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Popular Article

## Saving Newborn Puppies: Awareness and Management of Fading Puppy Syndrome

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### Introduction:

Fading puppy syndrome (FPS) is a term used to describe the death of neonatal puppies during the first two weeks of life, a period when they are entirely dependent on their mother and are physiologically immature to withstand disease or environmental stress. Newborns puppies cannot regulate their own body temperature until around four weeks of age, have a very immature immune system that relies solely on antibodies received through the mother's first milk and have kidneys too immature to maintain proper fluid balance. These limitations make them highly vulnerable to hypothermia, hypoglycaemia, dehydration and infection in the critical early weeks of life.

This condition is not a single disease but rather a clinical syndrome with multiple underlying causes, all converging on the same outcome, a puppy that appears healthy or adequately viable at birth yet steadily declines in condition, failing to survive beyond the early neonatal period.

### Etiology:

Fading puppy syndrome is multifactorial. The causes can be broadly categorised into maternal factors, infectious causes, environmental factors and inherent puppy deficiencies.

#### 1. Maternal Factors:

The dam plays a central role in neonatal survival. Dystocia can result in hypoxia and birth trauma in puppies. Agalactia (failure of milk production) deprives puppies of essential nutrition. Mastitis (infection of the mammary glands) can harm nursing neonates. Failure to receive colostrum within the early hours after birth make the neonate vulnerable to infection. Dams with poor body condition, nutritional deficiencies or systemic illness during pregnancy are significantly more likely to produce compromised litters. Maternal rejection or aggression sometimes seen in first-time mothers or those subjected to stress can result in a puppy being physically excluded from nursing and warmth, initiating a

rapid decline.

## 2. Infectious Causes:

- **Canine Herpesvirus (CHV-1):**

Canine herpesvirus is one of the major infectious threats that can lead to fading puppy syndrome. Puppies may appear healthy at birth and then rapidly deteriorate between 1 and 3 weeks of age, typically dying within 24–48 hours of symptom onset. Clinical signs include incessant crying, abdominal pain, soft yellowish-green faeces and dyspnoea. Dams may have no clinical signs of infection.

- **Canine Parvovirus (CPV):**

While primarily a disease of older puppies, CPV can cause myocarditis in very young pups if the dam is unvaccinated and they lack protective maternal antibodies.

- **Bacteria:**

Septicaemia from organisms such as *Escherichia coli*, *Staphylococcus* spp., *Streptococcus* spp., *Klebsiella* and *Pseudomonas* can spread rapidly through a litter. *Streptococcus canis* is a particularly significant cause of early neonatal sepsis and can be transmitted from the birth canal. *Brucella canis* infection in the dam is another important cause of late-term abortion, stillbirth and neonatal death.

- **Toxoplasma gondii and Neospora caninum:**

These protozoal parasites can be transmitted transplacentally and cause neonatal disease or death.

- **Canine Coronavirus and other enteric pathogens:**

May also contribute to diarrhoea, dehydration and death in young litters.

## 3. Environmental Factors:

Hypothermia is one of the major causes of neonatal mortality in puppies. A puppy that cannot nurse whether due to maternal rejection, competition from littermates or illness will rapidly become cold. Neonatal puppies require an environmental temperature of 29–32°C (85–90°F) in the whelping area during the first week of life.

## 4. Inherent Puppy Deficiencies:

- Structural congenital defects such as cleft palate, cardiovascular anomalies or hydrocephalus, though not always immediately apparent, can prevent effective nursing and compromise normal physiological function.
- Blood group incompatibility (Neonatal isoerythrolysis) between the dam and her offspring, though relatively uncommon in dogs, can result in haemolytic anaemia in affected neonates.

## Clinical Signs:

- Failure to gain weight or steady weight loss (normal puppies should gain 5–10% of body weight

daily)

- Persistent or excessive crying and restlessness
- Inability or reluctance to suckle milk
- Hypothermia
- Dehydration
- Diarrhoea (may be yellowish-green or haemorrhagic depending on cause)
- Abdominal bloating
- Weakness and lethargy
- Cyanotic or pale mucous membranes

### Treatment:

- **Thermoregulation:** Gradually restore temperature to 36–37°C using a towel wrapped warm water bottle or a heating pad placed below their bedding and by using a thermostatically controlled incubator. Avoid rapid rewarming it risks peripheral vasodilation and circulatory collapse.
- **Fluid Therapy:** Address hypoglycaemia with warmed 5% dextrose (1 ml/30g body weight) via subcutaneous injection. Follow with oral fluids once the puppy can swallow safely.
- **Nutritional Support:** Use commercial canine milk replacers (Royal Canin, Babydog Milk etc.), when maternal milk is insufficient. Cow's milk should be avoided as it is high in lactose and not suitable for puppies.
- **Antimicrobial Therapy:** Initiate broad-spectrum antibiotics promptly if sepsis is suspected.

### Prevention:

#### Pre-breeding Measures:

- Screen breeding animals for infectious diseases (e.g., *Brucella canis*, canine herpesvirus) before mating.
- Ensure the dam is healthy, vaccinated, dewormed and in optimal body condition.
- Perform genetic screening to reduce the risk of inherited defects.

#### During Pregnancy:

- Provide a balanced, nutritious diet suitable for gestation.
- Minimise stress and contact with unfamiliar dogs to reduce infection risk.
- Regular veterinary monitoring, including ultrasound to assess foetal viability.

#### At Whelping:

- Maintain a clean, warm whelping environment with proper hygiene and soft bedding.
- Supervise whelping closely, particularly in brachycephalic or large breeds prone to dystocia.
- Ensure puppies receive colostrum within the first 12 to 24 hours after birth.
- Record birth weights and provide additional support to weak or low-weight puppies.

### Neonatal Period:

- Maintain appropriate environmental temperature (29–32°C during the first week).
- Monitor puppies daily for signs of illness, nursing ability, vocalisation and hydration.
- Isolate sick puppies promptly while ensuring warmth and supportive care.

Awareness of fading puppy syndrome is an essential responsibility for every pet owner and breeder, as early recognition of its signs and a basic understanding of its causes can be the critical determinant between timely veterinary intervention and irreversible neonatal loss.