

The use of Electric Shock Collars vs. Other Training Methods: Efficacy, Stress, and Welfare Concerns

By Kristy Englert

Introduction

Dogs frequently exhibit behaviours their owners would like to eliminate (Schalke *et al.*, 2007). Surveys indicate that 86-90% of all dogs exhibit one or more problem behaviours, and these are often cited as reasons for relinquishing the dog and euthanasia (Yin *et al.*, 2008). Different training methods have different effects on dog welfare. We need to investigate the efficacy of techniques that improve welfare, reduce problem behaviours and strengthen the owner-dog relationship.

Discussion

Traditional training methods have used mainly aversive stimuli, which generally have negative welfare implications, possibly pose health risks, and can increase behavioural problems such as aggression (Hiby *et al.*, 2004). Remotely operated electric shock collars can be used to eliminate undesirable behaviours such as barking, car-chasing, hunting, and recall problems (Lindsay, 2001), but their use is controversial as they may be associated with pain and fear (Schalke *et al.*, 2007).

Supporters of such collars see them as an effective means of eliminating self-rewarding behaviour by delivering a well-timed and measured aversive stimulus (Lindsay, 2000). Others view them as a long-term threat to welfare. Previous work has shown that dogs trained with shock collars lower their body posture, emit high-pitched yelps, bark, show avoidance, and redirect aggression, indicating that they experience stress, fear, or pain from the shocks (Schilder & van der Borg, 2004).

Schalke *et al.* (2007) and Steiss *et al.* (2007) investigated the use of shock collars to identify the stress they cause and to evaluate the impact on welfare. Schalke *et al.* (2007) studied the use of such collars to deter hunting behaviour and as punishment for disobeying calls using 14 laboratory-bred beagles, with heart rate and salivary cortisol concentrations as the stress parameters. Steiss *et al.* (2007) looked at their use as a barking deterrent using 24 mixed-breed kennel dogs and plasma cortisol and ACTH as stress parameters.

Schalke *et al.* (2007) showed that a group of dogs that received shocks unpredictably and out of context (Group R) had an increase in heart rate and cortisol concentrations (up to 327.78% above baseline cortisol levels). This group was used to assess the effects of inappropriate use by dog owners. The other groups, receiving shocks in association with hunting behaviour (Group A) and disobeying recall orders (Group H), were better able to associate the stimulus with their behaviour. Neither of these groups had such high increases in heart rate or cortisol concentrations.

Dogs that could associate the electric stimulus with their actions were able to predict and control the stressor, so did not show persistent stress indicators. This shows the importance of applying the punisher (or reinforcer) very quickly after the animal's action in order for them to make an association between a behaviour and its consequences. Poor timing of electric shocks carries a high risk that dogs will show severe and persistent stress symptoms (Schalke *et al.*, 2007). In the hands of inexperienced users and trainers with poor timing, this form of training is likely to have negative impacts on the dogs' welfare, with development of problem behaviours, aggression, fear, learned helplessness, or even the unwanted association between shock and coincidental stimuli, such as the trainer (Polsky, 2000).

Other studies (Christiansen *et al.*, 2001) have found shock collars effective and efficient in training dogs not to attack sheep, with 18 of 24 dogs losing their previous interest in sheep. Steiss *et al.* (2007) also found shock collars an effective means of stopping dogs barking. They tested an electronic collar that detected sound and vibration, and a lemon-spray bark-control collar that emitted a lemon-scented spray on detecting vibration. From the second day of wearing either collar, the time a dog barked was significantly reduced.

These results indicate that both bark collars effectively deter barking without causing statistically significant elevations in plasma cortisol concentration. These findings add to the debate regarding the use of bark-control collars, as they indicate that collars can be humane when used intermittently over a two-week period. The question here is whether or not owners themselves are using the devices correctly, as incorrect use can cause tissue damage, physical lesions and, obviously, pain (Haupt *et al.*, 2007).

