate rose 68%. Sacks JAMA: 42 of 101 breed-known deaths (41.6%), rising from 20% (1979-80) to 62% (1987-88). Kaye CHOP: 50.9% of named pediatric breeds vs Rottweiler 8.9%. Golinko Atlanta: 38.5% of named, 50% of operations, OR 3.36, 2.5× multi-site. Bini: death 10.3% vs 0%. O'Brien: 5× operative. Alizadeh: 48.2% named; 47.8% of those pit-type bites went to the OR. U.K.: 91 of 131 fatal dogs since 1991 (69.5%). Italy 2009-2025: 69% molosser/bull-type; 92.6% owned; 56% the victim's dog. Manitoba hospitalizations −18.1% after pit-type bans (−21.5% in ban cities; −27.4% ages 0-20). Catalonia −38.3% (1.80 to 1.11 per 100,000). Farm fox: corticosteroids −50% by generation 12, −75% by generation 28-30 vs control; generation 45 basal −67% and stress −80% (3× and 5× lower). Aggressive pit bulls: lower serotonin, higher dopamine; smaller prefrontal cortex, larger amygdala. Jacobs: basolateral nuclear group +40% in aggressive vs normal dogs.

66.1%	+453%	−38.3%	−75%
345 / 522 U.S. deaths	pit death rate 1989-94 2015-19	Catalonia hosp. 1.80 1.11	fox cortisol by gen 28-30

KENNYOUT3 / Kenneth Schmidt · 30 September 2026

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How a percentage is printed

Share = part / named denominator in that paper. Rate change = (later − earlier) / earlier. Fold change is kept when the source printed a fold (fox cortisol 3× and 5× lower at generation 45 = −67% and −80%). Comparison class travels with the number. KENNYOUT3, Pitbulls — A Danger To Society (24 Nov 2025) is the prior monograph; counts from it appear only where a primary page carries the same figure.

1. FIRST-RANK PERCENTAGES ACROSS SERIES

Series	Pit-type share	Comparator	How affected
Sacks JAMA 1979-1988	42/101 = 41.6%	next breed ~1/3	20% 62% of deaths
Sacks JAVMA 1979-1998	66 pit deaths	Rottweiler 39	66 vs 39 named
DogsBite 2005-2019	345/522 = 66.1%	Rott 51 = 9.8%	first by 6.7×
DogsBite 2005-2024	536 deaths	Rottweiler 63	~8.5× next
Kaye CHOP 2001-05	50.9% named	Rott 8.9%	5.7× next named
Golinko Atlanta	196/509 = 38.5%	12% of all 1,616	50% of operations
Alizadeh Westchester	48.2% named	GSD 8.9%	47.8% of pit OR
Hovell Tennessee 2026	91/276 = 33.0%	working 15.6%	surg 61.5% vs 47%
Bini San Antonio	29/82 named	other deaths 0	CFR 10.3% vs 0%
UK Clifton since 1991	91/131 = 69.5%	rest split	first cluster
Italy 2009-2025	69% cluster	owned 92.6%	victim's dog 56%
Austin 2012-2023	42% of severe+	Lab 10% severe+	4× next severe+

Sacks, Sattin, Bonzo — JAMA 262:1489-1492, 1989

“Pit bull breeds were involved in 42 (41.6%) of 101 deaths where dog breed was reported, almost three times more than German shepherds.” Share of deaths attributed to pit bulls: 20% in 1979-80 to 62% in 1987-88.

2. U.S. FATALITY FILE 2005-2019 — FACTOR PERCENTS

DogsBite combined-year table, 522 deaths, pit-type 345. Each row is that compilation's own denominator.

