CANINE & FELINE OBSESSIVE COMPULSIVE DISORDERS

Compulsive behavior is an abnormal and dysfunctional response to normal stimulation from the environment. It is characterized by sequences of behavior that are repetitive, consistent in form and orientation, and do not appear to serve an obvious purpose. Compulsive behavior is usually time consuming, may result in physical injury to the animal, may significantly impair the animal's ability to function normally, and may impair the animal's relationship with its owner. Compulsive behavior occurs in most species, including dogs, cats, horses, birds, and humans.

Compulsive behavior has been recognized in people for some time, but the recognition of its occurrence in companion animals is relatively recent. Such repetitive and invariant patterns of behavior were historically viewed as stereotypies and thought to be exhibited only by captive animals in suboptimal environments that were faced with conflicts they couldn't resolve. Currently, researchers are recognizing many similarities between repetitive behavior in animals and the human psychiatric condition known as obsessive compulsive disorder (OCD). Many of the repetitive behavior conditions we see in animals show similar characteristics in expression and developmental patterns and respond to the same types of drugs used to treat human OCD. The transition from viewing repetitive behavior in animals as stereotypies that are entirely due to environmental deprivation to an actual psychological condition was suggested by several researchers including Dr. Judith Rapoport, a psychiatrist at the National Institute of Mental Health. She noted many similarities between a form of excessive grooming in dogs (Acral Lick Dermatitis) and compulsive hand washing in people with OCD.

Behaviors have both innate and learned components. Innate components of behavior are encoded in regions of the limbic system and hypothalamus with the motor output of such drives facilitated through interplay between the limbic system and basal ganglia. The whole process is modifiable by the frontal cortex, which serves to activate or inhibit the output in a timely fashion and in accord with the animal's best interests. For example, a simple process such as grooming may be activated directly by electrically stimulating appropriate regions of the hypothalamus or by targeted feed-forward from appropriate areas of the cerebral cortex. Usually, the grooming is activated as and when it is required, but occasionally it occurs out of context as a displacement behavior.

Displacement behaviors, such as displacement grooming, are forms of conflict behavior; behaviors that occur when two almost equal drives to perform other incompatible behaviors cancel each other out. One theory is that the neutralizing effect of opposing behaviors (fight or flight) disinhibits a third behavior (e.g., grooming). If the conflict is sustained, then so is the tendency for the displacement behavior that can become engrained. Once the behavior becomes "fixed", the pathways in the brain that control the behavior are sensitized so that the animal follows the compulsive sequence of behaviors even when the conflict is resolved. Once the animal loses control over initiating or terminating the behavior, a compulsive behavior is the result. It is suspected that brain chemistry is altered in affected animals. Positive response to treatment with serotonin re-uptake inhibitors, such as clomipramine and fluoxetine, has led to

speculation that a serotonergic factor may play a role in maintaining compulsive behavior. There is also increasing evidence that the development of compulsive behavior is facilitated by an inherited predisposition.

Compulsive behaviors do not stop at grooming. Any innate ("hard-wired") behavior pattern can be expressed compulsively, including predatory behavior, ingestive behavior, maternal behavior, and sexual behavior. The form the compulsive behavior takes appears to depend on the species (and perhaps the breed) and to some extent on the animal's experiences and other influences. Compulsive behaviors become a problem when they prevent the animal from performing more appropriate behavior or result in self-mutilation.

Characteristics of compulsive behavior include:

- Maladaptive repetition of normal behaviors
- Onset may be associated with exposure to specific environmental triggers
- Once the compulsive behavior is incorporated into the animal's behavioral repertoire, it will be expressed even if the initiating conflict is resolved
- Repetitive behavior serves no obvious purpose and is potentially harmful to the animal
- Animal appears unable to control its own actions
- Animal appears frustrated or anxious
- Repetitious behavior occurs with sufficient frequency to significantly impair the animal's ability to function normally and impairs relationship with owner

<u>CANINE COMPULSIVE BEHAVIOR</u>

Lick Granuloma (a.k.a. Acral Lick Dermatitis or ALD):

This particular compulsion is related to grooming and has many features in common with obsessive compulsive disorder (OCD) in humans. In humans, obsessive-compulsive disorders are often associated with grooming events, such as repetitive hand washing. ALD is characterized by repetitive licking of the lower extremities of the fore or hind legs that results in physical injury. Bald spots appear first, and if the frequency of licking continues to be excessive, the skin may become abraded, causing formation of deep skin ulcers that may result in secondary infection. In extreme cases, the underlying bone can become infected necessitating amputation.

