

# Neonatal Kitten Care

*Alley Cat Allies*  
1801 Belmont Road, NW  
Washington, DC 20009  
202 667-3630

## CONTENTS

<b>INTRODUCTION</b>	<b>1</b>
<b>NEONATAL KITTEN CARE</b>	<b>2</b>
General Information	2
Birth Weight	2
Colostrum	3
Temperature	3
Eyes and Ears	3
<b>EMERGENCY CARE</b>	<b>4</b>
General Information	4
Danger of Chilling	4
Warming a Chilled Kitten	5
Emergency Supplement	6
Dehydration	6
Subcutaneous Injection	6
<b>NUTRITIONAL CARE</b>	<b>8</b>
General Information	8
Computing the Formula	8
Feeding Methods	9
Tube Feeding	10
Bottle Feeding	11
Feeding with Eyedropper	12
Feeding Routine	12
Feeding Problems	13
Overfeeding	13
Underfeeding	13
<b>EXTERNAL PARASITES</b>	<b>14</b>
General Information	14
Fleas	14
Lice	15
Ear Mites	15
<b>INTERNAL PARASITES</b>	<b>16</b>
General Information	16
Roundworms	16
Hookworms	17
Tapeworms	17
Giardia	17
Coccidia	17
Treatment	17

<b>NEONATAL KITTEN DISEASE</b>	<b>18</b>
<i>General Information</i>	<b>18</b>
FVR	<b>18</b>
FCV	<b>18</b>
URI	<b>18</b>
FeLV	<b>19</b>
FIP	<b>20</b>
<b>FUNGAL DISEASE</b>	<b>20</b>
<i>General Information</i>	<b>20</b>
<i>Treatment</i>	<b>20</b>
<b>KITTEN MORTALITY</b>	<b>21</b>
<b>INDEX</b>	<b>22</b>
<b>CHARTS</b>	<b>24</b>

## NEONATAL KITTEN CARE

This handbook was developed by Joan E. Bush as a response to the need for trained individuals to care for abandoned kittens found in San Francisco each year. Many of these kittens were either euthanized or left to die on the streets because there were no adequate resources available to help them.

The program's intent was to bring together individuals interested in the welfare of San Francisco's abandoned kittens. Unfortunately, the program no longer exists. Alley Cat Allies has gotten permission to reprint the Neonatal Kitten Care handbook and distribute it because this problem exists nation wide.

This handbook is a well written, comprehensive tool which can be used to teach individuals basic information regarding the care of a newly found abandoned kitten, and the ongoing care required for her sustenance and growth. The skills developed by individuals would minimize the need for extensive veterinarian involvement.

Caring for abandoned neonatal kittens is time consuming, and at times, difficult work. However, participating in a process that turns fragile abandoned newborns into healthy adoptable kittens, is an enriching experience. It is hoped that many individuals will want to participate in this process, and that together, we can substantially reduce the numbers of abandoned neonatal kittens that die needlessly from lack of care.

## NEONATAL KITTEN CARE

### General Information

The term neonatal refers to kittens from birth to three weeks of age. Kittens are very fragile during these first weeks. They are totally dependent upon their mother for protection, warmth and nutrition.

Healthy newborns cared for by their mother are a vision of contentment. They spend 90% of their time sleeping against her warmth, and 10% of their time eagerly nursing.

Most mother cats normally take excellent care of their litters. They are meticulous about keeping the nest and each kitten clean. They are extremely protective of their newborns, and will move them to a new location if they are threatened.

Abandoned neonatal kittens present a very different picture. Cold, hungry, and unprotected, they cry plaintively for their mother. Denied the warmth of her presence, they eventually become comatose. Abandoned neonatal kittens, unable to sustain their body temperature, slip into a coma and die.

### Birth Weight

A healthy kitten will weigh three to four ounces at birth. Kittens should begin to gain weight rapidly a few days after birth, and should double their weight by one week. A continuous weight gain of approximately  $\frac{1}{2}$  ounce a day is one indication of a healthy kitten.