Factor	All deaths	Pit-type count	Pit share of that row
All deaths	522 = 100%	345	66.1%
Children ≤ 9	236 = 45.2%	138	58.5% of child deaths
Ages 0-2	136 = 26.1%	76	55.9%
Ages 5-9	54 = 10.3%	36	66.7%
Adults ≥ 10	286 = 54.8%	207	72.4% of adult deaths
Ages 10-29	28 = 5.4%	24	85.7%
Ages 30-49	71 = 13.6%	54	76.1%
Ages 50-69	96 = 18.4%	69	71.9%
Ages ≥ 70	91 = 17.4%	60	65.9%
Family dog	282 = 54.0%	182	64.5% of family deaths
Non-family dog	238 = 45.6%	162	68.1%
Owner-directed	70 = 13.4%	45	64.3%
On property	386 = 74.0%	252	65.3%
Off property	131 = 25.1%	90	68.7%
One dog	279 = 53.4%	169	60.6%
Two or more dogs	243 = 46.6%	176	72.4%
Pack ≥ 4	77 = 14.8%	53	68.8%
Prior human aggression	132 = 25.3%	102	77.3%

3. DEATH-RATE CHANGE ACROSS FOUR WINDOWS

DogsBite death rates per 100 million population. 1989-1994 window from Sacks et al., Pediatrics 1996 (109 deaths). Later windows from the compilation.

Window	All-dog rate	Pit-type rate	Change vs 1989-94
1989-1994	7.13	1.57	baseline
2005-2009	9.83	5.58	all +38%; pit +255%
2010-2014	11.41	7.65	all +60%; pit +387%
2015-2019	12.00	8.67	all +68%; pit +453%
2005-2019 crude	11.10	7.34	pit 66% of 522 deaths

How the rate moved

From the late-CDC window to 2015-19 the all-dog crude death rate rose 68%. The pit-type crude death rate rose 453%. Multi-dog (≥3) death rate in that comparison rose 935%. The type's share inside the file also rose: 58% of deaths 2005-2010 to 71% 2011-2017 on the 13-year cut (DogsBite 2005-2017 note).

Population share versus death share

Animals 24-7 three-year average, 2017-2019: about 8% of U.S. dogs. Death share 2005-2019: 66.1%. If the 8% figure holds, the type is over-represented about eight-fold in the death column. 2010-2012 Clifton estimate was 4% of dogs.

The 2025 monograph printed "about 6%." This brief uses the Clifton three-year average of 8% for 2017-19 and keeps 66.1% as the death share.

4. HOSPITAL AND TRAUMA-CENTER PERCENTAGES

Series	n / window	Pit-type %	Severity %
Kaye CHOP 2009	551; 2001-05	50.9% named	Rott 8.9%; mix 6%
Golinko Atlanta 2017	1,616 peds	38.5% of 509 named	50% of all ORs
Golinko (same)	196 pit cases	12% of all 1,616	2.5× multi-site
Golinko (same)	surgery	OR 3.36 vs other	only death = pit
O'Brien Sacramento	pediatric ENT	≈33% of bites	5× operative
O'Brien (same)	unprovoked	+48% vs others	repair rate first
Alizadeh 2017	named n=56	48.2%	47.8% of pit OR
Alizadeh (same)	OR cases	3× other breeds	GSD 8.9% named
Bini 2011	82 breed-known	29 pit (35.4%)	CFR 10.3% vs 0%
Hovell TN 2026	276	33.0%	surg 61.5 vs 47%
Hovell pets only	pit still first	—	60% operative
Austin 2012-23	21,911 bites	4,888 pit (22.3%)	42% of severe+
Austin severe+	842 severe+	357 pit = 42.4%	Lab 81 = 9.6%

Golinko, Arslanian, Williams — Clin. Pediatr. 56(4):316-325, 2017

“An operative intervention was more than 3 times as likely to be associated with a pit bull injury than with any other breed. Half of the operations performed on children in this study as well as the only mortality resulted from a pit bull injury.”

