

# **Inquiry into the Legislative and Regulatory Framework Relating to Restricted Breed Dogs**

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## **Dog bite injury – A public health issue**

*Every two years in Australia approximately three persons die as a result of dog bite injury and for each year almost 2000 are hospitalised and more present at a hospital emergency centre. Children are over-represented in dog bite injury requiring hospitalisation and are mostly bitten on the face, neck and head. Adults are mostly bitten on the hands, fingers and arms. The most common location of dog bite injury is within a home environment rather than in a public place. Bite events often cause considerable trauma to all involved, including those injured, their family and the offending dog's owner. Severe or multiple bites may result in the development of post-traumatic stress disorder.*

*Reducing dog bite trauma is a complex problem requiring a multi-dimensional approach. Authorities in recent years have approached this issue by regulating particular dog breeds because they were considered to be more dangerous than other breeds. This practise is referred to as breed-specific legislation. However, to date there is no published literature showing the efficacy of breed specific legislation in reducing dog bite injury. This research will review the current emphasis on breed specific legislation, by examining the associated evidence base and considering the potential utility of an integrated approach to dog bite injury prevention.*

The above is the preamble to an incomplete PhD thesis titled “Dog Bite Injury: an investigation into the effectiveness of regulation”

The fundamental research question being addressed in this thesis is whether breed specific regulation is a flawed approach to reducing dog bite injury. The overall research question was to be addressed through consideration of a set of more specific research questions.

1. Is there any evidence that current breed specific regulation is effective?
2. If not, why?
  - i) Can breed be reliably identified?
  - ii) Is breed a strong predictor of risk?
  - iii) Are there other important risk factors?

### 3. What would be an improved approach to preventing dog bite injury?

I have included as Attachment 1 to this submission, the draft chapter relating to the conceptual basis for an integrated approach to dog bite injury prevention. As this is unpublished I request that it remain confidential. I would be happy to make myself available if further clarification was required and to provide further detail on the areas of research undertaken to provide input into this integrated approach.

I am also able to provide you with detailed literature review if required. I have included a brief summary of the epidemiology of dog bite injury, dog bite risk factors, interventions and legislation below.

## **Epidemiology of dog bite injury**

### **Worldwide**

There is a vast amount of literature, worldwide, describing dog bite injury. Many are retrospective or prospective descriptive studies resulting from research on hospital presentation or admissions data with a focus on children ([Bernardo et al., 1998](#); [Bernardo et al., 2000](#); [Bernardo et al., 2002](#); [Bhanganada et al., 1993](#); [Dwyer et al., 2007](#); [Hon et al., 2007](#); [Kahn et al., 2003](#); [Mendez Gallart et al., 2002](#); [Schalamon et al., 2006](#); [Steele et al., 2007](#)) or all ages ([Bhanganada et al., 1993](#); [Day et al., 2007](#); [Feldman et al., 2004](#); [Hoff et al., 2005](#); [Marsh et al., 2004](#); [Weiss et al., 1998](#)).

Victims of dog bites share common characteristics across jurisdictions which include:

- An increased likelihood of children being bitten in their home or someone else's home rather than in a public place.
- Over-representation for dog bite injury in children and older people.
- Over-representation for dog bite injury for males of all ages.
- Children mostly bitten on the face, neck and head.
- Adults mostly bitten on the hands, fingers and arms.

## **Australia**

A number of case-series and cross sectional survey studies have been conducted in Australia, where similar observations have been made ([Al Podberscek, 1990](#); [Greenhalgh et al., 1991](#); [MacBean et al., 2007](#); [Nixon et al., 1980](#); [Ozanne-Smith et al., 2001](#); [Pitt et al., 1994](#); [Podberscek and Blackshaw, 1991](#); [Thomas and Buntine, 1987](#); [Thompson, 1997](#)).

## **Risk factors for dog bite injury**

Very few analytic studies have been conducted to determine risk factors for dog bite including victim specific factors. While the general pattern and circumstances of dog bite injury have been described to some extent, few well conducted risk factor studies have been reported, particularly those designed to determine risk factors for the general population or for characteristics of owners, victim behaviour, breed, dog training and socialisation.

