

PUPPY BEHAVIOR AND EARLY TRAINING

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It is well accepted that events that occur during development can affect later behavior. Having a good understanding of the social and emotional development of puppies can provide veterinary health care professionals with information on the prevention and treatment of behavior problems in puppies and dogs.

In the United States the welfare implications of puppy development and handling are not often addressed. However, others have articulated five freedoms as necessary to avoid welfare concerns in farm animals and these can be applied to companion animals as well. These include:

freedom from hunger and malnutrition, freedom from thermal or physical distress, freedom from disease and injury, freedom to express most normal behaviors and freedom from fear and stress¹.

Early research by John Paul Scott and John Fuller in their Bar Harbour Maine facility established stages or periods of development in dogs². They identified 4 periods of development important for the dog. These are the neonatal period, the transitional period, the socialization period and the juvenile period. Additional developmental stages include the prenatal period and adulthood/social maturity. When we discuss the development of puppies one needs to consider the interaction between the genes and environment. A newborn German Shepherd puppy has a brain volume of 8 cm³ and all the brain cells it ever is going to have³. By 8 weeks the brain has grown to 80 cm³ and 120 cm³ at 16 weeks when it is nearly adult size³. All that growth has come from increased connections, not new cells, which means that interactions and learning have provided the impetus for that growth.

In recent years evidence has come to light in several species including the human and the rat that prenatal influences can have effects on later behavior. Stressful experiences during pregnancy can result in offspring that are more emotional and reactive possibly due to the effects of maternal corticosteroid hormones⁴. Other studies have looked at the effect of androgens on female offspring with proximity to male littermates. Studies in rats and mice have implicated uterine positioning in androgenization of female rats and effects on subsequent behaviors. At the present time only anecdotal evidence hints at the same association in dogs. While nothing can be done to influence or change fetal position, providing the bitch with good nutrition and stable environment may benefit puppies. Naturally, providing environments where stress is minimized and nutrition optimized conform to good welfare principles.

The neonatal period is the time from birth to two weeks when puppies are relatively immobile and dependent on the bitch. The bitch provides the stimulus for both nursing and elimination at this stage. Puppies at this stage are unable to see, hear with limited motor ability. Yet, short periods of daily handling and exposure to some stimuli can be beneficial to stimulate earlier eye opening, weight gain, hair growth and motor development⁴. Some have suggested that these effects are due to adaptive changes in the pituitary-adrenocortical system that may also allow the animal to better cope with stressful situations later in life. No controlled studies however have been done to validate these claims, or to suggest that handling has adverse effects. Therefore, suggesting moderate handling and stimulation of young puppies is probably prudent and good welfare.

The transitional period is one of profound change for the puppy. It begins with the eye opening and ends with the opening of the ear canals and lasts approximately one week. It is during this time that the eyes and ears open and the puppy begins to move about. During this stage the puppy no longer needs to be stimulated by the bitch for elimination to occur. Although puppies show increased learning abilities at this stage on both classical and operant learning tasks they do not reach adult level of learning and responses until about 5 weeks of age⁴. Beginning social interactions appear with littermates including play fighting and tail wagging⁴. Good welfare practice would include the ability for puppies to interact

with littermates, the dam and other species as well as freedom from stress, hunger and fear.

The socialization period has been detailed in both popular and scientific literature as an extremely important time for the emotional and social development of puppies. The socialization period is thought to occur from 2.5-13 weeks of age in puppies. Yet one could certainly argue that there is variability in that time frame due to genetics and/or environment. Interestingly the primary socialization period seems to take place regardless of rewards or punishment⁴. However the process can be accelerated by extremely emotionally arousing stimuli both negative and positive. This developmental stage is important in many ways. It is the time when puppies are most vulnerable to forming non-conspecific attachments; i.e. can bond with other species including humans. It is also the time when puppies identify future social partners and to which species it belongs. Some have suggested that the peak of sensitivity to the formation of social bonds be between 6-8 weeks. In addition this is the time that the puppy can learn about the environment and become introduced to new and novel things. Social play becomes important and puppies learn how to interact not only with littermates, but adult animals of their species. There is also some anecdotal evidence that although young dogs may be well socialized at three months, without continued social reinforcement these same dogs may experience a fearful stage at 6-8 months and regress. Good welfare would suggest that continued exposure to new and novel things, to people and other animals is important for the first 6-8 months of life and possibly the first year. During this time the animal not only learns to be "social" but also learns to habituate to things in the environment and experience new and novel stimuli without fear and stress. When dogs are not habituated to change at a young age, they often present as dogs unable to settle, nervous, reactive and problems for their owners.

