

# Implications of weaning age for dog welfare

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## Introduction

Weaning is an important stage in dog development, and maximizing the welfare of dams and their offspring can promote adult dog well-being. During the weaning process, puppies begin consuming semi-solid food at around three weeks of age, and they typically are separated from their dams between six and eight weeks of age for re-homing. This coincides with a stage in puppy development that involves critical learning and has long-term implications for behavioral wellness as adults. To optimize the well-being of puppies as well as adult dogs, it is essential to consider the weaning ages and practices used as well as their relationship to developmental processes.

## The weaning process

Weaning is the gradual process of young mammals transitioning from a liquid-based milk diet to solid food. For puppies, the weaning process begins at about three weeks of age when they begin to leave the nest box and eliminate without stimulation from the dam (Lindsay, 2000). Variation in the amount of solid food and milk intake between different litters, and sometimes between puppies of the same litter, is normal (Malm and Jensen, 1996). It is also important to note that some aspects of the weaning process, such as when the dam stops producing milk, may differ by breed or breed type. Dams cease milk production between seven to 10 weeks after giving birth (Scott and Fuller, 1974). Different growth rates, metabolic and nutrient needs between breed/breed types must be considered. Toy



breeds, even after eight weeks of age, can be susceptible to hypoglycemia. Large-breed puppies undergo a rapid growth rate and are susceptible to nutrient and caloric imbalances, causing conditions such as developmental orthopedic diseases (see Lauten, 2006 for more detail). Managing the weaning process for different breeds should therefore be done carefully to ensure that all dogs receive the proper care.

During weaning, the dam may begin regurgitating food for her puppies and will make nursing more difficult by not lying on her side, moving away or pushing puppies away when they try to nurse. Other factors affecting when and how weaning occurs include whether the dam has access to an area away from her pups, how much time she spends away from them, if she regurgitates food for them, and if there is communal rearing (Malm and Jensen, 1996), which can occur when dogs are housed in compatible groups. In general, puppies are fully weaned to solid food between seven and 10 weeks of age (Scott and Fuller, 1974).

Weaning does not consist merely of transitioning puppies to solid food, however. An important component of the process involves the development of puppies' independence from their dams. It begins with brief, gradually increasing periods of separation initiated by the dams leaving their nests or whelping areas for respite from their puppies. Because weaning and separation from the mother is a complex process that can have lifelong effects, abrupt weaning or interruptions in gradual weaning can be detrimental. For example, abrupt



weaning at a specified age (e.g., six weeks) for all puppies may adversely affect those that are not as physically or psychologically ready to cease nursing entirely.

### Implications of weaning and separation age

Because weaning and separation of puppies from their dams coincide with one of the earliest and most important sensitive periods for learning, it is important that puppies are not weaned too early or abruptly. Puppies are typically separated from their dams and littermates for placement in a home between six and eight weeks of age. This may intuitively make sense because at that age, puppies are motivated to make social contact with strangers and form lasting social bonds with family members (Serpell, 1995; Fox and Stelzner, 1966). However, during this period of development, puppies are also particularly sensitive to psychological and physical disturbances, and separation from their dams, littermates, and familiar environments may result in fear, distress and impaired learning. For instance, Elliot and Scott (1961) observed more stress vocalizations (whines and yelps) in puppies separated and placed in an unfamiliar room away from their dams and littermates at six weeks of age than when tested independently at later ages even when they had some previous experience with the test room.

In addition, it is speculated that between three and 16 weeks of age, puppies may learn more about how to interact with their environments than during any other period in their lives (Lindsay, 2000). Puppies depend not just on their dams but their littermates to learn important behaviors that have lifelong implications. For example, between three to five weeks of age, puppies learn preferences for surfaces on which to eliminate and normal elimination behaviors, such as eliminating away from resting areas. They also begin to engage in social play with littermates, learning behaviors related to social hierarchies and bite inhibition. Later, such behaviors are difficult for people to teach to puppies that didn't learn during the sensitive period. Puppies separated from their dams and littermates too early often tend to bite more readily and harder than those that are separated at eight weeks of age (Lindsay, 2000; Fox and Stelzner, 1967), and they may also develop other behavioral problems as adults, such as high reactivity, anxiety, attachment-related problems, and inter-dog aggression (Lindsay, 2000; Pfaffenberger, 1963).

### Benefits to separating and weaning at older ages

Separating puppies from their dam and littermates later — at least 8 weeks of age — can allow them more time to learn from the dam and littermates and facilitate learning through observation and interaction. Important skills taught by dams at this age include responses to familiar and unfamiliar humans in different situations. Slabbert and Rasa (1997) found that puppies of nine to 12 weeks of age that were allowed to observe their dams performing narcotics searches were better narcotics detectors at six months of age than those without the benefit of such observational learning opportunities. Of course, puppies may also learn undesirable behaviors from their dams, so attention to the ongoing socialization and general behavioral well-being of dams must be ensured to optimize their ability to produce and rear behaviorally well-adjusted puppies.

Later weaning and separation ages may also yield health benefits. Improved weight gain and growth, decreased illness and mortality, and improved coat condition were found when weaning was delayed from six to 12 weeks of age (Slabbert and Rasa, 1993). No difference was found in bonding with people when two hours of daily human contact were provided beginning at 10 days of age in puppies weaned and separated from their dams at older ages. These results suggest that social bonding with people is not impaired if puppies are weaned and placed in homes at older ages, provided that some social contact with humans is ongoing during this time. Optimizing behavioral development opportunities, nutrition, and the environment can therefore promote dog welfare.

### Conclusion

Although the weaning process is a necessary period in every puppy's life, the timing and process of transitioning puppies to solid food and separating them from their dams and littermates must be carefully considered to promote optimal physical and behavioral well-being. While puppies may be able to eat solid food at relatively early ages (three to six weeks), they continue to learn behaviors, critical to their development, from dams and littermates in the sensitive period that occurs in the first nine weeks of life. Consequently, delaying complete separation of puppies from their dams and littermates until later ages (at least eight weeks) may provide

behavioral and health benefits that enable puppies to bond with and make even better companions to their new families.

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