If a kitten drops 10 percent of initial birth weight during the first 48 hours of life, and does not start to regain by 72 hours, the kitten is not doing well and should be closely monitored.

The following chart will give you an indication of what is considered normal weight ranges for a kitten.

### *Average Kitten Weight*

Age in Days	Weight
1	$2 \frac{1}{2} - 4 \frac{3}{4}$ oz.
5	3 - 7 oz.
10	$4 \frac{1}{2} - 9 \frac{3}{4}$ oz.
15	6 - $11 \frac{3}{4}$ oz.
20	$7 \frac{1}{2} - 14 \frac{1}{2}$ oz.
25	8 - $16 \frac{3}{4}$ oz.

### **Colostrum**

The first milk that a kitten receives is colostrum. Colostrum is a protein substance high in antibodies that protect the kitten from illness during its first few weeks of life. The kitten absorbs these proteins through the intestines during the first 24 to 36 hours after birth. The degree of immunity received through colostrum depends upon the antibody level in the blood of the mother cat. A kitten that does not have colostrum in this time frame is seriously immuno compromised, and therefore extremely vulnerable.

### **Temperature**

The average rectal temperature of a one-day-old newborn is between 92 and 97 degrees F. The kitten's temperature at 2 to 21 days old will be 96 to 100 degrees F.

The neonatal kitten does not have the ability to constrict its skin blood vessels. Because of this, the kitten cannot retain body heat and is dependent on the mother cat to keep warm.

### **Eyes and Ears**

All kittens are born with closed eyes and closed ear canals. They can neither see nor hear during the first few days of life. They find their way to their mother by sensing the heat generated by her body. Kittens find their way to a nipple by sense of smell and tactile sensations.

The ear canals will begin to open at 5 to 8 days of life. Eyes begin to open at 8 days and are completely open at 14 days. When kittens are three weeks old, they will have developed complete sight and sound orientation.

## Neonatal Kitten Care

All kittens are born with blue eyes. Their true colors appear when they are three weeks old.

### EMERGENCY CARE

#### General Information

One of the most important aspects of caring for a kitten is *keeping good records*. You will want to chart the kitten's initial weight, take notes on the kitten's general appearance, and accurately chart the feeding schedule with the time and amount of formula fed.

The more detailed your notes, the more information you will have available to you for decisions you may have to make regarding a kitten's health.

Keeping the kitten and its environment clean is essential. If you do not wash your hands before and after working with a kitten, you could transmit viruses and bacteria to healthy cats or kittens. The utensils you use for feeding and medicating must also be thoroughly cleaned and sterilized.

If you will be caring for a neonatal kitten in your home, it is helpful to have the supplies you will need before hand. The following is a list of items you will need:

Nursing Bottles	Cotton Balls	KMR
Gram Scale	Q Tips	Heating Pad
Room Thermometer	Pedialyte	Baby Rectal Thermometer

#### Danger of Chilling

The greatest single danger to the neonatal kitten is *chilling*. A kitten that is separated from its mother will not live long. Apart from her warmth, the kitten has no way to maintain a normal body temperature. Prolonged exposure to cold results in a drop of body temperature (hypothermia). As the kitten's body temperature drops the blood sugar level of the kitten falls below normal (hypoglycemia). The kitten's internal organs begin a systematic shutdown. The colder the temperature the sooner the kitten will lapse into a coma and die.

Most kittens that are found outside have already lost essential body heat. If a kitten feels cold to the touch, hypothermia has set in. A kitten's condition is critical at this point.