## **Dog owner-specific factors**

No research was found in the literature that has systematically examined personality or behavioural characteristics of owners whose dog has been involved in a bite injury event. However, there have been two papers that have considered the characteristics of owners of “vicious” dogs ([Barnes et al., 2006](#); [Ragatz et al., 2009](#)). The first study found that “vicious” dog owners had nearly 10 times more criminal convictions than other dog owners and the second study found that “vicious” dog owners reported significantly more criminal behaviours than other dog owners. A major flaw in both these studies is that both assumed particular breeds as “vicious” regardless of whether the individual dogs had actually ever offended by biting. They based their premise on literature that indicated these breeds as “high-risk” breeds in terms of aggression.

A paper examining a case series of 227 biting dogs published in *Applied Animal Behaviour Science* in 2001 ([Guy et al., 2001c](#)) described the characteristics of the dogs, their behaviour, and their victim while another paper by the same authors ([Guy et al., 2001b](#)) evaluated the association of potential risk factors with biting behaviour to determine risk factors in a veterinary caseload for dog bites to owners in a household setting. They randomly selected 227 biting and 126 non-biting dogs from a general veterinary caseload of 3226 dogs and found that both the mean weight and age of biting dogs were significantly lower than that of non-biting dogs. It was noted that small dogs may have appeared more aggressive because

the owners of large dogs were less likely to present to a veterinarian. Significant risk factors for an outcome of biting included: the dog being female (particularly if small), the presence of one or more teenage children in the home, a history of a pruritic or malodorous skin disorder which had received veterinary treatments, showing or being allowed any of the following behaviours in the first two months of ownership: aggression over food, the dog having slept on someone's bed or the dog having been given a significantly higher ranking for excitability based on its behaviour. Dogs which had bitten were also more likely to have previously shown fear of children, men, and strangers. The information presented in this study may be applicable only to small companion animal practice situations and not the general population as the study design was to determine risk factors for owners of dogs in a general veterinary caseload.

### **Dog-specific factors**

A study reported in *Pediatrics* in 1994 ([Gershman et al., 1994](#)), was designed to determine dog-specific factors independently associated with a dog biting a non-household member. Cases were selected from dogs reported to Denver Animal Control for a first-bite episode of a non-household member. Controls were neighbourhood matched dogs with no history of biting a non-household member. There was no assessment of the role of the victim's behaviour in the dog bite event or verification of the predominant breed as stated by the owner. It was reported that, in comparison to controls, biting dogs were more likely to be German Shepherd predominant breed or Chow Chow predominant breed, male, unneutered, residing in a house with 1 or more children and chained while in the yard. Children aged 12 years and younger were the victims in 51% of cases. It is possible that case detection bias existed with victims of some breeds more likely to report bite incidents. This may result in spurious association between biting and those breeds. It is unlikely that a similar scenario exists with respect to the other factors and reporting. However, there may be other associations, for example between neutering or chaining and breed that may result in spurious association between biting and breed. Similarly families with children may be more likely to have certain breeds. These potential study flaws could be overcome using stratification to adjust for confounding in the analysis.

Other studies have also attempted to measure the relative dangers of particular breeds and also used reliable measures of the relative frequency of the breeds in the dog population. One, a cohort study of over 3000 dogs ([Guy et al., 2001c](#)) found that German Shepherds were

no more likely to bite than Labrador Retrievers, a result the authors attributed to German Shepherds being involved in more cases of attacks outside the home which were not the subject of their study. The study also found that mixed breed dogs were no more likely to bite than pure breeds.

A survey of child dog bite victims presenting to the Emergency Department of the Adelaide Children's Hospital over an eighteen month period from January 1986 to June 1987 ([Greenhalgh et al., 1991](#)) used council dog registration figures as the denominator to determine breed bite rate and found that German shepherds were implicated more frequently than their prevalence in the community. This finding is not reliable as the denominator used to determine the breed bite rate was obtained from council registration figures which are not necessarily a true reflection of the dog population due to breed identification problems and not all dogs being registered. No distinctions were made between purebred or crossbred dogs.

A later study used emergency presentation data for 356 all age dog bites from another Adelaide hospital for the period January 1990 to June 1993, together with data from respondents of a 1992 community survey ([Thompson, 1997](#)) to consider bite risk for dog breeds. The proportion of dog attacks by various breeds was reported as was the relative risk of attack by those breeds (representation ratio) using the unverified self-reported breeds from the community survey to determine the distribution of breeds in the dog population. Thompson also stated that more dangerous dogs existed but they did not feature in the injury surveillance data because they comprised a small proportion of the dog population. He did not provide any justification either for his assertion that more dangerous dogs existed or for the statement that they didn't feature because they comprised a small proportion of the dog population. It may equally have been the case that they didn't feature in the injury surveillance data because they were not more dangerous.