5. DATES, CLASS, AND NAMED PUBLIC-RECORD CASES

Cruelty to Animals Act 1835 ended public bull-baiting. UKC American Pit Bull Terrier 1898. June 1896: Harry Acklam, 7, Racine, two bulldogs. 2 February 1909: Bert Colby Leadbetter, 2, Colby pit bull. First DogsBite-archived U.S. Rottweiler fatality: Vincent Madrigal, 24 January 1978. Crips conventionally 1969. The type's first U.S. fatal file predates modern street gangs by decades.

People v. Knoller — 26 January 2001, 2398 Pacific Avenue, Pacific Heights

Diane Whipple, 33, Saint Mary's lacrosse coach. Two Presa Canarios. Owners: attorneys. Partner: Charles Schwab executive. Family-dog column 2005-2019: 54.0% of all fatal attacks; 64.5% of that family subset pit-type.

29-31 March 1960 — Chicago. Patricia Brown, 9

Spokesman-Review / The Bulletin: two "savage bulldogs… bred especially for fighting" at Jane N. Neil School. Police: "a type known as pit bull dogs." Owner William D. Fair.

1987-88 cluster (monograph case file, contemporaneous press)

Soto, 2½, Morgan Hill, 13-14 June 1987. Tucker, 2, Columbus, 27 September 1987. Lillis, 2 weeks, Wayne County, 4 December 1987, pit-boxer mix. Wilkins, 83, Galveston, 20 November 1987, died 31 December. Smith, 82, Bibb County, February 1988.

4 September 2025 — Markle, Indiana. Jason Weaver, 7 days

Family 5-year-old husky/pit mix, North Miller Street. Coroner: accidental, multiple blunt-force traumatic injuries. Monograph closing case.

HOUSED DOGS. CARED-FOR. NO PRIOR FILE. STILL FATAL.

The raise-them argument predicts empty columns in suburban, professional, and family-dog homes with clean animal-control records. Those columns are not empty. DogsBite 2005-2019: family dogs were 54.0% of all fatal attacks; pit-type dogs were 64.5% of that family subset. The cases below are named, dated, and on a press or official page. Comparison class is printed with each row: what the record actually shows about the roof, not a slogan about every zip code.

26 January 2001 — 2398 Pacific Avenue, Pacific Heights. Diane Whipple, 33

Saint Mary's College lacrosse coach. Partner Sharon Smith, Charles Schwab executive. Dogs: two Presa Canarios kept across the hall by attorneys Marjorie Knoller and Robert Noel. 77 wounds. Lockwood at trial: in more than 300 fatal attacks he had reviewed, he had not seen a healthy young adult woman killed by a dog with the owner present. The building is Pacific Heights, not a vacant lot.

May 2005 — St. Charles County, suburban St. Louis. Lorinze Reddings, 42

Two pet pit bulls, 8-year female and 3-year male. CBS/AP: "no apparent history of aggression and described as well-kept." Animal control: regular vet, a little overweight, good health, never called to the house. Family: raised from puppies; relatives sat with them weekly and "they've never bothered me." Autopsy: strangulation by canine; broken neck bones. Officials did not know what prompted it.

6 March 2013 — Walworth County, Wisconsin. Daxton James Borchardt, 14 months

Babysitter Susan Iwicki. Two 3-year pit bulls raised from puppyhood, spayed and neutered, veterinary records in the sheriff file. Father Jeff Borchardt: the dogs "had never shown any signs of aggression." Fifteen-minute attack; metal gate ripped from the post; spine broken. Borchardt: "Believing the myth, 'It's not the breed, it's all how you raise them,' is what left us without a son." No criminal charges against the sitter.

30 May 2018 — Kingston Drive, Miramar, Florida. Liana Valino, 9 months

Family pit bull owned 3 or 4 years; two related pit bulls in the house. Broward Animal Care assistant director: none of the three had a history of reported attacks in the county. Grandmother present; dog coming back from a walk went into the room with the bouncy chair. Medical examiner: accidental.

