

**NEONATAL CARE
FOR ORPHANED
PUPPIES AND KITTENS**

Care Veterinary Services

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BITCHES/QUEENS NUTRITION

- Before we dive into neonates, just a little blurb on how important the mother's nutrition is during pregnancy
- Nutritional deficiencies can cause both reproductive failure (abortions, or birthing of dead fetuses) and congenital abnormalities
 - Cleft palates, under-developed neonates that do not thrive, etc.
- TOO much of a good thing can be just as bad, overweight queens and bitches are higher risk for fatal malformations within the litter as well including: cleft palates, anemia, skeletal abnormalities, tissue calcification, and failure to thrive/death due to too many vitamins and minerals



- Neonate is a puppy or kitten that is under 6 weeks of age
- Key to understand that their mom does not just provide milk but provides
 - Full balanced nutrition
 - An immune system
 - Continuous warmth
 - Socialization/bonding
 - Helps them to urinate and defecate (many puppies and kittens can NOT do this on their own)
- Role of the litter- puppies and kittens also get critical socialization skills within their litter

KEY TO UNDERSTAND **BEFORE** YOU COMMIT

- We all have a soft spot for caring for a helpless, cute puppy or kitten. But it is critical to understand the time and physical commitment it takes to raising an orphaned neonate especially younger than 3 weeks of age.
- Are you ready?
 - Regular feeding schedule (every 2 hours if a newborn)
 - Meticulous attention to mixing formula, environment
 - Daily note taking to alert if puppy/kitten needs help:
 - daily weight checks, urinating/defecating, calculating how much eating, temperature and humidity
 - Incorporating play/socialization especially if a single orphan
 - Heartbreak: it is not uncommon for an orphaned kitten/puppy to not make it, especially if someone is inexperienced at caring for these young babies

UNDERSTANDING COLOSTRUM

- Colostrum is the “First milk” that is produced within the first 24-72 hours of nursing
- It is critical that neonates receive this milk within the first 12 hours of being born due to the unique intestinal tract that neonates are born with
 - After 12 hours, even if they receive the colostrum, they will be unable to absorb its nutrients
- Colostrum contains: water, growth factors, digestive enzymes, KEY nutrients, energy and immunoglobulins (key part of the immune system)
 - Provides LOTS of energy for the first 2-3 days of life
- NOTE: this first milk is very thick due to all the extra nutrients. A neonate that is born weak, may have difficulty ingesting this due to how thick it is

THE IMPORTANCE OF COLOSTRUM

- Without receiving this first milk/colostrum, neonates are **EXTREMELY** vulnerable as this first milk contains a lot of energy and a “ready to go” immune system to help protect these babies from illness
- If a neonate does not ingest colostrum they are much more likely to become ill and their chances of survival are low until at least 2-3 months of age

RECOMMENDED SUPPLIES TO HAVE

- Safe area: clean, warm-> playpen or a box
- Notebook to chart daily and keep records
- Gram scale- weigh same time every day
- 3 layer bedding:
 - Non-absorbable bottom layer (shower curtain works great)
 - Absorbent 2nd layer (pee pad, newspaper)
 - Blanket/towels for soft/cushy top layer -> goal is to be soft, warm, but laid out smooth so can ambulate well
- Rectal Thermometer
- Room thermometer and great to check humidity too
- Unscented baby wipes to clean with
- Milk replacer: KMR, Esbilac
- Feeding tools: bottles with nipples or syringes

3 PRIORITIES TO FOCUS ON

- 1) Safe
- 2) Warm
- 3) Fed
- We will dive into details of all 3 of these categories

ENVIRONMENT

- Room Temperature (remember, they are not getting the normal heat from their mother or litter mates)
- Age 0-1 week Room Temp: 85-90 degrees F
- Age 2-4 weeks Room Temp-80-85 degrees F
- Age 5-6 weeks Room Temp-70-75 degrees F
- Humidity 50-60% is best; if they are sick or weak up to 85%

ENVIRONMENT DON'TS

- Bedding-not too bulky, avoid free ends with strings, etc
- ENSURE room temperature it is not too cold, this is critical

ENVIRONMENT

- Quiet room
- Separate from other animals/pets
- 1-3 weeks of age- box or playpen
- 3-6 weeks of age-larger area, plastic pool
- Clean, clean, clean-> moisture from urination and fecal material not only is a source of bacteria but also moisture quickly cools their body temperature down, and urine/fecal material can lead to skin irritation if not cleaned quickly
 - Ensure all bottles/nipples/syringes are thoroughly cleaned between use