A case-control study of dog bite risk factors in a domestic setting to children aged 9 years and under was conducted as a component of my research. The aim of this study was to investigate risk factors for dog bite-related injury in a domestic setting to children aged 0-9 years. In Victoria, children aged 0-9 years account for 83% of hospital admissions and 73% of hospital presentations for dog bite injury. More than two thirds of bites to children occur in a domestic setting. The study region comprised the catchment of seven emergency departments (EDs).

Case data were obtained from a call back study of 51 child dog bite victims who presented to the study EDs. Controls were 102 children aged nine years and under exposed to dogs in a domestic situation in the study region and who were not bitten. Data was collected via self-report in response to an interviewer-administered questionnaire. Unadjusted analysis identified several risk factors including overconfidence with dogs (OR 6.01, 95% CI 2.89-12.7), provocation by the child (OR 13.43, 95% CI 5.71-31.63), neuter status of the dog (OR 0.26, 95% CI 0.11-0.59) and lack of supervision (OR 10.32, 95% CI 3.80-28.01). Breed did not appear to be a factor with forty-three different pure bred and mixed-breed dogs involved in 51 bite incidents. This was presented at the World Injury Prevention Conference in October 2012 (See Attachment 2). Analysis, controlling for the effects of confounding variables is to be presented in my thesis.

Identification of risk factors has the potential to reduce dog bite-related injury to children in a domestic setting by guiding future interventions, including education and policy. This is the first time a case-control study of this nature, using hospital data, has been conducted.

## **Interventions - literature**

### **Education**

Four studies were identified that had evaluated educational interventions. A pilot study conducted in the United States ([Spiegel, 2000](#)) utilised pre- and post-program questionnaires to determine if a school-based education program was an effective means of informing children aged 5 to 12 years old about dog bite safety. The questionnaire assessed children's learning of the appropriate behaviors when interacting with dogs, dog bite prevention, and changes in their understanding of dog behavior. The program appeared to be highly effective in helping children understand how to prevent or avoid potentially threatening situations involving dogs. The program was most effective at teaching children that, neighborhood and family dogs are most likely to cause dog bite-related injuries, they should never run away from a dog, and they should never touch a dog that is sleeping or eating. For most groups, there was also an increased level of recognition of canine body language. It was recommended that future investigations should concentrate on monitoring actual changes in child behavior. This study had several limitations. It was noted that it was difficult to control for differences between schools that chose to participate and those which chose not to. All of the former were enrolled in the program, thereby providing the potential for participant bias,

selection bias, convenience sampling, and overall, “volunteerism.” All seven schools were private, which may limit the degree to which findings can be applied to other populations.

The other three studies evaluated Australian educational interventions. One was a randomised controlled trial of an educational intervention targeted at primary school children ([Chapman et al., 2000](#)). Eight primary schools in metropolitan Sydney were randomly selected. The schools were cluster randomised into intervention and non-intervention control schools with four in each group and two classes in each school were then selected to participate. 346 children aged 7-8 years participated. The intervention consisted of a 30 minute lesson from an accredited dog handler and dog, demonstrating appropriate behaviour around dogs. They were also given activities to be undertaken before and after the demonstration. Seven to ten days later the children were observed unsupervised in the playground with a docile dog tethered 5 metres away from its owner. Children from control schools were also presented with a dog in similar circumstances. The study concluded that the educational intervention increased the precautionary behaviour around strange dogs in the short term but further research was required to determine whether the program could influence children’s behaviour in the long term. The study was criticised for not taking into account cluster randomisation in the analysis which would take into account the likelihood the actions of children from one school were more similar to each other than to the actions of children from another school. After re-analysis a positive intervention effect was still present.

A second study used a questionnaire to investigate parents’ beliefs about their children’s behaviour around familiar and strange dogs. A brief educational program on 192 kindergarten children with a mean age of 4.7 years was then evaluated ([Wilson et al., 2003](#)). The study concluded that children in the 4 to 6 year age group could benefit from an instructional program about dog safety with an increased knowledge of dog-safe behaviour and/or increased caution in approaching dogs. The authors reported a number of limitations to this study. First, the results indicated a general increase in caution (number of “no” responses) in those experimental groups that recorded the greatest increase in knowledge about dog-safe behaviour. Because the number of questions requiring a “yes” or “no” were not balanced, it was possible that the generalised increase in caution accounted for the experimental findings. Another limitation was that the dependent measures were indirect.



