Introduction
Aggression can be a threat, challenge or attack that is directed towards one or more individuals. Aggression may be normal or abnormal depending on the context in which it occurs. Not all fights end in an abscess so recognising the many signs of aggression is important if the cat’s stress and welfare is to be improved.

There are many different types of aggression so an accurate diagnosis is essential in determining and developing an appropriate treatment plan.

Medical conditions can contribute to aggression, therefore a complete physical examination and other diagnostic tests are needed to rule out any organ dysfunction.

Overview
Aggression is usually the most serious and dangerous behaviour problem that pet owners may need to deal with. Owners with animals that present with aggression need to be aware of the risks involved in keeping aggressive animals and their legal liabilities.

An accurate diagnosis should be made and the *chances of safe and effective management* assessed so that the owner has realistic expectations of what can be achieved. Careful history taking and physical examination is essential in making a diagnosis. A complete description of physical location, body posture, vocal and physical signals, and the behaviour sequences are important data.

Using a questionnaire, which is sent out to the owner and filled in before the consultation, can be useful. Specific questions about the problem behaviour(s) can then be asked during the consultation. This allows evaluation of the environment, social interactions, and behaviour of the cat. Only then can the possible cause(s), prognosis and treatment (management) protocols be determined.

The more detailed the information that is provided, the more specific recommendations that can be made. The process of evaluating this history in the context of other clinical information about the cat may take a substantial amount of time. However advice for keeping the cats and the owner safe is essential and can be given in a short period of time.

Aggression
Aggression is a non-specific sign. It may be passive (covert) or active (overt) and it is important to recognise that several different types of aggression may occur concurrently. Aggression between cats can occur between members of the same household or between other cats in the neighbourhood thus understanding normal feline behaviour and social systems is important if scientific, sensible and practical advice is to be given.
The signs of aggression may be visual (eg changes in body posture, piloerection), auditory (eg growling, hissing), olfactory (eg spraying, scratching) and may involve use of teeth and claws.

Many categories of aggression are recognised but the classification varies between authors and countries. Aggression may be classified by its target or by its presumed function.

Many medical conditions such as toxoplasmosis, ischaemic vascular problems, hepatoencephalopathy, encephalitis, meningoima, lead poisoning, arthritis, sensory (hearing and / or sight) deficits, hypothyroidism, hyperthyroidism, epilepsy, feline lower urinary tract disease, feline immunodeficiency virus, and rabies have been associated with aggression, any source of pain as has the use of medications such as anaesthetic agents and corticosteroids.

Once medical causes have been assessed some of the underlying causes for aggression between cats within the same household include fear, lack of socialisation, inappropriate introduction of a new cat, overcrowding (i.e. not enough vertical or horizontal space, too few resources, etc.) redirection, play and predation.

Some of the underlying causes for aggression between cats outside the household include fear, lack of socialisation, introduction of a new cat in the territory, hormonal (entire males/ females) and redirection.

Only some of these possibilities will be discussed in this paper.

**Fear aggression**

**Clinical signs**
The aggression may be a combination of offence and defence. The fearful cat generally will initially attempt to avoid the stimulus if that is an option and many warning signals are given. Fearful cats will typically hiss, spit, growl, piloerect, flatten ears against the head and show a low or crouched body position. Pupillary dilation is common. It may try to flee or attack, depending on the circumstances. Aggression is usually the last resort but it is often violent and over time may become learnt. Spraying may also occur and many owners do not perceive that spraying may be a sign of anxiety as well as a sign of "aggression".

**Underlying causes**
Genetically two types of cat personality are recognised: timid and fearful cats or confident, friendly cats, and this may account for some fearful behaviour. Inadequate or lack of socialisation prior to 9-12 weeks of age may also contribute to the cat’s responses.

Cats can learn to be fearful of certain situations, especially if they have had an unpleasant experience with no opportunity to escape.