ALD can be confused with some medical conditions, so before you make a psychogenic

diagnosis, you must first rule out any underlying medical cause. Any condition that causes physical discomfort can stimulate excessive grooming. Potential differential diagnoses include allergies, fleas, skin infections, trauma (foreign bodies, fractures, prior injury), arthritis, or tumors. However, even once the primary medical cause is resolved, a susceptible dog (i.e., one that is predisposed to anxiety conditions) may continue to excessively groom the previously affected area. At this point the condition may be viewed as psychogenic and should be treated accordingly.

Licking usually first appears in young adulthood or middle age (2-5 years of age), oftentimes in conjunction with exposure to situations that could be construed as stressful. Such anxiety-provoking triggers can include separation anxiety or any situation that disrupts the dog's bond with its owner, noise phobias, a change in the dog's physical or social environment, or a continual lack of appropriate releasing stimuli for normal (innate) tendencies. This maladaptive grooming behavior can wax and wane in response to prevailing stressors in the sense that when the dog is experiencing stress, the condition may worsen, but when the dog is not anxious, the behavior may temporarily improve. True to form for a compulsive behavior, once the licking pattern is well established, it will be performed out of context; in other words, when the dog is not anxious. Dogs that have been punished for excessive grooming may purposely remove themselves to a remote area away from the owner to engage in the behavior, suggesting there is an uncontrollable, if not obsessive, quality to this condition.

Once the behavior is engrained, the condition is usually refractory to all forms of traditional veterinary therapy including anti-inflammatory drugs, topical therapy, anxiolytics and sedatives, and mechanical restraint. Although Elizabethan collars will allow some resolution while the collar is on, such mechanical restraint does nothing to address the underlying anxiety-driven condition. Therefore, it is not surprising that once the collar is removed, the dog will resort to licking.

ALD has genetic components in the sense that (a) it is a grooming disorder and aspects of grooming are hard-wired, and (b) it is more prevalent in certain breeds and perhaps within certain breeding lines. ALD is most common in large breeds (> 50lbs) and active breeds that have been selected to work closely with people and form strong attachments. Not surprisingly, many dogs with ALD also have other anxiety related behavior conditions, such as separation anxiety, thunderstorm phobia, or fear-based territorial aggression. Many affected dogs have nervous or anxious temperaments. The breeds most commonly affected include, but are not limited to, Dobermans Pinschers, Labrador Retrievers, Great Danes, and German Shepherds. Interestingly, smaller breeds are less prone to develop ALD, but rather engage in compulsive chewing of the digital pads or toenails. Keep in mind that although ALD has potential genetic underpinnings, environmental influences are often necessary for the full expression of the condition.

Light Chasing (Shadow Chasing):

Light chasing is a compulsive behavior that is likely related to displaced predatory behavior. The

behavior is characterized by staring, biting, leaping, chasing, and barking at shadows or lights. There is frequently a history that the owner has initiated and reinforced the behavior by playing with a flashlight, but subsequently the dog is unable to control the behavior. It is our impression that dogs that develop this behavior are under a certain amount of environmental stress, and engaging in this behavior may provide some temporary relief. Humans with OCD frequently report that they engage in compulsive behavior to relieve the anxiety caused by their obsessions. Light (shadow) chasing may have a genetic basis since (a) in terms of appearance, it seems to stem from hard-wired predatory behavior and (2) it appears to occur more frequently in certain breeds including Wire-haired Fox Terriers, Old English Sheepdogs, Schnauzers, Rottweilers, and Golden Retrievers. Owners of shadow chasers appear to be less likely to seek behavior consultations, presumably because these dogs rarely injure themselves in the process. Only when the behavior becomes disturbing to the owner is a consultation requested. Therefore, as opposed to other compulsive behaviors that result in physical injury to the dog, we have comparatively little information on shadow chasers regarding age of onset, genetic family information, or response to treatment.