While the children were able to identify high risk situations they did not determine a corresponding change in their behaviour.

While the US study ([Spiegel, 2000](#)) and the two Australian studies ([Chapman et al., 2000](#); [Wilson et al., 2003](#)) found positive learning outcomes in the short term, none of the studies considered a longer term measure of the educational interventions.

A more recent Australian study ([Coleman et al., 2008](#)) did assess the immediate and longer-term learning outcomes of a program delivered to young children in their preparatory year of primary schooling. The children's retention of knowledge was examined at 2 weeks, 2 months and 4 months. There was little evidence of retention of this information 2 and 4 months after instruction. The authors suggested a need for follow-up instructions to improve the longer-term retention of information.

The four studies demonstrated that educational dog safety programs can increase knowledge and precautionary behaviour in the short term. However, their effectiveness in teaching children how to avoid a dog attack is not known.

## **Legislation**

### **Dog Control**

The issue of dog bite injury and dangerous and aggressive dogs has become a significant issue. In attempting to deal with this, regulatory agencies have over time implemented various regulations focused on particular practices of dog owners thought to increase the potential for dog bite injury. Within Australia, the first regulations related to containment of dogs to the owner's property and leash laws, followed by measures to control and manage known aggressive dogs (i.e. dogs defined to be "dangerous" as a result of an incident, most likely involving injury to a human or another animal). While there has been no scientific evaluation of these regulations, it is accepted that regulations of this type may have contributed to a reduction in the likelihood of a dog bite injury event in public areas or by known aggressive dogs ([Seksal, 2002](#)).

### **Breed Specific Legislation**

In the United States in the 1980's regulation was introduced which involved the restriction or banning of specific breeds of dogs. In an American Veterinary Medical Association report ([Task Force on Canine Aggression and Human-Canine Interactions, 2001](#)) the issue of the effectiveness of breed specific legislation was considered in detail. The task force concluded that dog bite statistics are not accurate for a variety of reasons associated with the data such as misidentification of breed by the victim and the media. They noted that large breeds are typically identified as problem dogs whereas smaller breeds may bite as much or more but the injury is less substantial and may therefore not be reported. The taskforce also concluded that breed specific legislation was inappropriate because it may provide the impression that banning or restricting certain breeds of dog manages the problem. They felt that this could give people a false sense of security and result in dog owners acquiring a dog and failing to recognise the scope of their responsibilities to the community in the context of the potential danger the dog may pose.

Very few studies have attempted to quantify the effect of breed specific regulations on dog bite injury and those that have, concluded that breed specific regulations have been ineffective in reducing injury by dog bites. In the United Kingdom a comparative prospective study was conducted of mammalian bites (bites of humans by all mammals, not just dogs) attending at one hospital Emergency Department in a three month period before implementation of the Dangerous Dogs Act (DDA) in 1991 and again for a three month period two years later ([Klaassen et al., 1996](#)). It should be noted that only a brief period of time was assessed thereby limiting the value of this study. This report found that introduction of the Act resulted in no significant decline in the proportion of mammalian bites by dogs with 73.9% before and 73.1% after. Prior to the introduction of the Act, the Alsatian was the most common breed with 24.2% of cases, the same as the proportion of mammalian bites that were by humans. The percentage of bites involving so-called 'dangerous' breeds increased from 6% pre legislation to 11% post legislation. The authors concluded that the Dangerous Dogs Act 1991 had done little to protect the public from mammalian bites and that the Act has singled out certain 'dangerous' breeds without any substantive data to support it. They also concluded that if legislation is to reduce injury from dog bites there should be much wider control of the dog population in general and not just targeting of the breeds referred to in the DDA.

Similar conclusions were reached in Spain, based on the analyses of dog-bite related incidents from Aragon over a ten year period from 1995 to 2004 with the aim of assessing the impact of the Spanish Dangerous Animals Act on the epidemiology of dog bites ([Rosado et al., 2007](#)). The authors concluded that the implementation of the Spanish legislation exerted little impact on the epidemiology of dog bites and the criteria to regulate only so-called dangerous breeds was unsuitable and unjustified.