**Treatment**
Depending of the severity of the problem the cat may need no treatment or may need behaviour modification, such as desensitisation and counter-conditioning, in combination with psychopharmacological intervention in severe or long standing cases.

Behaviour modification involves desensitisation and counter-conditioning by slowly introducing the cat to the fearful situation in a gradual, controlled sequence. Firstly, the cat is offered a tasty treat such as vegemite, chicken, or dehydrated liver. Then, while
the cat is eating, the fearful stimulus (other cat) is gradually introduced at a distance. The initial distance should be great enough not to cause any fearful response from the cat. Also remember that many cats will not eat in the presence of another cat so this needs to be assessed as well.

This gradual approach may vary from days to months depending on the severity of the problem. The cat should not be forced into the fearful situation as that will exacerbate the fear. Attaching several bells around the cat’s collar so that the victim has warning signal of the other cat’s presence has proved to be helpful in some cases.

Anxiolytic medication may also be needed. Tricyclic antidepressants, selective serotonin re-uptake inhibitors, azaperones or benzodiazepines may be necessary. The cat may require medication for a prolonged period (up to 9 - 12 months). If an attempt is made to wean off medication it should be slow and some cats may need life long treatment. Blood biochemistry should be done prior to medication. The synthetic pheromone, Feliway®, may also be beneficial.

Punishment will aggravate the situation and should be avoided. It may increase the anxiety and impede learning.

**Intermale aggression**

**Clinical signs**
In male - male aggression the cat flattens its ears, howls, hisses, piloerects and uses both the teeth and claws in fights. The signs may be active (threatening,) or passive (blocking access).

**Underlying causes**
It usually starts in entire males at around 2- 4 years of age when they reach social maturity. In some cases it may be normal male - male aggression associated with mating. It increases during the breeding season and with overcrowding. In neutered cats it tends to appear later and it may be associated with social role (status).

**Treatment**
Prepubertal and post pubertal castration appears to reduce or stop the frequency of fights in about 90% of cases between entire males.

Treatment may involve changing the social environment. Cats in the same household should be separated initially so that no visual contact is possible and reintroducing slowly as described for redirected aggression. It is important not to try to introduce them too fast, or too soon. In some cases permanent separation is necessary.

Anxiolytic medication may also be needed to treat one or both cats to alter the neurochemical environment. Blood biochemistry analysis should be done prior to medication to determine a baseline especially for liver and kidney parameters and should be re-checked every 6-12 months depending on the age and general health status of the cat. The cats may require medication for a prolonged period-up to 9- 12 months and then may be slowly weaned off.

**Play aggression**

**Clinical signs**
The cat may stalk, chase, pounce and lay in wait but it rarely vocalises. It may involve biting as well as scratching. It is sometimes difficult to recognise play aggression as some cats play more roughly than others and do not retract their claws when they swat.

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Proceedings of the ASAV, SCGV and AVBIG 2018 Conference, Melbourne
Seksel, K – Why cats fight? Aggression issues between cats in the same household and other outside cats
**Underlying causes**
Targets are usually moving objects or people and may be another cat, especially an older one, in the household. Young cats, especially those that are orphaned, hand raised or weaned early, are more likely to show this type of aggression and in many cases it may be normal behaviour.

**Treatment options**
The aim of the treatment is to redirect the play behaviour onto more suitable objects rather than trying to actually stop the behaviour completely. One way of achieving this is to provide the cat with appropriate toys, for example any toy on a wand or rod, cat dancers™, cat wire toys, or cat tracks™ on which to pounce and direct these behaviours. However, the toys need to be changed at regular intervals, even daily, for the cat to maintain interest. Additionally, the cat may first need to be taught how to play, and then encouraged to play with toys.

Punishment, such as smacking, may actually encourage the behaviour and is generally unhelpful and may lead to other problems, such as fear aggression or redirected aggression.

