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When an animal persistently and repetitively engages in a single behavior that serves no apparent function, the behavior is called a stereotypy. When the stereotypic behavior persists regardless of the environment, compulsive disorder (CD) is diagnosed. CD occurs in many species and is a common diagnosis in behavior services.

In human medicine, the more complete term, obsessive-compulsive disorder (OCD), is used. According to the Diagnostic and Statistical Manual of Mental Disorders, 4th edition, obsessions are "persistent ideas, thoughts, impulses, or images that are experienced as intrusive and inappropriate and that cause marked anxiety or distress." Thus, by definition, obsessions take place within the psyche and cannot be directly measured by an external observer. Compulsions are "repetitive behaviors or mental acts, the goal of which is to prevent or reduce anxiety or distress, not to provide pleasure or gratification." While repetitive mental acts cannot be observed in animals, repetitive behaviors can. Thus the more limited term CD is typically used for animals.

Not all repetitive behaviors are CD. For example, a captive wild animal confined to a small cage may pace back and forth. This behavior probably derives from multiple motivations, including attempts to escape and attempts to engage in physical activity at levels that would be normal for the animal in the wild. As the animal paces back and forth, the behavior can be identified as stereotypic. If the animal is then turned loose in its natural habitat or in a large, appropriate, complex enclosure and begins to engage in behaviors that are normal for its species, it does not have CD. If, on the other hand, after release into a large, complex enclosure, the animal goes to a corner, begins pacing back and forth, and spends large amounts of time repeating this behavior over the following days, CD can be diagnosed. The repetitive behavior is now being caused by a pathologic development in the central nervous system and is unrelated to environmental conditions.

CAUSES AND DIAGNOSIS OF COMPULSIVE DISORDER

In human psychiatry, OCD is considered to be an anxiety disorder. Likewise, CD in animals is ultimately based in anxiety. Therefore, punishment of the behavior is always contraindicated. Environment and genetics can both contribute to the development of CD in a given animal. Stressful environments that either overstimulate or understimulate the animal are common causes. The stereotypic behaviors that evolve into CD often begin for other reasons as well (see the box on page 626).

Genetic influences are the basis for the frequency of specific manifestations of CD in various species and breeds. CD most commonly manifests in cats as excessive self-grooming or sucking and chewing of cloth, especially wool. Dogs exhibit a wider variety of common forms of CD (see the box on page 626). However, while particular stereo-
Types of Behavior That May Evolve into Stereotypy or Compulsive Disorder

**Displacement behavior**—The animal is motivated to perform two behaviors that are in conflict with each other. Instead of engaging in either behavior, it engages in a third behavior that is unrelated to the actual context.

**Redirected behavior**—The animal is motivated to perform an activity toward an appropriate target but is prevented from reaching that target. Therefore, it directs its behavior toward another target.

**Vacuum activity**—The animal is motivated to engage in a behavior in the absence of the stimulus that would normally elicit the behavior. Therefore, it engages in the physical movements of the behavior without any external stimulus.

Typies are most common in particular species and breeds, any behavior of which an animal is physically capable can become a compulsive behavior, and any breed may develop a compulsive behavior that is atypical for that breed. The critical criteria in the diagnosis of CD are that the behavior is persistent and frequent, consumes a significant amount of time, and serves no apparent function. Some behavioral sequences are simple (e.g., running in circles), while others are complex, such as “turn head to the right, turn head to the left, arch the back, lower the head, raise the head, snap at the air.” Behaviors of CD are commonly classified according to their general type (see the box to the right).

Most perplexing are the cases in which physical lesions or illnesses evolve into CD. For example, in one of my cases, a dog with no history of CD sustained an injury to its foot. After the injury had been treated and had healed completely, the patient’s Elizabethan collar was removed. The dog proceeded to lick and chew the healed foot until it caused significant damage. Surgery and complete healing were attempted two more times before a behaviorist was consulted. The dog was placed on an anticomulsive medication (fluoxetine), and the problem resolved.

Behaviors that become common because of inadvertent owner reinforcement can also evolve into CD and can continue to worsen even after owner reinforcement has discontinued. Discrimination of CD from the rebound effect that occurs when prolonged variable ratio reinforcement is discontinued may be difficult, and close monitoring of owner–pet interaction over many days may be required to make the diagnosis.

Repetitive behaviors may have a variety of causes other than CD, and complete medical and behavioral evaluations are essential when CD is suspected. A repet-

Compulsive Disorders Common to Specific Dog Breeds

- Checking the hindquarters—Miniature schnauzer
- Flank sucking—Doberman pinscher
- Fly chasing—Miniature schnauzer
- Freezing—Bull terrier, miniature schnauzer
- Spinning—Bull terrier
- Stargazing—Miniature schnauzer
- Tail chasing—German shepherd

Behavior Types Used to Classify Compulsive Disorder

- **Aggression**—Attacking inanimate objects; growling and biting at self
- **Grooming**—Chewing or licking of self, objects, or other animals; flank sucking
- **Hallucination**—Fly chasing; searching for imaginary prey; staring
- **Locomotion**—Circling, digging, fence running, floor scratching, freezing, jumping in place, pacing, shadow chasing, tail chasing, whirling
- **Oral or ingestion**—Pica, polydipsia, polyphagia, wool sucking, wool chewing
- **Vocalization**—Rhythmic barking, crying, howling


itive behavior that only occurs in the presence of the owner, as verified by videotaping the patient in the owner’s absence, may be an operantly reinforced behavior problem, sometimes called attention-seeking behavior. A repetitive behavior that occurs only in the absence of the owner is likely to be a manifestation of separation-related anxiety. Intense, frequent repetitive behavior that manifests with an acute onset may be a response to an acute stressor and may not yet have evolved into true CD. Clinical signs of psychomotor seizures, dermatologic disorders, and vision disorders can include some of the behaviors characteristic of common forms of CD.