Fly-Snapping:

Fly-snapping behavior is another compulsive behavior that may have displaced predatory underpinnings. Fly-snapping is characterized by staring at invisible insects, snapping at the air and flank area, head shaking and scratching, and rapid movement of the eyes, head and body toward the "flies". In essence, the dogs behave somewhat frantically, as if they were being pursued by a swarm of gnats. Fly-snapping behavior has traditionally been thought to be a form of psychomotor epilepsy. In cases where there is a seizure origin, there is often a pre-ictal mood change, the bouts are of short duration, and salivation, defecation, urination, and a post-ictal stage (lethargy, disorientation) may be observed following an episode. In other cases, fly-snapping appears to be compulsive in nature and is thought to be related to predatory behavior "gone awry". Fly-snapping is considered to be compulsive when the bouts are frequent, disruptive to the animal's functioning, continue for prolonged periods of time, are associated with anxiety, and no aura or other symptoms compatible with a diagnosis of psychomotor epilepsy are evident. It is also possible that a seizure focus may be responsible for triggering the compulsion. Compulsive fly-snapping may have a genetic basis, as certain breeds seem more predisposed to develop this condition. These breeds include, but are not limited to: Cavalier King Charles Spaniels, Dobermans, Bernese Mountain dogs, English Springer Spaniels, Labrador Retrievers, German Shepherds, and various terrier breeds. Little data is available for the age of onset, although the Cavalier King Charles Spaniel breed club reports that onset in this breed is typically 8-18 months of age. As with light chasing, because this behavior is frequently reported to be more frustrating for the owner than injurious to the dog, owners may be less motivated to seek professional help and, as a consequence, data are sparse at this time.

Flank-Sucking:

Flank-biting or flank-sucking is thought to be related to displaced nursing behavior, although some dogs lope in circles as they attempt to mouth their flanks giving a somewhat displaced

predatory appearance to the behavior. Repetitive mouthing and sucking of the flank region resulting in anything from a rough, dampened coat to raw, open sores characterizes the behavior. In addition to self-mutilation (lesions), an affected dog also may show a decrease in appetite and become unresponsive, or even worse, aggressive towards the owner when it is approached while flank sucking. The onset of this condition is usually observed sometime between puberty to young adulthood, and the onset and exacerbation of the condition is often associated with inactivity or exposure to conditions that increase the dog's arousal levels. Flank-sucking is thought to have a genetic basis since (a) it appears to be a displaced nursing behavior which is hard-wired, and (b) certain breeds appear to be predisposed to developing this condition, particularly Doberman Pinschers.

Blanket sucking is a similar behavior to flank sucking and also appears to be most prevalent in the Doberman Pinscher breed. Owners often report that the dogs engage in blanket or flank sucking behavior when they are bored or at bedtime to soothe themselves. The majority of owners do not view these behaviors to be a problem. Injuries as a result of the behavior are relatively uncommon when compared to some other compulsive behavior, although obstructions can occur in those dogs that ingest blankets and other inedible objects.

Other Compulsive Behaviors:

Repetitive circling, fence running, digging, and pacing are also common manifestations of compulsive behavior. Some breeds, especially retrievers and terriers, are prone to developing dysfunctional chewing, chasing, and carrying of inedible objects. Compulsive behavior with objects differs from play behavior or normal breed tendencies. The dogs may engage in these behaviors for hours or until they collapse from exhaustion. If the owner prevents the dog from performing the unwanted behavior, the dog may resort to a different but equally compulsive behavior. Thus the compulsion is merely transferred and not eliminated. These dogs may experience weight loss, worn teeth, abraded footpads, and abrasions to the nose and mouth. In severe cases, these behaviors can seriously interfere with the dog's relationship with its owner and its ability to function normally. While excessive barking is typically diagnosed as a nuisance behavior stemming from inappropriate management or anxiety, certain forms of rhythmic barking may be compulsive.

