



Breeders' Briefcase

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Behavioral Development of Puppies and Young Dogs

Many breeders and puppy owners do not recognize the VITAL importance of proper puppy raising in the first months and the first year of life. Proper experiences or socialization in the first several months essentially "make or break" that dog's ultimate ability to become a fully functioning adult. (Please look for an upcoming article on puppy socialization.) Research has shown that 35% of a dog's ultimate temperament is produced by genetic factors while environment contributes 65%. Developmentally, a puppy has to actually learn to recognize that they are a dog. This developmental need is why they can be raised to interact with humans so effectively. Exposure to people, other dogs and stimulating environment during sensitive periods of development actually results in the production of the neurological pathways in the brain. So---- environment actually plays a role in how the brain and nervous system is WIRED!!! Although there are many important life stages, the key sensitive period in a puppy's development is generally accepted to be from 3 weeks to 3 months of age. A puppy raised in an sensory deprived environment during this period without appropriate interaction with humans, dogs and other species will almost certainly have deficits for the rest of their life.

With an understanding of the life stages that a puppy goes through and appropriate interactions with their

environment, a new owner, trainer or breeder can make the best of a puppy's potential. Environment includes socialization, handling, training, attention (or lack of it), nutrition etc. Socialization is vital. It should include positive exposures to humans of all shapes and sizes, dogs of all shapes and sizes, and other species (as needed) in many places and in different situations. Proper raising coupled with good breeding can result in stable and astounding dogs! For an excellent practical review go to Canine Development and Socialization by Dr. Robert K Anderson, DVM, Veterinary Behaviorist.

Research has well established that puppies have certain sensitive periods of behavioral development. These exact stages and the definitions overlap. If you are a "scientist" the article [Sensory, Emotional and Social Development of the Young Dog](#) by Dr. Joel Dehasse, DVM is an excellent reference and review of some of the science behind these concepts. Clicking on the title will take you directly to the website and if you click on the authors name this will take you to his website and much more of his valuable work. Much of the information below is information learned from Dr. Dahasse's article coupled with the compilation of the valuable work of other researchers referenced below and published widely in the known stages of canine development.

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There is some variation in various references as to the exact separation of these developmental stages. Research confirms that there are most likely breed specific variations although obviously research has not been conducted on each and every breed to delineate these. No doubt there are variations between individual dogs as to exactly when these stages occur (due in part to the type of environment that they are exposed to.) The following is a rough guideline of these.

Prenatal Period

Puppies experience touch before birth. Puppies whose mother's uterus was petted before birth are more tolerant of touching than puppies whose mother's were not petted.

Neonatal Period (0-2 weeks)

This period is from birth to when the puppy opens its eyes. "Early neurological stimulation" gives dogs a psychological and physiological advantage. During this period the puppies and the mother are best kept in a low stress, controlled environment with specific exposure to defined stressors. In Developing High Achievers (Early Neurological Stimulation) Carmen L Battaglia Ph.D. discusses these concepts fully including visuals of the stimulation techniques recommended at this stage.

Transitional Period (2-3 weeks)

This is a period of rapid physical change. This period begins when the eyes open and ends when the ear canals open (oh my gosh---they can hear!---Indicated by the fact that they suddenly startle in response to sound.) The puppies no longer need their mother for all vital biological functions and begin to move around and to interact. The first signs of fear

may be present. Research indicates that fear is most likely genetically programmed (Grandin and Deesing). During this period the puppies are best to continue to be exposed to mild stress and gentle caressing and attention. The end of this period marks the beginning of the sensitive period of a puppy's development. At the end of this period the puppies are ready to move into the center of the "action" with the interaction and stimulation of the world around them.

Identification Period (3/3 1/2

weeks-11/17 weeks or +/- 12 weeks)

A puppy does not inherently recognize that they are a dog. During this period they "imprint," figuring out who they are and who they are supposed to interact with (parents-filial imprinting, social relations-fraternal imprinting and relations-sexual imprinting) This 9 week period is the most sensitive period of canine development. At this age all of the hardwiring of the puppy's brain is going on and the experience or lack of them sets the foundation for the future of the puppy. During this period puppies need interaction with their mother, their littermates and humans best being handled by children and adults of both sexes.

Awareness Period (21-28 days/Early Identification Period)

Puppies begin to have an attraction to investigate the unfamiliar in their environment. They are ready to experience their environment (although they are still sensitive to stress.) During this period they begin play fight and begin to have the first negative interactions with their mother in early weaning. Environmental stimuli such as toys, various floor surfaces, interesting sounds and people should be available for their safe investigation. They

should also have normal interactions with their mother, littermates and their people should do lots of gentle handling.