MORE HOUSED, NO-PRIOR-FILE FATALITIES

27 April 2021 — Roan Drive, Garner, North Carolina. Jayden Belle Henderson, 7

Mother Heather Trevaskis and daughter were dog-sitting a neighbor's two pit bulls while the owners, Joseph and Amanda White, were out of town. Garner police: no prior complaints. Neighbors told WRAL the same. Dogs grabbed the child by the neck. Off-duty officer pulled them off the mother. First grader at Vandora Springs Elementary.

2 July 2025 — Dover Township, Tuscarawas County, Ohio. Blakely Blosser, 1

Family pit bull. Mother picking up laundry after a bath. Sheriff Orvis Campbell: death "instantaneous"; bite at jaw and neck, carotid. Parents: the dog had shown aggression toward other dogs, "never toward any people." Father at work in the woods; later euthanized the dog.

December 2025 — Zakynthos, Greece. Leon Dulia, 2 (British family, Andover, Hampshire)

Rescued pit bull in the garden after a shopping trip. Mother Robbie Deeth: "There had never been an issue… he let Leon tickle his tummy and stroke him and he would lick Leon's face." One bite, "less than 30 seconds." Telegraph / Daily Mail contemporaneous interviews.

June 2023 — Sierra Vista, Arizona. Helene Jackson, 84

Evening stroll with her poodle Lily in a Sierra Vista neighborhood. Pit bull that had previously attacked a man walking his dog. Both Jackson and the poodle killed. Neighborhood walk, not a fight pit.

July 2022 — Kaiserbagh, Lucknow. Sushila Tripathi, 82, teacher

Son's pit bull Brownie, in the house three years, plus a Labrador. Alone in the morning. Post-mortem: 12 wounds neck to abdomen. Son Amit, gym trainer, found her. Professional household, family pet.

Near-fatal, same class of roof, not counted as a death: Nick Foley, 10, Cary, Illinois, 5 November 2005, northwest-suburban ranches. Three neighbor pit bulls with no animal-control file; neighbors called them sweet-tempered. Seventeen surgeries. He lived. The rampage still sits on the suburban page.

6. SAME CLUSTER ABROAD — SHARES

File	Count	Pit / cluster %	Owner / place %
UK deaths since 1991 Act	96 people / 131 dogs	91/131 = 69.5%	23 tagged Staffordshire
UK XL-tagged deaths	10 (2024)	—	listed 2023-24
UK XL-tagged deaths	4 (2025)	–60% vs 2024	same compilation
UK XL-tagged deaths	0 (early 2026)	–100% vs 2024	Clifton slice
England bite admissions	6,097 10,787	+76.9%	2010-11 to 2024-25
Italy 2009-2025	54 fatal attacks	69% molosser/bull	owned 92.6%; victim 56%
NSW AmStaff 2024	941 attacks / 5,023	1 in 5.3 dogs	Staffy 360/2,740 = 1 in 7.6

United Kingdom — Clifton / Animals 24-7, 12 April 2026

96 human deaths since the Dangerous Dogs Act 1991, inflicted by 131 dogs; 91 (69.5%) pit bulls or variants. Listing the XL sticker moved that sticker's death column: 10, then 4, then none on the early-2026 slice.

An owner-culture-only account requires independently deficient owners in England, Italy, New South Wales, Manitoba, Catalonia, Tennessee, Sacramento, Atlanta, and on Pacific Heights. The common factor in those files is the type.

