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Behavior Modification - Desensitization and Counterconditioning

Counterconditioning, Response Substitution and Desensitization

Counterconditioning and desensitization are powerful ways to change behavior. They are usually used in combination. Desensitization provides a means of safely exposing the pet to the stimulus at a level at or below which fear is likely to be exhibited. Counterconditioning is used to change the pet's attitude or emotional response to a stimulus. Response substitution is a technique in which the pet is taught, using reinforcement based techniques, to replace the undesirable behavior with one that is desirable.

"The treatment of fear and anxiety must focus on achieving BOTH the desired emotional state AND the desired behavioral response."

Although counterconditioning generally refers to changing the pet's mood (through positive pairings and associations), and response substitution refers to training the desired behaviors (through reinforcement), the treatment of fear and anxiety must focus on achieving BOTH the desired emotional state AND the desired behavioral response. Therefore, these terms may occasionally be used interchangeably. Refer to our companion handouts on implementing exposure training, settle exercises, and reward based training for practical applications as to how desensitization, counterconditioning and response substitution can be achieved.

For most behavior problems, especially those associated with fear or anxiety, the use of punishment is contraindicated since, even if it suppresses the undesirable behavior, it may further aggravate the pet's fear and anxiety without teaching your pet anything new. Training must focus on getting the desired response and a positive mood, rather than trying to stop undesirable responses.

What is classical counterconditioning?

Counterconditioning means changing the pet's emotional response, feelings or attitude toward a stimulus. For example, the dog that lunges at the window when a delivery person walks by is displaying an emotional response of fear or anxiety. Counterconditioning would be accomplished by pairing the sight, sounds and approach of the delivery person with one of the dog's favored rewards to change the emotional state to one that is calm and positive. Similarly for cats that are anxious or fearful when exposed to a visitor or other cat in the home, we would want to pair the cats favored rewards with the presence of the visitor or other cat. A critical element of success is to prevent any exposure that might lead to a negative outcome during training. This might be accomplished by recognizing potential problems and using a sit and focus command, a turn around or maintaining a relaxed walk past the stimulus.



What is desensitization?



Desensitization is the gradual exposure to situations or stimuli that would bring on the undesirable behavior, but at a level so low that there is no negative response. As the animal experiences the stimulus but does not respond in the undesirable way, the animal becomes "less reactive" to the stimulus, and the pet can soon tolerate a somewhat more intense stimulus without exhibiting the undesirable response. The key to effective desensitization is to first find the threshold at which the pet first responds by designing a stimulus gradient (from low responses to high responses) so that the pet can be gradually exposed to progressively more intense levels of the stimulus without the undesirable behavior being elicited. Again, it is essential that the threshold not be surpassed unless the pet can be effectively calmed and settled.

What is response substitution?

Response substitution is a technique in which an undesirable behavioral response to a stimulus or situation is changed to one that is desirable. The goal is to reinforce only those responses that are desirable. Reinforcement of a response that is incompatible with the undesirable response might be referred to as differential reinforcement of an incompatible response (DRI). The challenge is to get the desired behavior when exposing the pet to the stimulus, while also getting the appropriate relaxed and happy emotional state. A number of techniques can be used to help the owner turn the inappropriate response into one that is desirable. If the dog is trained through reward based techniques to immediately focus on the owners in response to commands (settle, watch) in the absence of any distracting or fear eliciting stimuli, the training might then progress (through desensitization techniques) to gradually more intense levels of the stimulus. (See our [settle exercises handout](#) for more details).

"This is known as negative reinforcement because the behavior is being **reinforced** by **removal** of pressure and tension."

Alternatively, lure and target training or disruptive devices might be used to help more quickly and effectively achieve the desired outcome. For most dogs, a head halter and leash is often the safest, most effective and most immediate method to obtain the desired response (e.g. sit, focus, or heel). In addition to the use of positive reinforcement, an immediate release of leash tension for each successful outcome also serves to reinforce the behavior. This is known as negative reinforcement because the behavior is being **reinforced** by **removal** of pressure and tension.



Regardless of the technique used, if the pet can be taught to display a new acceptable response instead of the undesirable response when exposed to a stimulus then response substitution has been achieved. Again, rather than attempting to overcome an intense response, the training should be set up to expose the dog with stimuli of gradually increasing intensity (controlled exposure) to ensure a successful outcome. By working with a gradient and favored rewards, you may also be simultaneously counterconditioning the pet. However, when working with fear and anxiety, the training is not complete if you merely get the desired behavioral outcome. A positive emotional state (relaxed, eating treats) must also be achieved using counterconditioning. For counterconditioning and response substitution to be most effective, you need to establish a reward gradient for your pet and a method for controlling the exposure to the stimulus in gradually increasing gradients.

We suggest that you review our handout on [implementing exposure exercises; setting up to succeed](#).

*This client information sheet is based on material written by: Debra Horwitz, DVM, Diplomate ACVB & Gary Landsberg, DVM, Diplomate ACVB
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