While the socialization period is extremely important it also must be looked at within the context of the developing emotional system of the puppy. At 3-5 weeks attraction responses in puppies are very strong⁴. These begin to diminish between 5-7 weeks as fear responses begin to emerge⁴. Between 7-9 weeks the fear response may be strong and in some cases begin to overwhelm the attraction response while for other puppies the social motivation to make contact may overcome this wariness. By twelve weeks puppies without good early exposure to new and novel stimuli may show strong fear responses that may create problems⁴. Therefore, early socialization and habituation are important for well-adjusted puppies. Welfare implications include creating good social environments, keeping veterinary visits stress free and avoiding the formation of fearful responses to both the environment and people.

The juvenile period is thought to occur from the end of the primary socialization period until sexual maturity. During this time the puppy is still refining both learning and social skills. As neuromuscular control increases the animal shows enhanced motor skills. While juvenile animals can learn well, they are distractible and often hard to keep on task. Many people now believe that while sexual maturity occurs relatively young in dogs, social maturity takes some time. It is at the onset of social maturity that dogs will begin to display mature, adult social behaviors. This time is thought to vary between breeds and occur anywhere from 12-36 months of age. From a welfare standpoint this means that young dogs are continually learning about their environment and the individuals in it. This may be the time when young dogs are learning about their social relationships within the environment in which they live. The inability of owners to understand this developmental stage may lead to pet relinquishment⁵. It is up to pet owner and veterinarians to help guide this development in the appropriate direction.

Many behaviors that are problems for owners are in actuality normal puppy behaviors. These behaviors include chewing, mouthing of the hands and clothing, early aggression, and digging, jumping and excessive vocalization. Other issues to address include crate training, home control and early obedience training. It is speculated that in the United States, 60% of the animals that end up in humane shelters may be there because of behavioral problems, and many of those are dogs given up within the first year or two of ownership⁶. Veterinarians need to integrate behavioral information

into their puppy visits to try and prevent pet relinquishment to shelters. Not only would this offer a great service to our clients but would also be a service to us by increasing pet retention.

What must be emphasized to pet owners is that puppy training is really a two way street. In order for the puppy to learn the correct behavior, the owner needs to know what that is, how to teach it to the puppy and what is normal puppy behavior. Puppies naturally engage in many behaviors that are normal and even cute and fun when they are small. These same behaviors become problems when the puppy is older. Early puppy training involves teaching canine manners and how to appropriately behave in the human household. The most important lesson to teach new puppy owners is that they need to teach the behaviors that they want their puppy to perform. This is a more productive method than disciplining what they do not like. Puppies do not know correct behavior in the human household. It is unreasonable to expect good behavior unless it is taught. In conjunction with the time veterinarians and staff spend instructing owners how to housebreak their puppies, equal amounts of time, if not more should be spent on instructions for teaching manners and proper behaviors to puppies.

Early training and owner leadership

An area where you can really influence your new puppy owners is on the subject of early training. Puppies are learning all the time; it is not necessary to wait until they are 6 months old to begin training them. Puppies are easily motivated with small amounts of food treats. Utilizing food reward training, puppies can be easily taught subordinate postures such as sit, down and stay. This is one method of making owners "leaders" for their dogs. Puppies have very short attention spans so training sessions should be short, but frequent. Training sessions should focus on techniques using positive reinforcement usually this is food. In puppies, food rewards can motivate and aid in learning. For example you can easily teach a puppy to sit using food treats and no physical manipulations. By holding a food treat above and slightly behind the puppy's nose while saying, "sit" a puppy will end up in a sit. As the puppy raises its head to visualize the food, the hindquarters will have to descend. This can be demonstrated in the office for your clients enabling you to send them home with a concrete suggestion to improve behavior. The same technique of food inducement can be used to teach the puppy to lie down. The food is held on the floor slightly in front of the dog and slowly pulled out and the puppy will usually go down, or alternately, push the food between the legs and the puppy will slide into the down position.