Tail-Chasing/Spinning:

Tail chasing appears to be a displaced predatory behavior. The condition is characterized by a slow to moderate rotation while focused on the tail to rapid spinning bouts with no apparent focus. The dog may snap, grab, and bite the tail while engaged in this behavior. Breeders often differentiate between tail chasing and spinning and argue that tail chasing is a separate condition and of less concern. However, our research demonstrates that these two somewhat different manifestations are one and the same thing. Most dogs express tail chasing and spinning interchangeably, and we often find that chasing focused on the tail precedes rapid spinning bouts. When fully engaged in their compulsion, tail chasing dogs appear to be dissociated from their environment. They often cannot be distracted, are unresponsive to the

owner's commands, and seem unaware of their surroundings. Some dogs may become irritable or aggressive if restrained. In rare cases, continuous tail chasing associated with hysteria and frenzied vocalizations can progress to a rage-like aggression directed toward the environment, the owners, or other household pets. Injuries incurred while tail chasing include self-mutilation of the tail, tail fractures while banging into walls or furniture, weight loss, exhaustion, and abrasion of digital pads.

Through our research, we have identified two behavioral categories of tail chasers that differ in the frequency and degree of expression of this behavior: subclinical and clinical tail chasers. Some mildly affected dogs (subclinical) may only tail chase occasionally and in response to specific triggers. These dogs can readily be interrupted, seem aware of their surroundings, and the behavior can be controlled by eliminating the offending trigger. These dogs generally are not a concern from a behavioral standpoint, and you will rarely see them in your practice. The uninformed owner often views mild tail chasing as normal ("cute") behavior, not realizing that exposure to stress can often exacerbate the condition. Other dogs (clinical) may tail chase anywhere from 2-3 times per day to up to 80% of their waking hours on a daily basis. These moderately to severely affected dogs are often unable to function normally and their relationship with their owner is impaired.

The onset of tail chasing typically occurs in young dogs prior to puberty, although it can occur anytime in response to a stressful trigger. The age range of onset we have observed extends from 2 months to 10 years of age. The onset may be sudden with no apparent eliciting trigger, particularly in young dogs. In other cases, the onset may be sudden but associated with exposure to a clearly identifiable trigger. Alternatively, the onset may be gradual with the dog showing mild, occasional, and easily interrupted tail chasing bouts that over time and in response to environmental pressures gradually erupt into the full-fledged condition. Both the dog's genetic background and environmental influences likely influence the variation in development. Tail chasing is considered to have a genetic basis because (a) it appears to be a displaced predatory behavior, (b) it is particularly prevalent in terriers and herding breeds, especially Bull Terriers and German Shepherd dogs, and (c) extensive data on Bull Terriers strongly suggest the disorder is familial at least in this breed.

Finally, our research has demonstrated that some Bull Terriers who chase their tails appear to have brain wave (EEG) changes indicating some quasi-seizural disorder. The observation that some tail chasers respond favorably to the addition of anticonvulsant therapy in addition to anti-obsessional medication also suggests a possible connection between compulsive behavior and seizure activity. The coexistence of a compulsive disorder and abnormal EEG activity has been identified in human psychiatric medicine. Over 40% of human bulimics have abnormal EEGs, so a precedent for the linkage of OCDs and abnormal brain wave activity already exists.

Treatment of Canine Compulsive Behavior:

1.) Identify the Conflict

Reducing stress by identifying methods of decreasing the sources of arousal and conflict are the first aspects of treatment that should be explored. It is important to identify when, and in what situation, the behavior occurred for the first time, and under what circumstances it is currently performed. Unfortunately, it is not always possible to identify the conflict, and if identified, it may be difficult or impossible to remove it. In the latter case, the owner will need to try to desensitize the dog to the stressful situation. Conditions known to trigger anxiety in susceptible dogs include benign experiences that would not have a negative impact on most dogs. Potential triggers for a susceptible dog include:

<u>Environmental & Social Conflict</u>

- Any conditions that increase arousal or conflict (owner departures and returns, food preparation, changes in social or physical environment)
- Lack of opportunity to express species-typical behavior (lack of mental and physical stimulation appropriate for the breed and age of the dog)
- Temporary or permanent move to an unfamiliar environment (change in residence or boarding at kennel)
- An unpredictable environment
- Change in social group (introduction or departure of people or pets; change in social interaction with owners or conspecifics)
- Confinement to small areas (crates, small rooms, kennel)
- Sensitivity to particular sounds (storms, vacuums, yard machinery, telephones, microwave bells, running water)