MONITORING

- Food intake both time you fed and amount
- Body weight-> they should be gaining weight DAILY, something is wrong if they are not
- Body temperature (take this BEFORE each feeding)
- Elimination (urination/defecation)-> time, appearance
- Developmental milestones (discuss later)
- Any change in behavior (less alert, not eating as aggressively, etc)

KEY SIGNS SOMETHING IS WRONG

- Not gaining weight daily
- Decreased suckle reflex or appetite
- Less energy than the day before

- It is critical to understand that intervention needs to be taken at the **FIRST** sign of a concern as young puppies and kittens can decline rapidly

BIRTH WEIGHT GUIDELINES

- Over 80% of neonates that die within the first 48 hours have a low birth weight
- Again, neonates should be gaining weight **DAILY**

PUPPY BODY WEIGHT GUIDELINES

- Birthweight should be 1-6.5% of mother's weight
- Daily weight gain:
 - Week 1: 5-10%
 - Week 2-4: 3.5-6%
 - Week 5-10 2 grams/kg adult body weight

KITTEN BODY WEIGHT GUIDELINES

- 85-120 grams at birth
 - Below 75 grams is high risk of mortality
- Weekly weight gain 100 grams/week = minimum of 7 grams per day

WARMTH

- Newborns are highly predisposed to develop hypothermia because they are not able to thermoregulate
- They also cannot shiver to increase their body temperature during the first 3 weeks after they are born
- They have a low amount of body fat and cannot maintain their internal temperature as adults would
- If temperature drops, digestion stops, leading to hypoglycemia and dehydration even if they have a full belly

NORMAL BODY TEMPERATURES

Puppies	Kittens
Week 1 95-97 F	1-2 wks 95-99 F
Week 2 97-100 F	2-4 weeks 100 F
Week 3 100-102 F	

WHY IS BODY TEMPERATURE SO CRITICAL

- We NEVER want to see a neonate below 94 F,
- Suckling and swallowing decreases thus increasing risk of aspiration and regurgitation
- Gastrointestinal tract becomes hypomotile so digestion and peristalsis stops
- Key to understand the suckle reflex will not stop complete until below 89F
 - So a neonate will still suckle even when they cannot digest!
- What to do if they are cold?
 - SLOWLY warm them up over 2 hours and monitor them closely,
 - Remember, neonates are very bad at regulating their body temperature, so we also don't want to get them too warm

PROVIDING WARMTH

- Always inspect and ensure device is intact and does not have DIRECT contact on neonate
- Test to confirm it is not too hot
- Neonates must be responsive and mobile enough to move away from heat source if they get too hot
- Different sources:
 - Can use heating pads, but recommended tape off high settings; do not layer the entire bedding
 - Warm water bottles
 - Heating discs/microwavable heating pad
- Caution with heating lamps

FEEDING

- Maintain a routine feeding schedule
- Follow milk replacer instructions CLOSELY
- Warm each feeding to 95-100F via stove
 - Do NOT use microwave to heat, won't heat properly
 - Once older can feed at room temperature
- RECORD

BEST WAY TO FEED

- Syringe or bottle feed with nipple
- If puppy/kitten is not suckling, consult with veterinarian on how to place a feeding tube
 - <https://www.youtube.com/watch?v=4v5TWiR-Jks>

FEEDING SCHEDULE AND AMOUNT

- Puppies
 - Puppies: 10-20ml per feeding first week of life
 - ~240 kcal/kg/day
 - Feed every 2-3 hours the first week
 - Then can slowly wean down to 4 times day
- Kittens:
 - Kittens 4-5ml per meal per 100g (common birth weight is 100g)
 - 20-26 kcal per 100g per day
 - Feed every 2-4 hours the first 2 weeks
 - can decrease to every 4-6 hours until weaned

FEEDING POSITION

- This is KEY
- Feed as if nursing from mom
- Do NOT put on back or hold like a baby



MILK REPLACER KEY

- Best milk replacers: Esbilac, KMR, Breeders Edge or Fosters Edge
- Do not switch milk replacers
- MIX as instructed, warm to temperature via stove NOT microwave
- Only prepare enough that can be used within 24 hours
- Store in the refrigerator
- Throw away anything not used within 24 hours
- Remember: not following instructions and not properly warming milk can cause diarrhea or constipation which can easily lead to death at this young off age

WHAT ABOUT COW OR GOAT MILK?