With these tools, the owner can begin training and soon progress to asking the puppy to sit for food, to go out and be petted. This allows the owner to be in "control" and be the "leader". Once the puppy knows the task, the food rewards must phase out and given intermittently. Behaviors that are rewarded intermittently are more difficult to eliminate because the dog never knows if this is the time when there will be a reward. Therefore, when teaching tasks with food as reinforcement, it is extremely important for owners to know how to phase out the food and still maintain the behavior. These lessons can be used to teach the puppy to sit or lie down in a specific spot during meals or any time they need the puppy to be quiet. You must remember to tell the owners that since attention spans are short in puppies, they may need to tell the puppy to do things over and over and they may only sit quiet for short periods of time, but with continued reinforcement, they will do so for longer and longer periods. By getting control of a puppy's behavior, and controlling resources, an owner can become the "leader".

Socialization

Early socialization is extremely important and sets the stage for a well-adjusted pet later on. The best time to socialize puppies is between 7-16 weeks. Owners should be encouraged to provide early exposure to new and novel things for the socialization of their new puppy. This exposure can help minimize fear reactions in later life. A good rule of thumb is five new things a week. Puppies should be exposed to adults, children, bicycles, service people, vans, loud noises, large boxes, stairs, garbage cans etc. The list is endless. It is extremely important that the owners continue to expose the puppy to new things throughout the first year of life, not just the first few months. Dr. Wayne Hunthausen has a great idea to help

owners socialize their puppies. He gives all new puppy owners a small bag of biscuits that he labels "socialization biscuits". The rules on the bag tell the owner that the puppy can have all the biscuits, but that non-family members must give them to the puppy. This encourages the family to introduce the puppy to new people and have the puppy be rewarded for the interaction with a bit of food.

Body handling

All clients should be counseled to teach their dogs to enjoy and allow handling of their body. When puppies are young, they can be taught to allow all parts of their body to be examined. Veterinarians and/or staff can start owners on the correct track by showing them in the exam room what they should do and reward the puppy with food rewards for allowing handling during puppy exams. During initial puppy exams food rewards should be frequent to reinforce pleasant associations with the veterinary visit. Early handling can make later medical treatments easier to administer.

Chewing

This is a normal puppy behavior and it is important for owners to realize this. Besides teething, puppies will use chewing as a means of exploring their environment. Therefore it is necessary that acceptable outlets for this behavior be provided. Puppies will chew on household objects as well as owner's hands and clothing. Redirecting the behavior is more effective than just discipline alone. The puppy should be provided with many permissible chew items. When the puppy begins to chew in the incorrect spot, the puppy should be told "no" and given an acceptable item to chew instead. Acceptable chew items include Kong® toys stuffed with food, rope toys enhanced with cooking spray and garlic salt and other chew toys that have been made attractive using food.

Chewing and play biting on people

Some puppies will persistently mouth and chew on owner body parts and clothing. For many owners this chewing is difficult to stop. Often this behavior is exhibited in the exam room either to veterinarians or the owner. Many times this behavior will escalate and become extremely problematic. Owners should be informed of the importance of chewing and biting and the significance of oral exploration. Puppies are trying to get feedback about the environment and their behavior through chewing. Puppies chew on each other constantly in play. One lesson learned during play is how much pressure from the jaws is needed to cause pain. When puppy "A" chews on puppy "B" and bites too hard, puppy "B" will yelp. Puppy "A" usually stops and has then learned that his behavior caused pain. When puppies chew on people, often no appropriate feedback is given. Owners should let the puppy know that the chewing caused pain and giving out a "yelp". This explanation will help owners see that this is a species typical behavior and how they can correct it. When a puppy chews on their hands, they need to loudly "yip" or yell "ouch" so that the puppy realizes that it must inhibit its jaws in order not to hurt human skin. This is something that every family member can do to help stop the "play" biting. Through this type of feedback puppies learn "bite inhibition". Bite inhibition is an important component in bite and injury prevention. When a dog exercises bite inhibition, it controls the force of their bite.