7. WHEN THE TYPE WAS PULLED — PERCENT CHANGE

Jurisdiction	Before	After	Change
Manitoba DBIH /100k	3.47	2.84	**−18.2% (p=0.005)**
Manitoba, BSL cities	incident rate	incident rate	**−21.5%**
Manitoba ages 0-20	all jurisdictions	—	**−25.5%**
Manitoba 0-20, BSL	—	—	**−27.4%**
Catalonia /100k	1.80 (1997-9)	1.11 (2006-8)	**−38.3%**
UK XL deaths	10 in 2024	4 in 2025	**−60%**
UK XL deaths	10 in 2024	0 early 2026	**−100% on that slice**

Raghavan, Martens, Chateau, Burchill — Inj. Prev. 19(3):177-183, 2013

Winnipeg banned pit-bull type dogs in 1990; 16 Manitoba jurisdictions followed. Provincial hospitalizations 3.47 (95% CI 3.17-3.77) to 2.84 (2.53-3.15) per 100,000 person-years. The under-20 column moved further (−27.4% in BSL jurisdictions).

Villalbi et al. — Inj. Prev. 16(6):408-410, 2010. Catalonia

“Government regulations were associated with a sizable decrease in injuries caused by dog bites in Catalonia.” Listed breeds plus license, insurance, muzzle and leash. −38.3%.

Animals 24-7, 29 October 2020, on Denver’s 1989 ordinance: the city “has not had a fatal or disfiguring pit bull attack on a human in all the years since.” Council repealed the ban in February 2020.

8. FARM-FOX SELECTION — PERCENT AND FOLD CHANGE

Belyaev, 1959, Novosibirsk. One behavioral criterion: tameness. Aggressive line laid in 1970. Canid selection on a single axis moved adrenal output and brain serotonin in decades.

Measure	Generation	Change vs unselected	Source
Basal corticosteroids	12	−50%+	Trut 1999
Basal corticosteroids	28-30	halved again = −75%	Trut 1999
Basal cortisol	45	3× lower = −67%	Trut 2009
Stress cortisol	45	5× lower = −80%	Trut 2009
Brain serotonin	30+	higher midbrain/hyp.	Popova 1991
5-HIAA	30+	higher 3 structures	Popova 1991
Tryptophan hydroxylase	30+	higher (synthesis up)	Popova 1991
MAO-A activity	30+	decreased	Popova 1991
Gray matter (MRI)	recent gens	up vs farm control	Hecht 2021

Trut — American Scientist 87(2), 1999

“After 12 generations of selective breeding, the basal levels of corticosteroids in the blood plasma of our domesticated foxes had dropped to slightly more than half the level in a control group. After 28 to 30 generations of selection, the level had halved again.”

Hecht et al., 2021 farm-fox MRI

Tame and aggressive selected lines both diverged from unselected farm foxes in prefrontal cortex and hypothalamus. Neuroanatomy moved in <100 generations on either lever.

9. PIT-TYPE CHEMISTRY AND ANATOMY

The fox experiment is a canid selection model, not a pit-bull kennel book. Direction: tameness raised serotonin and dropped cortisol. Gameness and hold are the other lever. Pit-type papers measure that direction inside the type.

Paper	Comparison class	Direction	Note
Guvenc-Bayram 2024	agg. vs non-agg. pit	5-HT down	oxytocin, nesfatin-1 down
Guvenc-Bayram 2024	same	dopamine up	Animals 14(4):632
Uestundag 2026	7 vs 7 pit bulls	PFC volume down	amygdala volume up
Uestundag 2026	same	testosterone up	dopamine up
Jacobs 2006	agg. vs normal dogs	BNG +40%	not pit vs Labrador
Duffy 2008	C-BARQ pit sample	>20% serious	dog-directed aggression
MacLean 2019	14 traits, among-breed	h^2 mean 0.51	51% among-breed var.

Guvenc-Bayram et al. — Animals 14(4):632, 2024

“Aggression in Pit Bull dogs correlates with decreased plasma nesfatin-1, serotonin, and oxytocin levels, while dopamine levels increase.”

Jacobs, Van Den Broeck, Simoens — Behav. Brain Res. 170:119-125, 2006

“A bilateral BNG enlargement of 40% was observed in the aggressive group.” More neurons, not edema. Comparison class is aggressive versus normal dogs.