### **Australia**

There has been no scientific evaluation of the impact of breed specific legislation in Australia. A paper examined bite data reported to the New South Wales Government by Local Government authorities ([Collier, 2006](#)) and concluded that the data did not support the view that the breed targeted by regulation was a uniquely dangerous breed and breed-specific laws directed at restricting it had not been demonstrated by authorities to be justified by its attack record.

In Australia, in 1995, the death of an elderly woman in Toowoomba, Queensland was widely reported as an attack by an American Pit Bull Terrier. The dog involved was said to be a cross breed of unknown origins ([Collicutt, 1996](#)) and had been registered with Toowoomba Council as a Labrador cross ([Shultz, 2003](#)). Following this, several Queensland Councils introduced restrictions or total bans on American Pit Bull Terriers and crosses. Unlike the situation in Victoria where there is an overriding Act governing domestic animal management, Councils in Queensland are reasonably autonomous in regard to their ability to make stand-alone Local Laws. Consequently Queensland Councils are able to make restrictions quite separate to those required by Queensland State Legislation. Restrictions have been extended to other breeds and crosses by some Queensland Councils. More than 15 breeds and crosses have been targeted ([CCCQ, 2002](#); [DLGP, 2003](#)) and one Council, as well as restrictions on particular breeds, has had restrictions on dogs over a particular weight or height.

Following the initial breed specific controls described above some States have extended their regulatory measures to incorporate more stringent requirements in regard to restricted breeds. In Victoria, for example, the Domestic (Feral and Nuisance) Animals Act does not allow the registration of any of the pure breeds prohibited from importation by the Australian Government in 1991, if they were not in existence in Victoria prior to November 2, 2005.

Thus if a dog is identified as a purebred of one of these breeds it may only be registered as a “restricted breed” if it was in existence in Victoria prior to November 2, 2005 and currently registered (as anything) with a Local Council. From September 2010, the legislation was widened to cover dogs which met a physical standard, not yet produced, with a two year moratorium in which dogs who theoretically met this non-existent standard were encouraged to “safely” register with Councils. This was rather difficult given the standard didn’t exist. This did not affect the legislation as it applied to purebreds. With the sad death of Ayen Chol in August, 2011 this moratorium was cut short and the legislation targeting dogs by appearance commenced on September 30, 2011. This meant that dogs who were not in existence in Victoria prior to September 1, 2010 or not registered with a Council as any breed prior to September 30, 2011 were unable to be registered and would be killed regardless of whether it has committed any offence or whether the owner had any knowledge of the perceived breed. A hastily prepared Standard for the Identification of Restricted Breed Dogs in Victoria became available. This document had many contradictions with text describing a physical characteristic one way and accompanying photos displaying opposite characteristics! This made reviews difficult in VCAT.

This legislation has been a resounding failure causing much pain and suffering and expense to affected dog owners and also expense to Councils with absolutely no benefit to dog bite injury prevention. I have attended most Victorian Civil and Administrative Tribunal (VCAT) Reviews and I have been astonished with what I have observed. In one case, evidence was presented on behalf of the Council by a Local Laws Officer and reinforced by their legal representation that a scissor bite was indicative of a pit bull. Seriously? This same Local Laws Officer gave evidence, intended to reinforce his “expertise”, that he had attended training through the Department of Primary Industries at which he named particular breeds of dogs as being present when in fact they were not. I have confirmation of this by the department in writing. Whether this was from ignorance or deliberate only he knows. Sadly these dogs died. This evidence is available on tape if the Committee are interested in listening to it. In another hearing a Local Laws Officer stated that the *occiput* was on the cheek of a dog and the *pastern* on the shoulder. Fortunately the particular VCAT member hearing this review knew otherwise and this dog went home. Unfortunately this Local Laws Officer was considered to be an expert in many more cases to follow. The Senior Local Laws Officer who gave evidence in VCAT against a dog that subsequently won in the Supreme Court stated in VCAT as evidence of his expertise that he knew the difference between an

Alsation and a German Shepherd Dog. There is no difference. A transcript of this is also available to the Committee. I have attached as Attachment 3, which I request also to remain confidential a table of VCAT cases (not necessarily complete) and their outcome.

