

Growing Smart Puppies By Caroline Coile, PhD

Every parent wants her baby to be the smartest. Fortunes have been made from enrichment toys and programs claiming to help them achieve that goal. That's fine for parents of human babies, but what about those of canine babies who worry their little yapper may be an underachiever? How do you produce the next canine Einstein?

Stimulating Ideas

Educational toys may help, but so far, nobody's demonstrated that a toy that teaches your puppy to tie his shoe is any better than an empty plastic bottle. Besides, most puppies are quite adept at untying your shoe while it's on your foot and you're attempting to walk, even without fancy educational toys. But it's the fact that puppies have access to bottles and shoes and anything they can mouth and chase that makes the difference.

Like babies, puppies thrive in stimulating, complex environments. In a study in which puppies were placed in complex environments for the first time at 12 or 16 weeks of age, these dogs were inhibited and explored less than puppies that had been placed in increasingly complex environments at earlier ages. In another study, dogs raised without contact with the outside world until 10 months of age became hyperactive, with six times the activity of normally raised dogs, when placed in a normal environment. They learned slowly and forgot easily compared to the normally raised dogs.

It's not just overall activity, nor is it just grossly deficient environments that can affect behavior. Specific behaviors can also be influenced by early exposure. When Scott and Fuller were performing their puppy tests back in the 1960s, they routinely included a retrieving test between 8 and 10 weeks of age, and again at 32 weeks. When they subsequently quit testing at the earlier age, they found that puppies that weren't tested (and thus, weren't exposed to retrieving) until they were 32 weeks old failed miserably, with only 11% fetching. Even with training, most never retrieved satisfactorily, leading the researchers to conclude there was an optimal time to learn the concept of fetch.

The same is true of an optimal time for housetraining. Between 7 and 9 weeks of age, puppies develop their preference for their favored elimination locations and substrates. If they are allowed to eliminate indoors, or on carpet or bedding during that time, they will be far more difficult to train to go outside than if they were introduced to the outdoors and grass during that critical window.

Intelligence may even be affected by factors during the very first days of life. In mice and rats, which, like puppies, are born helpless, with eyes and ears closed, studies have shown that exposing them to mild stress (such as removing them from the nest for three minutes each day, causing slight chilling) during the first five to ten days of life results in adults that are better able to withstand stressful situations. Animals that were not stressed as infants tended to react in an all-or-nothing manner, no matter the strength of the stressor, and to become easily exhausted if exposed to prolonged stress.

In puppies, brainwave activity appears to mature at faster rates in those given early stimulation. These early-stimulated puppies also perform better in certain problem solving tests. Some years ago, the United States military dog program developed its “Bio-Sensor” program in an effort to develop better military dogs. They found that five simple stimulation exercises, when performed daily between 3 and 16 days of age (a time of rapid neurological development), yielded adults that were more resistant to stressful situations. Stimulated puppies explored more, and were less upset by difficult problems, in later tests of learning. They made fewer errors in maze detour tests and were calmer overall.

The Bio-Sensor exercises are simple, and are performed on each puppy from beginning to end before starting with the next puppy. Each exercise is performed for only 3 to 5 seconds. They are as follows:

Tactile stimulation: Hold the puppy in one hand and use a cotton swab to tickle it between the toes on any one foot.

Head up position: Using both hands, hold the puppy perpendicular to the ground so its head is directly over its tail.

Head down position: Holding the puppy in the same position as in exercise 2, gently bend the head down so the nose is pointing toward the ground.

Supine position: Place the puppy on its back in both your hands, so it’s parallel to the ground.

Thermal stimulation: Cool a damp towel in the refrigerator for five minutes, then place the pup on it, feet down.

These exercises don’t take the place of normal play and interaction, but are in addition to it. Remember, though, overly enthusiastic stimulation can be as bad as nonexistent stimulation. I’ve heard of people placing puppies in the freezer for 30 seconds, figuring if touching a chilled towel for 3 seconds was good, making a pupcicle would surely produce a superdog. Wrong.

Food for Thought

You may even be able to feed your puppy brain food. In fact, your grandmother may have been right when she said fish was brain food. Certain types of fish contain high levels of omega-3 fatty acids. In a recent study, puppies fed various levels of omega-3 fatty acids were subsequently trained to associate a symbol, either a cube or a sphere, with the correct direction to take in a T-shaped maze. Puppies whose dams were fed diets high in these fatty acids, and which were also fed them after weaning, not only had significantly higher levels of docosahexaenoic acid (DHA), a component of omega-3 fatty acids, in their red blood cell membranes, but also scored significantly better on the

maze test than did those reared on the low omega-3 fatty acid diet. Based on these results, puppy foods are now available with DHA added to them.

This same result has been reported in human infants. Children born to mothers who had taken cod liver oil during pregnancy and lactation scored higher on a mental processing test at 4 years of age compared with children whose mothers had taken corn oil. Omega-3 fatty acids have even been implicated in reducing criminal behavior. One recent study found that supplementing the diets of poor children in Mauritania with higher quality food including fish for omega-3 fatty acids reduced their criminal activity when they got older. Another recent study found that adding fatty acid supplements to the diets of adult prisoners decreased prison violence. Understandably, both studies are somewhat controversial, but if giving my dog a fish oil pill will make him come when called and quit peeing on the floor, I'm there.