- NO!!! This is NOT a sufficient milk replacer even if it's raw milk
- Cows and goats are NOT cats and dogs, they do not have the same nutrient requirements
- Cow/goat milk is low in: fat, minerals, and proteins that are essential to puppy and kitten neonates
 - Most importantly, it lacks the 2 amino acids that are essential to kittens and puppies: arginine and taurine. Without these amino acids present kittens can form cataracts and both will have poor growth in general.
 - Cows milk is very low in iron compared to dogs/cats, high risk of anemia if feeding this as a milk replacer

MONITORING FEEDING DEVICES

- Inspect the nipple prior to each use to monitor the flow
 - Goal is to have 1 drop at a time
 - Too high of a flow can cause them to aspirate
 - Too low of a flow can make feeding too hard and they may not eat enough

BURPING/ELIMINATIONS

- I know this sounds silly, but bottle-fed babies need to be burped
- They often swallow air when suckling
- Gently rub their belly with them laying on their back on your lap or can put up on shoulder and gently rub/tap
- This will need to continue for first 3 weeks of life
- Remember we also need to help them urinate and defecate
 - Use a warm moist cotton ball or cloth and rub anus and genital area
 - <https://www.youtube.com/watch?v=EJbAYo6x4VM>

WEANING

- Begin to introduce feed at 3-4 weeks
- Can begin mixing milk replacer with food to make gruel consistency
- Use low, shallow dishes with short edges and ensure the dish does not slip around the pen

FADING PUPPY/KITTEN SYNDROME

- What exactly is this? What does it mean?
- This is a term we have come to use for neonates that gradually do worse and die within the first 2 weeks of life
- Signs are often vague, but if you monitor them closely , you can catch this early:
 - Failure to gain weight
 - Decreased activity
 - Separating from the rest of the litter (if they are with a litter)
 - Lower suckling than litter mates

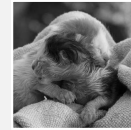
CAUSES OF FADING PUPPY/KITTEN SYNDROME



- Deficient colostrum intake
- Dehydration
- Hypothermia
- Hyperthermia
- Hypoglycemia



- Congenital birth defects
- Premature
- Low birth weight
- Other underlying diseases



- Bacterial infection
- Viral infection

Treatment is supportive care and even with the best of care, these neonates may not survive

MOST COMMON CAUSES OF DEATH

- Hypothermia
- Hypoglycemia
- Low birth weight
- Dehydration
- Failure to ingest colostrum within first 12-24 hours

HYPOGLYCEMIA

- Neonates do NOT have good ability to store sugar/glucose within their body like adults
- Neonates are 4 times more likely to die with a blood glucose lower than 90 if within 24 hours after birth
- This is why it is SO CRITICAL that neonates eat every 2-3 hours, or the risk of hypoglycemia is high

PROBLEM SOLVING

- Crying after feeding = MAJOR sign something is wrong! Most common problems:
 - Temperature
 - Discomfort
 - Hunger
- Diarrhea:
 - Overfeeding is the most common cause of diarrhea
 - If trying to feed less frequently throughout the day and neonate starts to have diarrhea, then need to increase feeding frequencies with smaller meals
- Underweight = indicator of not eating enough

BASIC CARE SUMMARY

- Keep them warm
- Key that get colostrum/First Milk in first 12 hours of birth
- Keep them clean
- Keep their environment clean
- Burp and stimulate for urination/defecation for first 3 weeks of life

KEY POINTS

- Be ready to commit fully
- Monitoring is critical for success
- NEVER feed puppy/kitten if body temperature is below 94 degrees F
- Be consistent with your mixing, storage and temperature of milk replacer

SOCIALIZATION

- If neonate survives first 2 weeks, it is critical to start thinking about socialization to give them the best chance of the best quality of life possible
- Orphan neonates can be very sweet and affectionate when young, but quickly become aggressive as they get older as they do not have litter mates or a mom to teach them proper interactions, discipline and socialization behaviors
- Try to find other litters to expose the neonate too
- Home socialization:
 - NEVER PLAY WITH YOUR HANDS!!!
 - Lots of toys to play with and re-direction
 - Do NOT let them climb on you -> OUCH! Replace with toy/cat tree
 - Always have a stuffy for your neonate
 - 2-3 weeks of age: expose them to toys, new people different areas/environments, sounds,
 - 4-5 weeks: crate train, floor textures, grooming, car rides