

MODULE 6

The Neonatal Period: Birth Through Two Weeks

Learning Objectives

At the completion of this module, the breeder should be able to understand neonatal development, monitor growth and weight gain, maintain proper environmental conditions, identify common neonatal problems, and recognize the signs of fading puppy syndrome.

Understanding the Neonatal Period

The neonatal period extends from birth until approximately two weeks of age. During this time, puppies remain completely dependent upon their mother and the environment provided by the breeder.

Although puppies may appear peaceful and uncomplicated, this stage is characterized by tremendous physiological change. Organ systems continue to mature, body weight increases rapidly, and the foundations for future growth are established.

Unfortunately, this period also carries the highest risk of mortality. Careful management during these first two weeks can have a profound influence on litter survival.

Normal Neonatal Development

Newborn puppies are born blind and deaf. Their eyes remain closed, and their ear canals are sealed. Movement is limited to crawling, rooting, and nursing behaviors.

The senses most active at birth are touch, taste, and smell. These senses enable puppies to locate their mother, find nipples, and maintain contact with littermates.

During the first two weeks, puppies spend approximately ninety percent of their time sleeping. This extensive sleep is essential for normal neurological development and growth.

Although newborn puppies appear inactive, enormous developmental changes are occurring beneath the surface.

Weight Gain: The Most Important Measurement

If there is one measurement every breeder should monitor, it is weight.

Weight gain is one of the most reliable indicators of neonatal health. A puppy that is consistently gaining weight is usually thriving. Conversely, weight loss is often the earliest sign that something is wrong.

Every puppy should be weighed at least twice daily during the first week and daily thereafter. A digital scale capable of measuring grams is ideal.

Puppies should gain approximately five to ten percent of their birth weight every day.

For example:

Birth Weight Expected Daily Gain

300 grams	15–30 grams
400 grams	20–40 grams
500 grams	25–50 grams
600 grams	30–60 grams

A common mistake is calculating daily gain from the puppy's current weight rather than its birth weight. The expected daily gain should continue to be based upon birth weight throughout the neonatal period.

(Continue with temperature regulation, fading puppy syndrome, hydration, neonatal emergencies, and week-by-week development.)

continue

Temperature Regulation: The Foundation of Neonatal Survival

One of the most important responsibilities of the breeder during the neonatal period is maintaining a proper environmental temperature. Newborn puppies are incapable of regulating their body temperature effectively. Unlike adult dogs, they possess very little body fat, have immature nervous systems, and cannot shiver efficiently to generate heat.

When a puppy becomes chilled, its ability to nurse and digest milk declines rapidly. As body temperature falls, the digestive tract slows, circulation becomes impaired, and the puppy becomes progressively weaker. A chilled puppy may stop nursing entirely, creating a dangerous cycle that quickly leads to dehydration, hypoglycemia, and death.

For this reason, the whelping environment must be carefully controlled.

Recommended environmental temperatures are:

Age	Environmental Temperature
Birth to 7 days	85–90°F
8–14 days	80–85°F
15–21 days	75–80°F

Many breeders prefer a heating pad positioned beneath only one portion of the whelping box. This allows puppies to move closer to or farther away from the heat source according to their needs. Heat lamps may also be used but require careful monitoring because they can contribute to dehydration and overheating.

Puppy behavior often provides valuable clues about environmental comfort. Puppies that are comfortably warm generally sleep quietly and nurse vigorously. Puppies that are too cold often pile tightly together and cry continuously. Puppies that are too warm tend to spread apart, appear restless, and may have dry mucous membranes.

Understanding Normal Puppy Temperatures

Newborn puppies normally maintain body temperatures lower than those of adult dogs. This often surprises new breeders and can lead to unnecessary concern.

The following temperatures are considered normal:

Age	Normal Rectal Temperature
1 week	96–98°F
2 weeks	97–99°F
3–4 weeks	100°F
5–6 weeks	100–101°F

A puppy with an abnormally low temperature should never be fed immediately. Cold puppies are unable to digest milk properly, and feeding can result in regurgitation, aspiration pneumonia, or further digestive complications. Instead, the puppy should be gradually warmed over one to two hours before feeding is attempted.

Likewise, excessively high temperatures may indicate overheating, dehydration, or infection and require prompt investigation.

Hydration and Fluid Balance

Hydration is critical to neonatal health. Because puppies are composed largely of water and possess limited fluid reserves, dehydration can develop quickly.

A healthy puppy's gums should feel moist and slick. Dry or tacky gums often indicate dehydration. Dark yellow urine, weakness, decreased nursing, and poor weight gain may also suggest inadequate fluid intake.