Colby on the American Pit Bull Terrier: the dogs “can do anything any other dog can do — and then whip him, as well.” That is the selected trait.

THE AVMA SENTENCE AGAINST THE HERITABILITY FILE

AVMA policy on dog-bite prevention: “The AVMA considers it inappropriate to make predictions about a given dog's propensity for aggressive behavior based solely on its breed.” Same page: “It’s not a dog's breed that determines whether it will bite, but rather the dog's individual history and behavior.” Those sentences treat breed-average behavior as interchangeable once a roof and a trainer are supplied. Selection biology, MacLean 2019, and Azadian 2024 do not.

MacLean, Snyder-Mackler, vonHoldt, Serpell — Proc. R. Soc. B 286:20190716, 2019

“We integrated behavioural data from more than 14 000 dogs from 101 breeds with breed-averaged genotypic data (n = 5697 dogs) from over 100 000 loci in the dog genome. We found high levels of among-breed heritability for 14 behavioural traits (the proportion of trait variance attributable to genetic similarity among breeds).” “We next identified 131 single nucleotide polymorphisms associated with breed differences in behaviour, which were found in genes that are highly expressed in the brain and enriched for neurobiological functions and developmental processes.”

Same paper — the number

“The mean among-breed heritability was 0.51 ± 0.12 (s.d.) across all 14 traits (range: h^2 = 0.27–0.77), and significantly higher than the null expectation in all cases (permutation tests, $p < 0.001$).” Highest: trainability h^2 = 0.73; stranger-directed aggression h^2 = 0.68; chasing h^2 = 0.62; attachment/attention-seeking h^2 = 0.56.

What 0.51 means in this design

Among-breed heritability: the share of variance in breed-average C-BARQ scores that tracks genetic similarity among breeds. It is not a claim that an individual pit bull is 51% doomed. It is a claim that breed-average trainability and stranger-directed aggression are not a training pamphlet.

If breed were only a coat, those 14 traits would not sort with the genome. They do. Stranger-directed aggression at h^2 = 0.68 is the same axis the fatality file keeps putting first. The AVMA sentence that breed does not determine bite risk is a policy line. It is not this paper.

BREED CLADES DO NOT LEARN THE SAME TASK THE SAME WAY

Azadian & Protopopova — Sci. Rep. 14:24143, 2024

“Learning is crucial for shaping domestic dogs' behaviour through life experiences, yet not all breeds exhibit the same learning aptitude towards a particular task.” n = 111 dogs, five breed clades (UK Rural, Retrievers, Asian Spitz, European Mastiff, New World). Hand-touch task: acquisition, discrimination, reversal, extinction.

Same paper — conclusion, quoted

“Results of the current study revealed both between and within-breed clade differences in the learning performance, depending on the type of learning feature being evaluated.” “The Cooperative working breed clades experienced more difficulty in the reversal learning phase, but still exhibiting a significantly higher perseverance during the extinction phase, which might be significantly associated with the context of testing and their historical function.” “Different breed clades may have different learning profiles.”

Authors’ own limit, printed

The same paper states that observed disparities “may not be entirely attributed to inherent cognitive differences among the breed clades but rather potentially influenced by contextual factors such as the human-dog communication dynamics associated with breeds’ cooperativity.” That sentence is the comparison class. It does not erase the clade differences they measured.

Read with MacLean: selection made breeds that differ on heritable behavior (trainability 0.73, stranger-directed aggression 0.68) and on how they reverse a learned rule and persist when the reward stops. That is artificial selection leaving a cognitive profile. It is the farm-fox result in another coat. An owner-only account has to explain why 14,000 dogs across 101 breeds sort on genome-linked C-BARQ scores, and why five clades do not reverse and extinguish on the same curve. It has not.

Scope

Neither paper is a pit-versus-Labrador fatality table. MacLean is breed-average C-BARQ plus breed-average genotypes. Azadian is clade performance on one virtual hand-touch task. Together they make the AVMA “not the breed” policy line a statement that is not what those pages measured.