TREATMENT OF COMPULSIVE DISORDER

Treatment consists of a combination of environmental modification, patient behavior modification, and medication. Owner education is also critical. Instructions to reprimand or otherwise punish behaviors of CD are common in the popular literature. However, punishment is not helpful and, at worst, may exacerbate the situation by increasing the patient’s anxiety.

Causes of conflict and stress in the patient’s environment need to be identified and, as much as possible, eliminated. Sometimes this is simple. For example, if a cat is developing CD secondary to the stress of repeatedly being chased by a dog in the house, providing the cat with its own room where it is safe from the dog’s harassment for significant parts of the day may be easy and beneficial. However, sometimes eliminating the stressor is difficult. If a pet is developing CD during, and as a response to, a hostile breakup of a marriage, with significant yelling and conflict occurring in the household, it may not be possible to make significant progress until the couple has separated and the patient is settled into a stable and predictable life with one person.

If the owners cannot readily identify stressors in the animal’s life, a comprehensive, detailed behavioral and environmental history is likely to be needed to identify problems. In reviewing the patient’s history, it is important to consider the amount, frequency, and type of exercise and play the animal can engage in and whether its level of activity is appropriate for its age, species, and breed. A predictable environment is also important. This does not mean that the family must develop a rigid schedule, but their daily and weekly sequence of events needs to be fairly consistent.

In most cases, it is beneficial to train the patient to engage in other behaviors by using training techniques that involve positive reinforcement of desired behaviors.

### Table 1. Medications Prescribed for Compulsive Disorder in Dogs and Cats

<table>
<thead>
<tr>
<th>Medication</th>
<th>Canine Dose</th>
<th>Feline Dose</th>
</tr>
</thead>
<tbody>
<tr>
<td>Selective serotonin reuptake inhibitors</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fluoxetine</td>
<td>1–2 mg/kg q24h</td>
<td>0.5–1.5 mg/kg q24h</td>
</tr>
<tr>
<td>Paroxetine</td>
<td>1–1.5 mg/kg q24h</td>
<td>0.5–1.5 mg/kg q24h</td>
</tr>
<tr>
<td>Sertraline</td>
<td>0.5–4.0 mg/kg q24h</td>
<td>0.5–1.5 mg/kg q24h</td>
</tr>
<tr>
<td>Tricyclic antidepressant</td>
<td></td>
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<tr>
<td>Clomipramine</td>
<td>1–3 mg/kg q12h</td>
<td>0.25–1.3 mg/kg q24h</td>
</tr>
<tr>
<td>Benzodiazepines</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alprazolam</td>
<td>0.02–0.1 mg/kg q4h</td>
<td>0.0125–0.25 mg/kg q8h</td>
</tr>
<tr>
<td>Clonazepam</td>
<td>0.1–0.5 mg/kg q8h</td>
<td>0.015–0.2 mg/kg q8h</td>
</tr>
<tr>
<td>Diazepam</td>
<td>0.5–2.0 mg/kg q4h</td>
<td>0.1–1.0 mg/kg q4h</td>
</tr>
<tr>
<td>Oxazepam</td>
<td>0.04–0.5 mg/kg q6h</td>
<td>0.2–1.0 mg/kg q12h</td>
</tr>
<tr>
<td>Narcotic antagonist</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Naltrexone</td>
<td>1–2.2 mg/kg q12h</td>
<td>25–50 mg/cat q24h</td>
</tr>
</tbody>
</table>

and ignore undesired behaviors. It does not particularly matter what the animal is trained to do, although the tasks should be ones that it is physically and mentally capable of mastering in a short time. This kind of training fosters improved human–pet relationships and gives the pet an activity other than the repetitive behavior. When the pet has learned one or more cues, response substitution can be used when it engages in the repetitive behavior. For example, if a dog begins spinning, the owner can call it to come and sit, then reinforce it for doing so.

If the problem is partly caused by fear of a specific stimulus in the environment, systematic desensitization and counterconditioning to the fear-inducing stimulus (see “Understanding Behavior: Classical Conditioning—Learning by Association,” June 2006) may be beneficial.

Although cases of CD that are identified early may be treatable without medication, most cases require medication for successful resolution (Table 1). At this time, all use of medication for the treatment of CD in animals is extralabel. This fact and the potential side effects should be discussed with the client. A signed permission-to-treat form should be obtained. The most commonly used medications for CD are the various serotonin reuptake inhibitors, including selective serotonin reuptake inhibitors and tricyclic antidepressants. If anxiety or a stressful environment is part of the ongoing problem, benzodiazepines may also be beneficial. Narcotic antagonists can be useful, especially if the problem is identified early. However, cost and availability of oral forms (e.g., naltrexone) often make the use of narcotic antagonists impractical.

**REDUCING RECURRENT OF COMPULSIVE DISORDER**

When used together, environmental and behavior modification, coupled with the use of appropriate medication, can often bring about significant improvement in patients with CD. However, owners should be cautioned not to expect complete resolution. Patients that have previously had significant CD are likely to relapse when subjected to new stressors in their environment. Therefore, prevention of relapses should focus on providing the pet with a predictable, low-stress environment.

**REFERENCE**


**RECOMMENDED READING**


