

# Methods of Alleviating Working Dog's Anxiety

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**Abstract.** As our society evolved swiftly, working dogs are becoming more predominant in assisting people in diverse fields. It's easier to see our loyal friends working hard in places like battlefields, rescuing people, or in airfields, detecting drugs. At the same time, researchers proposed a deeper understanding of animal welfare and people are more concerned about how to enhance the standard of living of working dogs. This report aimed to use the scientific studies of working dogs from the last decade to list both methods of preventing and alleviating working dogs' anxiety. These methods encompass both physical supplements and mental support. We will go through these methods through three main categories: methods to prevent their anxiety, physical items, and measures and reminders for their trainers in their everyday training and life. Utilizing this framework, we were able to assist these dogs who were having anxiety because of us. We benefit from their hard work and, subsequently, are responsible for their trauma. On the other hand, just like the inextricable link between living organisms, these methods may not only serve working dogs but also other animals around us, including your pet. Lastly, prioritizing animal welfare in research and practice will be pivotal to ensure the ongoing relationship between dogs and people as co-workers.

**Keywords:** Animal welfare, Dogs behavior, human-animal interaction, Canine mental health, working dogs, Therapy Medical support.

## 1. Introduction

Dogs have been verified to be sentient. They have feelings such as fear and anxiety. Fear and anxiety in working dogs can be triggered by a combination of factors, including genetic differences between individuals. As well as affecting the dogs, their anxiety will also affect their trainers or owners. Working dogs that play a vital role in our lives, such as police assistance or search and rescue, have a huge influence on our lives, so the efficiency and quality of their work are equally important. In addition, fear-related behaviors can affect a dog's performance at work and many dogs fail to complete their training in the early stages. This exacerbates the fact that it's extremely difficult to find qualified dogs, leading to a shortage of these precious 'workers'. Therefore, alleviating anxiety and fear is essential to keep dogs in work roles and to ensure their well-being. Furthermore, while we recognize the importance of working dogs, we should also be informed that the ones who are responsible for their anxiety are us, humans. Instead of saying dogs work for their living, we should take the fact as humans need them to help with our jobs. Hence, both dog trainers and owners should be aware of the methods to alleviate working dogs' anxiety.

This paper focuses predominantly on three types of working dogs: K-9 (police) dogs, detection dogs, and SAR (search and rescue) dogs. We will now discuss each type and its distinct characteristics. Identifying their distinct characteristics and dominant dog breeds could help us implement targeted methods to reduce their strain. The methods outlined in this paper aim to alleviate the anxiety experienced by dogs working in extreme situations, such as K-9 (police) dogs, detection dogs, and SAR (search and rescue) dogs. [1]

K-9 dogs' primary role is to assist on-duty police and other law enforcement officers. They are trained to track down criminals and protect their owners. The German shepherd and Belgian Malinois are the breeds most commonly employed for this purpose. K-9 dogs often face criminal attacks and work in challenging environments. Working in such hazardous circumstances can cause fear, anxiety, and stress for K-9 dogs - similar to the impact of war on soldiers.

Detection dogs, the second type of working dogs, are trained to sniff out specific substances from battlefields and human transportation stations. These substances include illegal drugs, explosive

objects, blood, and human remains. Detection dogs are used in police enforcement, wildlife biology, and healthcare. Truffle hunting is one of the earliest applications of detection dogs. Beagles, Labrador retrievers, and golden retrievers are frequently used in this field due to their innate sense of smell.

Last but not least, the SAR and HRD dogs (search and rescue, human remains detector) also played highly important roles in saving human lives. These working dogs possess remarkable senses of smell and hearing and are highly agile. They are employed for various jobs, such as tracking, specialized search, avalanche rescue, and corpse locating. The most common dog breeds for such jobs are Labrador Retrievers, Golden Retrievers, Border Collies, and German Shepherds. [2]

## **2. Methods preventing working dogs' anxiety**

### **2.1. Select the dogs that are better suited for work**

#### **2.1.1 Choose the dogs with the genetic information better cope with anxiety and working environments**

It is important to make changes before losses arise. Just like humans, different animals tolerate anxiety differently because of their sensitivity to emotions. Therefore, we need to choose dogs with genetic information that are better at coping with anxiety and work environments. This is good for their job compatibility and saves some dogs who are naturally prone to anxiety from this work. Genetic screening may provide an opportunity in some cases for dogs to be given training or work opportunities that take advantage of their behavioral tendencies and help them fulfill their potential. [3]