A regular routine that involves interactive play time involving toys 2-3 times daily for 5 minutes is important as it may help provide a natural outlet for the behaviour.

Placing several bells on the cat’s collar at varying intervals has been advocated so that the victim has warning signal of the cat’s presence.

**Redirected aggression**

**Clinical signs**
Redirected aggression occurs when the original target of the aggression is not accessible and the cat now directs its aggression towards an unrelated target, a person or another cat, that enters the area soon after.

**Underlying causes**
The eliciting factors of the aggression are different in the initial and subsequent episodes. The first episode is triggered by a stimulus that the cat is thwarted in its attempts to respond to and often it is missed by the owner. The cat is now highly aroused and directs its attention onto the next thing it sees. For example, a cat sees another cat through the window, but is thwarted in its attempts to reach it. Another cat in the household then enters the room and the cat redirects the aggression to the second cat.

In the second, and subsequent episodes, the initial stimulus no longer has to be present to elicit the aggression, just the target of the first attack.

Commonly, the behaviour of the target also changes and this then results in a prolonged conflict, with the second cat now acting warily, running away, and showing avoidance behaviour, whenever the first cat enters the room or approaches.

**Treatment**
The cat should be left alone until it is calm and no attempt should be made to try to calm or reassure it. If another cat is involved, then the cats should initially be separated regardless of whether it is the victim or the instigator of the aggression. Treatment then involves slowly reintroducing the cats to each other, (the same way a new cat is introduced into the household).
They should be placed in separate rooms so that they can hear and smell each other, but no visual contact occurs. The cats should be rotated around all the rooms until they have left their scent in all the rooms. While the cats are separated a regular routine should be established with each cat so that certain events such as feeding and / or playing occur at a set time each day. Ideally the cats are fed 5-6 small meals each day. The aim is for them to have a positive association with each other. This essentially means that “good” things such as play or feeding only happen in the presence of the other cat.

The cats are then slowly reintroduced. Initially they are only in the same room during meal times. They are placed in cages at opposite ends of the room and are fed at this time. This should create a positive association with food and the presence of the other cat. If no hissing or spitting occurs and the cats eat the food, the cages are gradually brought closer and closer to each other over a period of days and meals. This may take several weeks or even months.

Then one cat at a time is allowed out of its cage to explore and if no aggression occurs then both are allowed to interact under supervision. The re-introduction needs to be very slow.

In some cases anxiolytic medication may also be needed to treat one or both cats to help decrease the reactivity. Blood biochemistry analysis should be done prior to medication to determine a baseline especially for liver and kidney parameters. Tricyclic antidepressants such as amitriptyline and clomipramine or selective serotonin re-uptake inhibitors such as fluoxetine may be useful for the aggressor. Benzodiazepines, such as diazepam or azaperones such as buspirone may be necessary for the victim. The owners should be informed that the cats may require medication for a prolonged period, up to 9 - 12 months and then should be slowly weaned off.

Feliway® diffuser plugged into the room can also be beneficial to decrease anxiety.

**Territorial aggression**

**Clinical signs**
The cat may patrol its territory and it can mark it by rubbing and / or spraying to maintain social distance. The cat is aggressive to another cat that approaches or enters its territory and it may attack.

**Underlying causes**
The behaviour may be more marked in entire toms in the breeding season. Unfamiliar cats are less well tolerated than familiar or neighbouring cats. The aggression decreases with increased distance away from the territory.

**Treatment**
If the aggression is directed towards another cat within the home they may need to be separated and reintroduced as described above. Putting several bells on the cat’s collar at varying intervals helps so that the victim has warning signal of the cat’s presence. Anxiolytic medication may also be needed to treat the cat.

No physical punishment should be used as it will exacerbate the problem.

**Conclusion**
There are many reasons why cats within the household as well as unfamiliar cats may “fight”. Not all fights end in an abscess so recognising the many signs of aggression is important is the cat’s stress and welfare is to be improved.
**References and further reading**