The most common cause of dehydration in newborn puppies is inadequate nursing. This may occur because the dam has insufficient milk production, the puppy is unable to nurse effectively, or stronger littermates monopolize access to the most productive mammary glands.

Close observation of nursing behavior and weight gain remains the most reliable method of detecting hydration problems early.

Monitoring the Dam

While much attention is focused on the puppies, the dam also requires careful monitoring during the neonatal period.

Her appetite should increase significantly as milk production begins. Lactation is one of the most energy-demanding processes in canine physiology, and many nursing bitches require two to three times their normal caloric intake.

Fresh water should always be available. Some breeders are surprised by the amount of water consumed by a heavily lactating bitch.

The dam should also be observed for signs of illness, including:

- Fever
- Loss of appetite
- Depression
- Vomiting
- Tremors
- Pain
- Swollen mammary glands
- Abnormal vaginal discharge

Any of these signs warrant veterinary evaluation.

Fading Puppy Syndrome

Perhaps no term causes more concern among breeders than "fading puppy syndrome." Rather than being a single disease, fading puppy syndrome is a general term used to describe puppies that progressively weaken and fail to thrive during the neonatal period.

Many different factors can contribute to fading puppy syndrome, including:

- Congenital defects
- Infection
- Inadequate nursing
- Low birth weight
- Hypothermia
- Dehydration
- Trauma
- Maternal neglect

Affected puppies often appear normal at birth but gradually become weaker over hours or days.

Early signs include:

- Reduced nursing
- Failure to gain weight
- Excessive sleeping
- Isolation from littermates
- Weak vocalization
- Cool body temperature

As the condition progresses, puppies may become limp, unresponsive, and unable to nurse.

Because deterioration can occur rapidly, early intervention is essential. Puppies showing signs of decline should be evaluated immediately for temperature abnormalities, hydration status, and nursing success. Veterinary attention should be sought promptly.

Umbilical Cord Care

The umbilical stump generally dries and falls off within several days after birth. During this time, breeders should inspect the area daily.

The umbilicus should remain dry and free from redness, swelling, discharge, or foul odor. Infection of the umbilical stump can spread quickly through the bloodstream and result in severe illness.

Any puppy with a swollen or infected umbilicus should receive prompt veterinary evaluation.

Stimulation of Urination and Defecation

Newborn puppies cannot effectively eliminate urine and feces without stimulation. Normally, the dam accomplishes this through licking immediately after nursing.

Breeders should confirm that the dam is performing this task consistently. Puppies should urinate after most feedings and pass stool regularly.

If assistance is required, a warm damp cotton ball or soft cloth may be gently rubbed over the genital and anal region until elimination occurs.

Failure to urinate or defecate normally can quickly become a serious problem and should never be ignored.

Recognizing Neonatal Emergencies

Breeders should develop the habit of evaluating puppies several times each day. Most neonatal emergencies begin with subtle changes.

Immediate veterinary attention should be sought if a puppy exhibits:

- Persistent crying
- Failure to nurse
- Weight loss
- Labored breathing
- Milk coming from the nose
- Vomiting
- Diarrhea
- Severe lethargy
- Pale gums
- Abnormal body temperature

The most successful breeders learn to act quickly when something appears abnormal rather than waiting to see if the problem resolves on its own.

Developmental Milestones During the First Two Weeks

Although puppies spend most of their time nursing and sleeping, important developmental changes occur during this period.

By approximately one week of age, puppies should be noticeably larger and stronger than at birth. Crawling becomes more coordinated, and nursing becomes increasingly vigorous.

Toward the end of the second week, the eyes begin to open. This process typically occurs between ten and fourteen days of age and may take several days to complete. Vision remains limited initially, but the opening of the eyes marks the beginning of a new developmental stage.

At approximately fourteen days, the ear canals begin to open as well. Puppies gradually become more aware of their surroundings and start responding to environmental stimuli.

These milestones signal the transition from the neonatal period into the transitional period, where dramatic changes in mobility, awareness, and behavior begin to occur.

Key Points

- Neonatal puppies cannot regulate their body temperature effectively.
- Environmental temperature management is essential for survival.
- Puppies should gain approximately 5–10% of their birth weight daily.
- Weight gain is one of the best indicators of health.
- Chilled puppies should be warmed before feeding.
- Hydration status should be monitored closely.
- Fading puppy syndrome is a syndrome rather than a specific disease.
- Early recognition of illness greatly improves survival rates.
- The dam should be monitored as carefully as the puppies.
- Eyes typically begin opening between 10 and 14 days of age.
- Ear canals generally open around 14 days of age.