This research has contributed to the success of the Korean military dog training program. In addition, the objective candidate gene approach has shown initial success in identifying dogs with the most potential for the Korean Military Dog Programme. In addition, a candidate gene approach has recently identified several single nucleotide isomorphisms (Saps) associated with variable detection performance in dogs. This suggests that molecular genetic approaches may be effective in identifying detection dogs with higher performance. Nevertheless, further research and application in other working dog breeds will be required before any firm conclusions can be drawn or before the technique can be used as a tool of choice. [4]

#### **2.1.2 Maternal care experienced by infants and time of isolation after growing up affects their further development.**

Researchers have found that in rodents and primates, the amount and type of care an infant receives from its mother can have profound and lifelong effects on the animal. Extreme interruption of early maternal care for 24 hours has a deleterious effect on the offspring's later cognition, whereas shorter separations from the mother and the social group appear to have an immunizing, stress-suppressing, and cognitive-enhancing effect. Importantly, even natural variations in the quantity and quality of maternal care experienced by offspring during early development have been shown to have long-term effects on later stress responses. [5] Therefore, this scientific hypothesis implies that the better the quality of maternal care, the easier it is for the dog to accept and resist pressure.

Few studies of working dogs support the idea that the environment during maternal care also significantly impacts adult behavior. Two scientists, Respell and Duffy, interviewed the puppy raisers of over 975 prospective guide dogs about their dog's behavior and the characteristics of the dog's environment. Consequently, they proposed that less aggression towards humans and dogs, as well as lower levels of dog-directed fear, non-social fear, and touch sensitivity, were associated with dogs living with an experienced puppy raiser (quantified as the number of prospective guide dogs previously raised) at 12 months of age, as well as lower levels of dog-directed fear, non-social fear, and touch sensitivity, were associated with dogs living with an experienced puppy raiser (quantified as the number of prospective guide dogs previously raised) at 12 months of age. Conversely, dogs raised in families with other dogs were also associated with less anger and willingness to attack other people, indicating a more even temperament and sensitivity to fear and negative emotions. In addition,

dogs with more opportunities to play with other dogs scored lower on separation-related behaviors. Importantly, many of these behaviors are associated with outcomes in working dogs.

On the other hand, one researcher, Boyle, found that trained military and K-9 working dogs that were isolated for longer periods were more successful later on. Boyle pointed out that as a result of the correlation, dogs with higher stress tolerance- a desirable behavior in working dogs- are likely to have been left alone longer. [6] Whatever the mechanism, it highlights a readily observable number of prospective guide dogs previously raised) at 12 months of age. Conversely, dogs raised in families with other dogs were also associated with less anger and willingness to attack other people, indicating a more even temperament and sensitivity to fear and negative emotions. In addition, dogs with more opportunities to play with other dogs scored lower on separation-related behaviors. Importantly, many of these behaviors are associated with outcomes in working dogs.

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## **2.2. Increase working dog's standard of living by physical items and consequently alleviate anxiety**

### **2.2.1 Herbal remedies before working**

A large number of biologists suggested that herbal remedies would have a prominent impact on preventing and calming animal anxiety and fear. First of all, skullcap and valerian remedies are said to reduce anxiety and excitability. However, it has been shown that the trainer must give the remedy before the dog feels panicked and worried; once the dog has been aroused, any potential benefit is lost. [7]

Second, we should explore zylkene. Scientific studies have shown that this food supplement can help animals deal with anxiety. The active ingredient is a refined protein found in milk that acts on receptors in the brain. The manufacturer recommends taking zylkene before stressful situations, and it is best for situations such as going to a boarding kennel where stress can be prolonged.

In addition, as a common mistake made by dog owners, it is important to remind every dog owner that working dogs should avoid using sedatives. Not only can those dogs become addicted to drugs, but also because the effect wears off over time, so there's a need to increase the dose of potentially addictive drugs. Sedatives are incorrectly believed to make animals sleepy and thus reduce anxiety. Their brain is now less able to learn new behaviors, which means that any progress made through retraining will be painful and entirely forgotten when the drugs stop. Some sedatives can even cause disorientation, and when the working dog is anxious, its discomfort can be amplified. [9]

### **2.2.2 Dog-Appeasing Pheromone**

DAP, which stands for 'Dog Appeasing Pheromone,' is a patented formula that mimics the comforting pheromone that female dogs secrete during breastfeeding (from 3- 5 days after the puppy's birth) to signal to puppies that they are relaxed and protected. Therefore, when dogs sense pheromones, they feel safe and comfortable, as if their mother is comforting them, reducing anxiety responses and the urge to react in destructive ways. Harness the power of natural pheromones to create a feeling of safety and calm. In addition, the natural canine pheromone is an extremely specific signal that can only be detected by dogs. As a result, it's safe to have DAP around people like pregnant women and other animals without disturbing them. DAP can be in liquid form and can be sprayed on the dog's toys and living environments, such as their nests. Working dog owners can also use special collars and traction ropes with DAP to achieve a perennial calming effect that reduces their dogs' anxiety and fear. [8]