One of these VCAT cases involved a dog called Bobo. I have attached as Attachment 4, a power point presentation given to Melbourne University Veterinary students in 2012. Essentially the seminar referenced Bobo's case. I would be very keen to discuss this case in detail. Bobo lost in VCAT by the application of "partial compliance" with the required physical characteristics. How partial compliance can be applied to specific physical characteristics is beyond me. This belief has since confirmed by the judiciary in later cases, yet Bobo was killed.

It is my belief that the State should revisit their obligations as a model litigant and with that in mind I refer to Attachment 5, "The State as a Model Litigant". Councils in particular have acted inappropriately if not illegally in many instances but no-one seems prepared to act on this. For example, (and I have many) one Council, as standard practise provided all owners of seized dogs with a letter stating that the owner was responsible for all impoundment costs until the outcome of prosecution and that they would be invoiced on a fortnightly basis. Many people, particularly those in the lower socio economic bracket, confronted by the cost of around \$28 per day felt they had no choice but to surrender their dogs. This of course is totally wrong as there is no debt until a finding of guilt and no ability by any Council to invoice prior to any court finding. How many dogs were surrendered, possibly unnecessarily? Refer Attachment 6.

## **Ayen Chol**

The tragic death in August 2011 of Ayen Chol was the catalyst for the shortened moratorium. Until then, no dog bite related deaths in Victoria had been attributed to a dog identified as a pit bull or pit bull cross.

My ongoing research has found that from 1979 to 2012, there have been over 33 dog bite related deaths in Australia, 11 of these in Victoria. Only one other dog involved in a death in Australia had previously been described as a pit bull cross dog.

I made four unsuccessful Freedom of Information requests for photos of the involved dog. These were to the Victorian Police, the Department of Primary Industries and twice to Brimbank City Council. Subsequently the Coroner ruled that no photos were ever to be released. Why?

I attended the inquest and was dismayed by the process. Dangerous breeds were referred to throughout. There was no mention of the Victorian Standard for the Identification of Restricted Breed Dogs which the subject dog was said not to comply with. The subject dog's male parent was assessed on two separate occasions (one shortly AFTER the inquest) and said not to comply. The dog was destroyed without assessment by behavioural experts nor was an autopsy performed to identify any health issues that may have contributed to its reactions.

The dog had left the property unsupervised via a roller door that activated by unknown means. There was no separation from the backyard where the dog was kept nor was there a front gate. The owner had commissioned an independent report into the activation of the roller door. This came as a complete surprise to the Coroner as the Victorian Police assisting had not looked at this aspect. It is my belief that there should be a law requiring separation of the backyard and roller door when a dog is kept at the property, in particular if there is also no front fence or gate preventing escape from the property. This is a simple and logical response that would prevent any future incidents of this type. Why wasn't it considered and recommended?

### **Evidence base for breed specific legislation**

The full extent of dog bite injury in Australia is difficult to measure as there are no reporting requirements.

There are data available on deaths. Hospital-treated dog bite injury is available through emergency department presentation data and hospital admissions data. But comprehensive data on medical practitioner treated injury and non-medically treated injury are not available.

Within Australia there are no reliable statistics available on the breed of dogs involved in injury events, mainly because breed identification based on phenotype is reported to be

inaccurate, even when experienced observers are involved ([Collier, 2006](#); [Coppinger and Coppinger, 2001](#); [Voith et al., 2009](#)). Furthermore no scientifically based research indicates current DNA testing technology reliably identifies breed composition. The issue of breed identification in dog attacks is further complicated, and errors potentially increased, by reliance on media reports for breed identification ([Beck et al., 1975](#); [Collier, 2006](#); [Overall and Love, 2001](#); [Podberscek, 1994](#); [Sacks et al., 1989](#); [Sacks et al., 2000](#)). Selective reporting of incidents and their detail by the media may also misrepresent the role of breed in dog bite injury ([Podberscek, 1994](#)). Due to the lack of systemic data collection on the dog population, combined with the noted problems of breed identification, accurate breed denominator data are not available to allow estimation of breed specific bite injury rates.

Second, the effectiveness of breed specific regulatory measures has not been clearly demonstrated, nor has any literature been identified where this approach has been examined for potential harmful effects, such as emotional trauma to the owner. The evaluation of injury interventions is critical to ensure that health gains are made, any disbenefits are taken into account, and finite public resources are used effectively.