Housetraining

One of the processes that take place during house training is the development of surface and location preferences for elimination. Puppies begin to learn these early in life, around 7.5-8.5 weeks of age. A dog therefore learns where to go and what to go on. A puppy that has been paper-trained may always prefer to eliminate on paper, a crate-trained puppy that has eliminated frequently in his crate may continue to do so. For those reasons, it is important to have owners take puppies out the same way, to the same locations and to the place they want the puppy to eliminate as an adult. Good supervision is essential the first few weeks so that the owner can enforce the rules. It is also helpful for owners to use a "key phrase" that will signal the puppy to eliminate. In addition, owners should keep trips outside associated with elimination and keep playtime separate. Once house-training is established, owners should be encouraged to also teach their pet to eliminate on leash and in different locations. Rewards for appropriate elimination

must occur immediately after the pet eliminates and therefore the owner must go outside with the pet. The reward is not for the act of elimination, but for eliminating in the appropriate location at the appropriate time.

Punishment can be used in house-training but the timing is of utmost importance. Unless a dog is rewarded or punished within 10 seconds or less, they do not associate it with the act the owner is trying to punish. They will know that the owner is mad or happy, but not why. So it is important for the owner to only punish inappropriate urination or defecation immediately as the dog is eliminating, not 5 minutes to 2 hours or more later. Punishment should be done with loud noises, never with physical reprimands, which can result in owner avoidance, fear and/or anxiety.

Crate training

Crate training is another area where puppy owners often have many questions. When used properly, a crate can be a helpful tool in raising a puppy. A crate should always be used in a positive manner, not as punishment. It can be used as a house-training aid for persons who are gone all day and it can be used to confine a puppy when no supervision is possible. However, a crate should not be overused. It can lead to hyperactivity and attention getting behaviors, which can create behavioral problems. Rather than leave a puppy continuously in a crate, owners should be encouraged to keep the puppy with them while they are home using a leash for control. A good rule of thumb is that a puppy can stay in a crate about one additional hour beyond how old they are in months. For very young puppies it is essential that they get outside to eliminate and exercise after a few hours and not remain in their crates all day. If forced to remain in their crates beyond the time they can reasonably be expected to hold urine and stool, they may be forced to eliminate in their crate. This can then result in a dog that learns to eliminate indoors and may make housetraining difficult.

Food and toy handling

An area where owners have many misconceptions about behavior is regarding eating and the food bowl. Many owners believe that food guarding is an acceptable behavior. Although we know that dogs in the wild will guard and protect their food, there is no reason that a dog in the home environment needs to do so. Owners should be encouraged to be around puppies while they eat, handle their food so that they get used to having their food handled and will not react aggressively when someone unknowingly approaches their food bowl. Have owners of new puppies feed their dogs some of their ration by hand, have them feed small amounts, pick up the bowl and add more. Have them pet the puppy while it eats and gradually increase the intensity and frequency of body contact while they eat. This is especially important for families that have children or plan to have children with the dog around. This will desensitize the dog to activity around the food bowl and help guard against aggression in that area. This program should be done frequently throughout the first year of the puppy's life. Owners should also teach their puppy to allow them to take toys and objects from them. Make it a pleasant experience without yelling and discipline and give the toys back so that the puppy learns not to be afraid when the owner approaches.

By spending extra time with new puppy owners, you can help start them off on a life long fulfilling pet-owner relationship.

References

1. Fraser AF, Broom DM, Farm Animal Behaviour and Welfare. Bailliere Tindall, London, 1990. Pp 264
2. Scon JP, Fuller J. Genetics and Social Behavior of the Dog. University of Chicago Press. Chicago, 1965. pp 84-117.
3. Serpell J, Coppinger R, Fine AH "The Welfare of Assistance and therapy Animals: An Ethical Comment" In: Handbook on Animal Assisted Therapy. Academic Press, 2000 p 415-431
4. Serpell J, Jogoe JA "Early Experience and development of Behaviour" In The Domestic Dog Ed. Serpell. Cambridge University Press. GB. 1995 pp 79-102.
5. Shepherd, K. Development of behaviour, social behavior and communication in dogs In: BSAVA Manual of Canine and Feline Behavioural Medicine Eds. Horwitz, Mills and Heath, BSAVA, Gloucester, UK, 2001. pp. 8-20.
6. Patronek GJ, Glickman LT, Beck AM et al "Risk factors for relinquishment of dogs to an animal shelter" JAVMA, 209:3 1996 p 572-581