10-11. HERITABILITY AND SCOPE OF INFERENCE

01 66.1% is 345/522 deaths, 2005-2019. 536 vs 63 is the 2005-2024 update. They are different windows.

02 +453% is the pit-type crude death rate per 100 million from 1989-94 to 2015-19. +68% is the all-dog rate in the same comparison.

03 50.9% is named breeds at one pediatric hospital (CHOP), not a national census.

04 38.5% is 196/509 named Atlanta cases; 12% is 196/1,616 of all Atlanta cases including unnamed.

05 −18.2% and −38.3% are hospitalization rates after rules that included the fighting cluster, not all-bite emergency lines in every city.

06 Fox −50%/−75%/−67%/−80% are corticosteroids in selected tame foxes versus farm controls. Not pit-bull blood draws.

07 Jacobs +40% is aggressive versus normal dogs. Guvenc-Bayram and Uestundag are within pit bulls.

08 Population share ~8% is Clifton 2017-19. The monograph's 6% is not used.

09 Deaths and maimings are not merged. The monograph's 3,569 line stays a Clifton compilation class.

10 Most dogs of every type never appear in a fatality file. The finding is first rank in the lethal tail.

11 No figure in this brief is generated.

Conclusion

Pit-type dogs are a public danger. 66.1% of a 522-death U.S. window. 69.5% of U.K. fatal dogs. 50.9% of named CHOP pediatric bites. Pit-type death rate +453% while the all-dog rate +68%. Pull the type, hospitalization columns moved −18% and −38%. Select canids on tameness, cortisol falls 50 then 75 percent. Select them on gameness, the other lever is what the pit-type chemistry papers measure.

12. SOURCE MAP

KENNYOUT3.
Pitbulls — A Danger To Society. EPUB, 24 Nov 2025.

Sacks JJ, Sattin RW, Bonzo SE.
JAMA 262:1489-1492, 1989. 41.6%; 20%62%.

Sacks JJ et al.
JAVMA 217(6):836-840, 2000. Pediatrics 1996 rates.

Kaye AE, Belz JM, Kirschner RE.
Plast Reconstr Surg 124(2):551-558, 2009. 50.9%.

Golinko MS et al.
Clin Pediatr 56(4):316-325, 2017. 38.5%; 50% OR; OR 3.36.

Bini JK et al.
Ann Surg 253(4):791-797, 2011. CFR 10.3% vs 0%.

Alizadeh K et al.
Westchester 2017. 48.2% named; 47.8% pit OR.

DogsBite.org.
2005-2019 345/522=66.1%. Rates +68% / +453%.

Austin Animal Center.
2012-2023. Pit 42.4% of severe+ (357/842).

Raghavan M et al.
Inj Prev 2013. 3.472.84 = −18.2%.

Villalbi JR et al.
Inj Prev 2010. 1.801.11 = −38.3%.

Clifton / Animals 24-7.
UK 91/131=69.5%. XL 1040. Pop ~8%.

Trut L.
Am Sci 1999. Cortisol −50% then −75%.

Trut L, Oskina I, Kharlamova A.
BioEssays 2009. Gen 45: −67% / −80%.

Popova NK et al.
Pharmacol Biochem Behav 1991. Serotonin up.

Hecht EE et al.
Farm-fox MRI 2021. Both selected lines move.

Guvenc-Bayram G et al.
Animals 14(4):632, 2024. 5-HT down, DA up.

Uestundag Y et al.
Behav Processes 239:105385, 2026.

Jacobs C et al.
Behav Brain Res 170:119-125, 2006. BNG +40%.

Duffy / MacLean.
C-BARQ >20% serious; h^2 mean 0.51.

People v. Knoller.
26 Jan 2001, 2398 Pacific Avenue.

Cruelty to Animals Act 1835.
5 & 6 Will. 4 c. 59.