Third, breed specific regulatory measures may reflect a simplistic and unrealistic appreciation of the causal factors ([Task Force on Canine Aggression and Human-Canine Interactions, 2001](#)). It is well recognised that a dog's reaction in any situation depends on at least six interacting factors ([Seksal, 2002](#); [Wright, 1991](#)). Current breed specific regulation removes responsibility for dog biting incidents from dog owners and places the focus on dogs. It may also engender a false and dangerous perception that breeds not included in particular regulations will not be associated with risk of biting. A fundamental principle of injury prevention is that the most effective solutions involve a multi-dimensional approach ([Ozanne-Smith and Williams, 1995](#)), which in the instance of dog bite injury would involve dog owners, parents, children, the community at large, local authorities and legislators. Supporting this approach, there is some evidence that a multidimensional prevention program in the State of Nevada achieved a 15% reduction in the incidence of bites ([Task Force on Canine Aggression and Human-Canine Interactions, 2001](#)). There is also much support worldwide for a model referred to as the Calgary model developed in Calgary, Alberta, Canada by Bill Bruce.

## Why Dogs bite

There is much to be said as to why dogs bite. Today, dogs are increasingly isolated from other dogs, with stringent conditions imposed by governments on their management; changing social systems and urbanisation adding further stress on the animals involved. It is possible that excessive restriction of social interaction with humans and other dogs and animals may result in inappropriate behaviour.

Aggressive tendencies are innate in all canine species. Dog aggression can be divided into two distinct types; normal or expected under certain conditions and abnormal or excessive reactions ([Neville, 1991](#)). Most forms of dog aggression are multi-dimensional. Dog aggression has also been categorised into the following broad categories ([Blackshaw, 1991](#); [Fogle, 1990](#); [Luescher and Reisner, 2008](#); [Neville, 1991](#)); play aggression, protective aggression (including territorial and parental aggression), fear aggression (including pain induced aggression), learned aggression, predatory aggression which is extremely rare and idiopathic aggression.

Veterinarian Dr Bruce Fogle in his book *The Dog's Mind* ([Fogle, 1990](#)) asserted that fear aggression is the most common type of aggression that pet dogs exhibit and is the most common cause of dog bites in children. He stated *“these dogs bite children for many reasons. If they have not been properly socialised to children they can think of them as a new and unfamiliar species. To the dog's mind our children are quite different to us. Prepubertal children smell different as well as being smaller. They move in a much jerkier fashion”* and *“fear aggression can be caused by a previous painful experience with a child when, for example, the dog's hair was pulled”*

From the perspective of the offending dog, a bite can be considered intentional or unintentional. Intentional dog bite injury is the consequence of an aggressive response by a dog. Unintentional injury may arise when the dog's teeth impact inadvertently with a person's body, as in, for example, a collision during a game of ball, and is not the result of an aggressive response from the dog. The causal factors for an injury event of this type are easy to describe. Determination of causal factors for intentional dog bite injury events is more complex.



In any situation a dog's response depends on at least six interacting factors including heredity, early experience, later socialisation and training, health (medical and behavioural), current environment and victim behaviour ([Seksel, 2002](#); [Wright, 1991](#)). It follows that a dog's aggressive response, if any and the level of aggression would also be also linked to the above factors. For dog bite prevention measures to be effective the above dog-related predisposing influences need to be considered.

## **Summary**

Instead of focusing on a particular breed, or responding to single events as they occur, and reacting emotively, we need to systematically examine all of the circumstances surrounding dog bite incidents.

If you cannot reliably identify a dog's breed background (and cross breed dogs add a further dimension), laws targeting breeds will never work, regardless of whether you think the original justification is valid.

We need better data and reporting, and better education for parents, dog owners and the general public on how best to avoid a dog bite incident.

Knee-jerk reactions by governments do not tend to create good public policy. We do not need any more laws or restrictions that are doomed to failure from the onset. We need a strategy based on the best research evidence that we have to hand.

Breed bans simply do not address other recurrent patterns associated with dog attacks such as irresponsible or uneducated dog ownership.

Measures taken need to address human ownership practices, as dogs of many breeds and crosses feature in dog attacks. No single, or even group of breeds, have been shown to account for the majority of dog attacks in Australia.

The best way to prevent children being injured is to have approach that considers all possible factors, as is the case with almost every other injury issue.

This approach should include strategies targeted towards the general public, dog owners, parents and dogs. Enforcement of existing control and leash laws and education and knowledge will help. It is important children are supervised with dogs. These essential measures will enhance responsible ownership of any breed or cross breed.

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