### 2.2.3 Music therapy and CBD oil

Music therapy and CBD oil can be used in combination as effective stress relievers. According to the researchers' statistics, music therapy can effectively improve the mental status of working dogs in five areas. First, music therapy has been shown to reduce the heart rate and breathing rates of hyperactive dogs. Therefore, when working dogs finish their tiring work or training, they can listen to this music and gradually tone down their energy. Secondly, music therapy can also act as a catalyst for their recovery. A similar scientific experiment suggested that when cats are anaesthetized, they respond to auditory sensory stimuli; however, light music has a significant slowing effect on their breathing rate and pupil dilation. In addition, good music increases endorphins in dogs' brains. Endorphins are responsible for happy moods and are effective in reducing stress and anxiety in dogs. Professional veterinarians massage dogs with pheromones and music therapy to calm and control overactive and anxious dogs. Fourth, music therapy can enhance the close relationship between working dogs and their owners. Working dogs have been under the strict care of their handlers for a long time, and a lot of work pressure can make them lose trust in their owners. This can lead to resistance and mental injuries, which not only affect their work efficiency but can also cause them to be fired for disobeying orders. Therefore, dog trainers and behaviorists often use music to help dogs calm down before training. [9]

Last but not least, music therapy has been shown to help some dogs prepare for what is coming without feeling anxious. They can associate music with specific places where people take them. For example, before the dogs go on an emergency search, their owners play the music that was played before the last search so that the dogs know ahead of time about the task ahead. On the other hand, CBD oil complements music therapy, in which cannabidiol is a compound found in cannabis. CBD interacts with endocannabinoid receptors located in the central and peripheral nervous systems, which help maintain homeostasis and keep it in a normal and healthy state. Alternatively, CBD is a cannabinoid found in 40% of commercially produced cannabis plants and works in the endocannabinoid system of vertebrates such as humans and dogs. This system helps maintain homeostasis in body systems, such as the peripheral nervous system (PNS). Therefore, it can reduce the anxiety of working dogs by treating their neuropathic or arthritis pain. It also helps control seizures, anxiety, and depression, improves appetite, promotes general well-being and a relaxed mood, and relieves emotional distress. However, some scientists suggest that there may be some potential side effects, although this has not been tested. Side effects include causing dogs to have dry mouths and lowering their blood pressure.

### 2.2.4 Blindfolds

Blinders covering the face of a working dog can reduce anxiety by reducing visual stimulation. The professional blinder will not completely leave the dog with only darkness in front of its eyes, but it will allow your dog to see the shape and general direction of things without showing details. Therefore, most dogs who are afraid of flashes and bright lights, such as thunderstorms or fireworks, can get a lot of relief after putting on a blindfold. The blindfolds are extremely targeted to help the working dogs because most of the working dogs spend a long time on the dangerous battlefield, the surging scene, or the crowded airport, and they have a high probability of post-traumatic stress disorder in the chaotic environment and the flash of the reporter and even the light of the weapon. For example, after the end of the search and rescue, the U.S. police dog will put on a blindfold for the dog to soothe and relieve the pressure in time to accelerate recovery. However, there is an extremely important tip for using a blinder. [9] When using eye masks, owners need to be aware that the eye mask caps need to be tested without stress to ensure the dog accepts them and feels comfortable before adding them to stressful situations. If the dog's paws stare frantically at the blinder, stand with its head down, get frustrated, or shake, then the owner should remove the blinder. This is because, for a small number of special dogs, eye masks increase their fear and anxiety. After all, they feel trapped. Hence, this approach requires careful consideration.

### 2.2.5 Thunder vest

Thunder vests fit snugly to a dog's body and gently distribute the pressure around the torso. This was to mimic the soothing embrace they experienced as dogs. On a scientific basis, this process of gentle pressure on a dog's body can cause the release of endorphins, which gives animals a calm and relaxed feeling. [10] This method would work better for K-9 and SAR dogs as they can often work in dark places. However, scientists suggest that if the vest does not fit some dogs correctly, the discomfort can still bring negative emotions to the dog. Therefore, trainers should be careful when choosing appropriate vests.

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