<u>Physical Discomfort</u>

- Estrus
- Parturition
- Routine surgery
- Fleas, allergies, impacted anal sacs, and any physical trauma

Regarding physical conditions that initially trigger the compulsive behavior, once you successfully treat the original cause, susceptible dogs may continue to show the behavior. At this point, you will need to address the psychogenic aspects of the condition. Finally, what

initially triggers the behavior may not be what maintains the behavior. Once the behavior has become engrained and the threshold for performance is lowered, compulsions may be exhibited with or without the presence of any of a variety of presumed stressful triggers. Pharmacological intervention is usually indicated at this stage.

2.) Environmental Enrichment

As a form of occupational therapy, give the dog distracting toys to keep it busy during times it is prone to engaging in compulsive behavior. Dogs that are motivated by food often like Boomer Balls, Buster Cubes, Busy Buddy, and hollow bones or Kong toys filled with peanut butter, liverwurst, or cream cheese. If the dog enjoys chasing objects, a large Boomer Ball can be made more interesting with rabbit scent (available to train hunting dogs) or vanilla, and the dog can push it around the yard or house.

It is very important to remember that dogs are inherently social. Like people, dogs suffer emotionally, and sometimes physically, when they do not receive sufficient and appropriate social interaction. The optimum treatment strategy is to spend as much quality time with the dog as it needs, though the hustle and bustle of modern life does not always permit this luxury. Failing the owner's ability to provide a rich and diversified life of interesting and entertaining experiences for the dog, the owner should consider engaging the services of others who have more time on their hands. The owner might hire a professional dog walker or a neighbor to visit their dog when they are away for long hours. Also, a well-run doggie daycare can provide an otherwise lonely dog with company and entertainment. The take home message is that dogs are living creatures and need something to occupy their time. Many of the modern-day canine psychoses seem to stem from or be aggravated by an inappropriate lifestyle that is un-stimulating. It benefits dogs to be gainfully employed in something, to have a job to do. In the process of designing a job for the dog, make sure the owner incorporates breed-specific needs, such as herding-type activities for herding breeds, lure coursing for terriers and sight hounds, and retrieving games for sporting dogs.

3.) Exercise

Regular, brisk daily exercise is an effective means to reduce a dog's anxiety, and owners of dogs with compulsive disorders report that increased supervised aerobic exercise is often one of the most beneficial aspects of treatment.

4.) Daily Structure

Dogs feel more secure, and consequently less anxious, when they have a predictable routine. The owner should try to maintain a consistent daily schedule for feeding, exercise, training, and play so the dog can anticipate the activities and attention.

5.) No Discipline

Once compulsive behavior is engrained, it becomes an activity over which the dog no longer has any form of self-control. At this stage, any form of punishment could be construed as being inhumane. Discipline is very complex, and if not used properly, may increase the dog's anxiety by increasing the unpredictability of the owner's interactions with the dog. Dogs that are punished for compulsive behavior may learn to engage in the behavior only in the owner's absence (they may go to a remote location in the house), or they may engage in a different form of compulsive behavior that is more "acceptable" to the owner. For example, a tail chaser may begin to pace in large circles or may engage in repetitive behavior with toys. While this behavior may be less disturbing for the owner, the underlying anxiety still has not been addressed, and the compulsion has merely been transferred, not eliminated. Therefore, we strongly recommend that discipline should not be used in dogs suffering from compulsive disorders.

6.) Training

Formal obedience training, breed-specific activities, agility, and teaching tricks are all an invaluable aid to the treatment of compulsive dogs. Training will make the interaction between the owner and the dog more consistent and make the dog's environment more predictable, which will help decrease the dog's anxiety. Regular training will also stimulate the dog mentally, much like having a job. The owner will also need to use obedience commands for the counterconditioning techniques that may be recommended later in treatment. If the owner is inexperienced at dog training, we recommend you direct the owner to the assistance of a trainer well versed in positive training techniques.