Socialization/Domestication/ Habituation Period

The identification process is what allows dogs to so readily be domesticated. Early socialization is vital for the proper development of attachments to "other species" namely humans and most likely must continue to some degree throughout the life of the dog. People must realize that from a puppy's point of view---each "type" of human is most likely seen as a different species and therefore puppies must be exposed to all "species" of humans---man, woman, child, person with beard, person without hair etc... Habituation (the term generally gets rolled in with the concept of socialization) is the process by which puppies become accustomed to the environment and is equally important. Puppies, especially future performance dogs, show dogs and future active family companions need an environment rich in experiences of various places and activities. They need to be exposed to increasingly "complex-stimuli" as much as possible prior to 12 weeks. Two excellent articles are linked below namely the why and most importantly the HOW of puppy socialization. An important aspect of socialization pointed out in this article which often gets less attention is the importance for the puppy to be accustomed to "being alone." Many people are concerned about the puppy getting enough attention and forget to address the aspect of over attachment. If the puppy does not learn to be alone as a young dog then they run the risk of developing separation anxiety and over protectiveness in some breeds.

Puppy Socialisation and Habituation (Part 1) - Why is it necessary?

Puppy Socialisation and Habituation (Part 2) - How is it done?

Canine Socialization Period (21-49 days)

During this period interactions between puppies and mother/littermates are important. The puppy learns to accept the mother's dominance and to show her submission which is ultimately transferred to other adults. If the mother is removed from the puppies too early---the puppies may not learn this submission to adults. It is also during this period that they learn to interact with littermates establishing a pecking order through play fighting and relational imprinting through play mating behaviors. Puppies without "canine interaction" at this age will not learn important social cues for interacting with other dogs. Singleton puppies need exposure to other "peers."

Human Socialization Period (7-12 weeks)

It is believed that this period is the best age for introducing a puppy to its new home. Research shows that puppy brains are fully functioning and at this age they are ready to learn. Remaining with its littermates past 7-8 weeks is believed to hamper a puppy's emotional development and if left with their littermates they will begin to bond with their littermates instead of their owners. The separation of puppies in the litter should begin at 7 weeks (although there is some controversy about this---the point is they need stimulation and socialization by 6-7 weeks.) The puppy should begin individual socialization (domestication & habituation) to the various environments, experiences

and encounters with other species (namely humans) and research shows that these experience are best encountered with various people at their side.

Fear Imprint Period (8-12 weeks)

After the 5th week the desire to investigate begins to be replaced by a fear of the unknown. A lack of socialization during this period could result in lasting fear responses as could exposures to specific negative stimuli.

Flight Instinct Period (4-8 months)

Suddenly a puppy who always came when called bolts in the opposite direction. He has suddenly realized that he has his own free will and can. Patience and training with lots of time "on-leash", on a long line and reward for coming are the best way to work through this period.

Seniority Classification Period (12-16 weeks)

An age for trying out dominance and establishing pecking order. It is important for the owner to establish themselves as the "pack leader" at this age. The "rules" established (or not) at this age will lay the groundwork for future interactions in life. It is best to manage any issues at this age while they are relatively small then to wait until they are a large and hormonal adolescent.

Second Fear Imprint Period/Pre-puberty Sensitization Period (6-14 months)

This stage precedes puberty---and is marked by the appearance of fear in dogs that were previously not fearful (including well raised ones.) This stage is believed to be related a development of a cognitive (i.e. intellectual versus emotional) understanding of fear. Again dogs

must be socialized and taught that there is nothing to fear with firm and understanding training. It is important not to "baby" the fearful dog as this simply reinforces that their fear is a reasonable response to the situation. It is imperative that the dog's environment be controlled at this stage to protect them from psychological trauma which could have a lifelong affect.

Puberty (1-24 months)/Young Adulthood

This age is difficult in the dog with an excellent foundation who has been well socialized and trained. It is marked by a surge in aggression i.e. making a play for higher status in the pack and in territorial defense behavior. At this age they will often exhibit negative behaviors that they had previously been broken of. This is the age where the negative behaviors of many dogs that have been poorly socialized and poorly raised reaches a height that a professional trainer is called in, they are re-homed or destroyed. Although this age can be difficult in dogs that have been effectively raised---they can generally be managed by reinforcing the same firm training techniques and socialization interactions that were established at early ages. In a pack environment, dominant members will withdraw social attention. A dog that has been well trained can be repeatedly rewarded for positive behavior and for following known commands.

Maturity (8 months-3 years)

Most likely closer to 2 than one in many large breed, intelligent dogs. This stage may be again be marked by the dog becoming aggressive or assertive. If the dog has serious behavioral issues at this age---that is beyond the scope of this discussion.

The well managed and properly trained adult dog is ultimately likely to accept their position in the pack but this will likely have to be reinforced periodically. Socialization and proper training most likely has to continue though out the life of the dog but should simply be reminders of the foundations that were laid at early ages. As an adult the dog is who they are based on the cumulative effects of their experiences, their genetics and their environment. They always have the capacity for learning and developing and old dogs can be taught new tricks but these are limited or enhanced by the early framework of their experience during their development.

Additional book recommendations and references:

How to Raise A Puppy You Can Live With, by Clarice Rutherford, David H. Neil

Genetics and the Social Behavior of the Dog, by John Paul Scott & John L. Fuller
The New Knowledge of Dog Behavior, by Clarence Pfaffenberger

Behavioral Genetics and Animal Science, Temple Grandin and Mark J. Deesing

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Fox, M. W. 1972. Understanding Your Dog. Coward , McCann and Geoghegan, inc., New York.

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