Recently, positive reinforcement has increased in popularity among pet owners and professional trainers. Positive reinforcement regimens, such as clicker training and reward-based methods, are often associated with higher levels of obedience and fewer problem behaviours than aversive methods (Hiby *et al.*, 2004). In clicker training, the device emits a double-click that is *always* followed by the delivery of a primary reinforcer, such as food (Smith & Davis, 2008). Eventually, a delay between click and reward delivery can be installed. Despite the popularity of clicker training among pet owners and professionals, there have not been many studies on its efficiency. The study by Smith and Davis (2008) determined that using a clicker to train a novel behaviour in pet dogs increased resistance to extinction.

The clicker prolongs the learned behaviour without primary reinforcement, with extinction of behaviours being significantly slower in comparison with dogs reward-trained with food only. This is important in situations where presenting a primary reinforcer promptly is difficult, such as when distance is being introduced between dog and trainer, or when training dogs to perform a series of behaviours in quick succession (Smith & Davis, 2008). In this way, clicker training provides a positive alternative to devices such as electric collars, which may appeal for their usefulness over great distances.

Conclusion

For the average dog owner, positive reinforcement methods, such as food rewards or clickers, may be more effective and more welfare-compatible for the dog than aversive methods. It is unlikely that the average dog owner could correctly and promptly use aversives such as electric collars without negative impacts on the dog's welfare. Instead, only skilled users who understand learning theory thoroughly should use such methods (and possibly only when positive methods have been tried and found to be impractical or ineffective, e.g., with hunting behaviours). Further research is required into the long-term effects of shock collars and clickers to determine the overall impact of each training technique on dog welfare.

References

- Christiansen, F.O., Bakken, M., Braastad, B.O. (2001) Behavioural changes and aversive conditioning in hunting dogs by the second-year confrontation with domestic sheep. *Applied Animal Behaviour Science* 72, 131-143.
- Hiby, E.F., Rooney, N.J., Bradshaw, J.W.S. (2004) Dog training methods – their use, effectiveness and interaction with behaviour and welfare. *Animal Welfare* 13, 63-69.
- Haupt, Albro, Goodwin, K., Uchida, D., Baranyiová, Y., Fatjó, J., Kakuma, Y. (2007) Proceedings of a workshop to identify dog welfare issues in the US, Japan, Czech Republic, Spain and the UK. *Applied Animal Behaviour Science* 106, 221-233.
- Lindsay, S.R. (2000) *Handbook of applied dog behaviour and training*. Iowa State University Press, Iowa.
- Polsky, R. (2000) Can aggression in dogs be elicited through the use of electronic pet containment systems? *Journal of Applied Animal Welfare Science* 3, 345-358.
- Schalke, E., Stichnoth, J., Ott, S., Jones-Baade, R. (2007) Clinical signs caused by the use of electric training collars on dogs in everyday life situations. *Applied Animal Behaviour Science* 105, 369-380.
- Schilder, M.B.H., van der Borg, J.A.M. (2004) Training dogs with the help of the shock collar – short and long term behavioural effects. *Applied Animal Behaviour Science* 85, 319-334.
- Smith, S.M., Davis, E.S. (2008) Clicker increases resistance to extinction but does not decrease training time of a simple operant task in domestic dogs. *Applied Animal Behaviour Science* 110, 318-329.
- Steiss, J.E., Schaffer, C., Ahmad, H.A., Voith, V.L. (2007) Evaluation of plasma cortisol levels and behaviour in dogs wearing bark-control collars. *Applied Animal Behaviour Science* 106, 1-3, 96-106.
- Yin, S., Fernandez, E.J., Pagan, S., Richardson, S.L., Snyder, G. (2008) Efficacy of a remote-controlled, positive-reinforcement, dog-training system for modifying problem behaviors exhibited when people arrive at the door. *Applied Animal Behaviour Science* 113, 123-138.