7.) Counter-Conditioning

Counter-conditioning interrupts unwanted behavior by training the dog to respond to a command which is incompatible with continuing performance of the compulsive behavior. This technique is most effective when you can identify and predict the situations that trigger the dog's compulsive behavior. Counter-conditioning is most successfully implemented later in the treatment program after the dog's anxiety level is reduced (via management changes and pharmacological treatment) and response to training commands is well established. The following are the two standard counterconditioning commands we recommend, but any activity the dog enjoys that is incompatible with compulsive behavior can be employed.

The first step to counter-conditioning is to teach the dog to relax on command by responding to the "watch me" command described in the Fear Aggression section of the syllabus. Once the dog understands the command, when the owner senses the dog is about to engage in compulsive behavior, they can use this counterconditioning technique to interrupt the behavior before it is initiated.

As an alternative strategy, once the dog can perform a long "down-stay", the owner can train

the dog to lie on a special dog bed or mat that is used for counterconditioning. Gradually train the dog to relax and lie on the mat when the owner is no longer in the room. Now the owner is ready to intervene before the dog engages in compulsive activity by commanding it to lie on the training mat or bed which should, by the way, be located in a safe and quiet area.

8.) Pharmacological Therapy

If the compulsive behavior has been going on for some time, removing the cause of the conflict in conjunction with the other steps in the treatment program may not be enough to eliminate the problem. In these cases, use of drugs, usually temporary, is indicated to normalize the brain chemistry and stabilize the dog's mood. Although no drugs are FDA approved for the treatment of compulsive behavior in dogs, some success has been achieved using drugs prescribed for the treatment of similar disorders in humans. Our first treatment choice is a serotonin re-uptake inhibitor. Unfortunately, not all drugs of this type are effective in treating all cases of compulsive behavior, and sometimes various augmentation strategies have to be employed. The addition of the anti-convulsant, phenobarbital, to an anti-obsessional drug regimen seems to be particularly helpful in some cases. Owners should be advised that use of medication, without the management changes and behavioral modification techniques outlined above, is inevitably ineffective.

FELINE COMPULSIVE BEHAVIOR

The most common compulsive behaviors exhibited by cats include wool sucking or fabric eating, over-grooming/hair-barbering or hair-pulling behavior (psychogenic alopecia), and possibly feline hyperesthesia. By far, oral behaviors such as wool sucking and psychogenic alopecia predominate in feline compulsive disorders.

Wool-Sucking:

"Wool-sucking" is expressed as repetitive and inappropriate sucking and chewing on fabric, usually woolen, synthetics, or cotton substrates such as sweaters, blankets, or carpets. Some cats suck on or ingest plastic substrates. Wool sucking may start as a displaced nursing behavior directed toward the queen or other cats coat. Such misdirected nursing may subsequently generalize to other fuzzy substrates. As the cat matures, sucking may progress to pica (consumption of inedible material), and the range of materials ingested may broaden to include a wide variety of fabrics and other inappropriate items such as shower curtains, rubber bands, shoe laces, and plastic bags. Damage can be quite extensive and costly and can impose health risks including intestinal blockage. Consequently, wool sucking can be dangerous to the cat as well as a nuisance to the owner. The onset of wool sucking is usually observed anytime after weaning, especially during the first year of life, and frequently before 6 months of age.

Several predisposing factors have been suggested for this behavior, including persistence of kitten oral behavior following early weaning, heredity, inadequate environmental or social

stimulation (feline separation anxiety), or a malfunction of neural control of appetitive behavior. Medical conditions that can trigger abnormal ingestion of inappropriate material include hunger, nutritional deficiencies such as anemia or inadequate dietary fiber, diabetes, or tumors.

Wool sucking is predominantly seen in oriental breeds, although other purebreds and cats of mixed origin as well as domestic long and short hairs exhibit this condition. Siamese cats appear to be particularly susceptible and account for ~50-65% of the affected population. Given the breed predilection, compulsive wool sucking is thought to have genetic underpinnings possibly related to the comparatively anxious and active temperaments of affected breeds.

Psychogenic Alopecia:

Cats normally groom as a displacement behavior when momentarily stressed, but in some cases the frequency and duration of grooming lasts longer than would be considered functional. In susceptible animals exposed to chronic stress, grooming may become maladaptive and be performed out of the normal context. Such grooming is repetitive, excessive, and inappropriate in frequency and intensity of occurrence. Excessive self-licking and chewing result in areas where hair shafts have been sheared, leaving stubble. Some cats may engage in the behavior more aggressively and actually bite and pull out patches of hair from their coat. Hair pulling and chewing may result in skin wounds and ulceration. Hair loss is typically noted on areas only accessible to the cat (abdomen, flank, back, chest, and legs). A stressful change in the environment often coincides with the onset and concurrent anxiety-associated behaviors such as hiding, anorexia, avoidance, and nervousness may be observed.

Medical rule-outs include allergies or hypersensitivity to parasites, food, dust, pollen, or mold. If a trial dose of steroids controls excess grooming, the condition is probably medical and not psychogenic in origin. Fungal infections should also be ruled out as a potential cause of hair loss. Other medical conditions causing discomfort but not associated with skin conditions can cause excessive grooming (cystitis, inflammation of anal sacs, hyperthyroidism, hyperadrenocorticism). Even if a medical condition triggers the onset and is subsequently resolved, a susceptible cat may continue to groom excessively.

In general, females appear to be more commonly affected than males. The onset of psychogenic alopecia may occur at any age but tends to occur around puberty. Psychogenic alopecia is thought to have a genetic basis because a) it appears to be a displaced grooming behavior which is hard-wired, and b) the condition is seen predominantly, but not exclusively, in purebred cats of oriental breeding and is usually associated with cats with anxious temperaments.

Feline Hyperesthesia:

Feline hyperesthesia is a complicated behavioral condition with some features that appear compulsive and others that appear frankly neurological. It is characterized by compulsive self-directed grooming/aggression, and affected cats episodically become abnormally sensitive

to perceptual input. In some cases, the condition may progress to generalized seizures. Because of the overlap between symptoms, it is thought to possibly be a form of partial seizures with compulsive components. Alternatively, one group of scientists believes the condition is primarily medical. They identified intramuscular inclusion bodies in the epaxial muscles of five affected cats and suggested that feline hyperesthesia syndrome may result from a myopathy similar to inclusion body myositis in humans.

Symptoms characteristic of feline hyperesthesia include dilation of pupils, excessive skin rippling, and frenetic self-directed grooming which may result in hair loss. Grooming may be so intense it may manifest as self-directed aggression often focused on the tail, flank, or pelvis. Aggression may sometimes be explosive and directed at people. Affected cats may emit excessive and unusual vocalizations and appear to hallucinate ("act afraid of their tail") and run away. They may appear "manic" (excited look, frantic running, jumping) and are frequently extremely sensitive to touch. Sometimes aggressive bouts are preceded by attention-seeking and enhanced affection to people. Affected cats are often anxious and restless, constantly wandering and pacing.

There is an apparent sensitivity to touch (episodes may be induced by stroking along the spine), which can trigger attacks and accounts for the name of this syndrome. Feline hyperesthesia is usually associated with heightened affect and aggression. Attacks appear to be more frequent in the evening or early morning. Aggression appears spontaneously and for no obvious reason, and the bouts can end as quickly as they appear. Following an episode, the cat often looks confused. The behavioral manifestation varies between cats and milder forms of feline hyperesthesia may be confused with psychogenic alopecia because of the common symptoms of excessive grooming that may result in hair loss.

The onset usually occurs in young to middle age cats between one to five years of age. The signs may last a few seconds to a few minutes and may vary in incidence from month to month. Episodes may occur every few days or almost constantly all day. Medical rule-outs include fleabite dermatitis, food allergy, intervertebral disc disease, vertebral trauma, infection, toxins, myopathy, or neoplasia.

Treatment for Feline Compulsive Behavior:

1.) Eliminate or reduce exposure to stressors or eliciting triggers: The first line of attack for treating anxiety-based disorders is to remove or reduce the source of conflict or anxiety. If this is not possible, then counter-conditioning and systematic desensitization techniques are the treatment of choice. Common eliciting triggers for feline compulsive behaviors are:

- Separation anxiety (owner's absence, loss of companion animal)
- New animal or person in household
- New environment

- Restricted access to outdoors
- Inadequate social or environmental stimulation
- Seeing cats outside a window
- Resolved medical condition (tail injury)
- Stroking or petting cat on back
- Loud or high-pitched noises

If the cat sucks on fabric, restrict its access by picking up clothing and stuffed toys and preventing it from going into rooms where it may suck on bedspreads or curtains. If the cat chews specific items, make these items aversive by coating them with bitter tasting substances. Remember to provide acceptable alternative items for play and chewing and place them in the area where the cat normally would seek fabric. If the cat suffers from feline hyperesthesia, advise the owners to avoid stroking their cat along its back as this can trigger attacks.

2.) Environmental enrichment to distract cat from compulsive behavior:

<u>Climbing frames</u>
Many cats enjoy climbing frames that make their environment more three-dimensional and allow them to express their natural tendency to climb trees.

<u>Bird feeders, fish tanks</u>
Placing a bird feeder near a window where the cat can observe the birds may help keep it entertained. Some cats will even watch bird videos. Fish tanks are also entertaining for cats, but just be sure to place a cover securely on top of the tank to protect the fish.

<u>Prey facsimiles</u>
Toys attached to strings, feather wands, and fishing pole toys stimulate predatory behavior. Daily rotation of toys is recommended to keep the cat mentally stimulated.

<u>Non-toxic grasses</u>
Some cats respond well to fresh catnip or cat grass grown especially for them. Along the same theme, some cats also enjoy lettuce or green beans. Other cats can be redirected onto pieces of thin rawhide coated lightly with fish oil or cheese spread. Owners should offer the rawhide chews only when they will be directly supervising their cat.

<u>Novel feeding opportunities</u>
Have several different feeding stations so the cat will have to search for its food. Some cats respond very well to “food puzzles” that they must bat around in order to obtain food. Food puzzles can be purchased in pet supply stores or crafted at home by taking an empty toilet

paper roll and punching a number of holes in the tube. Make the holes large enough to release the kibble. Fill the tube with kibble and securely tape the ends to contain the food. The owner may need to show the cat how to roll the tube in order to obtain food. Make several food puzzles, fill with the cat's daily meal, and distribute them around the house. With this technique, the cat will have to hunt for its food. The goal is to keep the cat occupied and mentally stimulated for much of its active time.

3.) *Exercise*: Daily aerobic exercise helps decrease arousal. We recommend that the owner spend 10-15 minutes twice a day engaged in aerobic, interactive play with their cat. One way to accomplish this is to attach treats or furry toys to string and play "predator" games with the cat. Some cats prefer feather wands and will perform some amazing acrobatics while they try to catch their "avian prey". Try several different types of toys and rotate them regularly so the cat does not tire of them.

4.) *Diet*: Prolonging feeding behavior can be helpful. For example, feeding a high fiber dry food ad-lib may help redirect the cat from sucking on fabric or over-grooming to eating. Putting large rocks in the food bowl can increase the difficulty of obtaining food and prolong the foraging effort. As previously mentioned, food puzzles are a great way to increase a cat's activity level and prolong feeding.

5.) *Predictable schedule*: Having a set routine helps calm many cats. Regularly scheduled times for feeding, playtime, and attention are recommended.

6.) R*estraint and punishment*: Generally, treatment of over-grooming conditions by physical restraint (Elizabethan collars) is **not** recommended. Although it may prevent the cat from injuring itself, it does nothing to address the underlying anxiety issues that maintain the behavior. The cat should never be punished for any anxiety-based behavioral condition since punishment may actually contribute to the underlying conflict and increase the cat's anxiety.

7.) *Pharmacological treatment*: Pharmacological treatment for cats with compulsive disorders is similar to that described for dogs and will be discussed later in detail in Dr. Dodman's Psychopharmacology lecture.

Although we cannot always completely eliminate compulsive behavior, the treatment program outlined above for both dogs and cats is effective in reducing the incidence of compulsive behavior. To be effective, all phases of the program must be followed simultaneously and consistently. It is often helpful to have the owners keep a daily diary of their pet's behavior. This helps them be more accurate in assessing the animal's improvement and may help increase owner compliance. In addition, it will make your job easier in terms of having accurate information regarding which aspects of treatment are effective and which are not beneficial for each individual case. In difficult cases, weekly follow-up calls may also improve owner compliance and provide emotional support.