## Neonatal Kitten Care

Although it is vital to warm a kitten, care must be taken to avoid warming too rapidly. **Dehydration, shock and death can result from warming too quickly.**

### Warming a Chilled Kitten

You can use the following techniques to warm a chilled kitten. When you are outside and find a newborn:

*Place the kitten under your coat or sweater. An armpit makes an excellent temporary incubator.*

*Gently begin massaging the kitten to restore circulation.*

When you are at home:

*Wrap a hot water bottle in a towel and place it next to the kitten.*

*or*

*Place a heating pad down one side of a cardboard box and half way underneath the box. Place a towel in the bottom of the box. Place the heating pad on the low temperature setting. **Make sure the heating pad does not cover the entire bottom of the box. The kitten must have room to move away from the heating pad if it is too hot.***

*or*

*A small "Pet Taxi" (a plastic pet carrier) with a heating pad placed down the back and partially under the bottom is an excellent incubator. Place the heating pad to the low temperature setting. Place a towel in the bottom of the plastic carrier. **Make sure there is sufficient room for the kitten to move away from the heat.***

The temperature in the area the kitten is kept must be maintained at 85 to 90 degrees F. during the first week of the kitten's life. The temperature should be lowered 5 degrees F. each week until 70 degrees F. is reached. A reliable room thermometer is essential to insure the temperature is maintained at a correct level.



### Emergency Supplement

Food is essential to the survival of the newly found kitten. However, a kitten is unable to digest food when it is chilled or cold. ***Never feed a kitten that is chilled or cold - this will kill the kitten!***

Administering .01 cc of "Karo Syrup Light" orally or by rubbing it on the gums of a hypoglycemic kitten will raise the blood sugar level of the kitten, and help stabilize the kitten while you are warming it. If you do not have karo syrup, you can mix a solution of water and sugar in equal parts and administer .01 cc to the kitten. Nutro-Cal is also effective when used for hypoglycemic conditions and administered at .01 cc. Nutro-Cal can be purchased at most pet stores.

You will serve the kitten its first formula once its body temperature has returned to normal and its internal organs are once again functioning normally.

### Dehydration

Dehydration is an excessive loss of water and electrolytes (minerals such as chloride, sodium and potassium). It is caused by insufficient milk intake, prolonged vomiting or diarrhea and hypothermia. A dehydrated kitten requires immediate care.

The best way to detect dehydration is to pick up a fold of skin along the kitten's back. When you release the skin it should spring back into shape. If it remains in a ridge, the kitten is dehydrated.

If a kitten is severely dehydrated it should receive a subcutaneous injection of Ringer's lactate (a balanced electrolyte solution). It is not difficult to learn how to give subcutaneous fluid injections, and it will often save a kitten's life. The fluid should be **warm** not hot when given.

For less severe cases of dehydration an electrolyte solution can be given orally. Pedialyte is an electrolyte solution used for human babies that are dehydrated. It is sold at drug stores and grocery stores in the baby section. Administered at 1 cc three times a day to a kitten Pedialyte helps maintain the kitten's electrolyte balance while the source of the dehydration is being corrected.

### Subcutaneous Injection

Subcutaneous injections of electrolyte solutions are given to kittens under the skin, not into the muscle (intramuscular). A subcutaneous injection given to a kitten using a "butterfly needle" causes little discomfort to the kitten. The butterfly needle is a very small needle with a long tube that attaches to a syringe. The kitten can move around while you are administering the electrolyte solution.

## Neonatal Kitten Care

The amount of electrolyte solution administered will be determined by the degree of dehydration, and the kitten's weight. The following picture demonstrates how to use a butterfly when rehydrating a kitten.

## NUTRITIONAL CARE

### General Information

Neonatal kittens have only a minimal amount of subcutaneous fat. Frequent feedings are required to maintain adequate blood sugar levels and provide energy for metabolism. Sufficient intake of formula must also offset the large amount of dilute urine and water loss resulting from immature kidneys. Frequent feedings spread out over a day's time will help prevent overloading of the kidneys and digestive system.

Cow's milk is an inadequate substitute for the milk received by a kitten from its mother. The calcium-to-phosphorous ratio and lactose levels are too high in cow's milk. The energy, fat levels and protein are too low to provide adequate growth in a kitten. Human baby formula is also not a good substitute as it provides less than 50% of the protein and fat required for a kitten's growth.

There are a number of commercial feline formulas on the market that closely match the nutrients received by kittens in their mother's milk. You can purchase these products at most pet stores, or through a veterinarian.

Milk replacer products available in the Bay Area are KMR (Pet-Ag), Just Born (Farnam), and Nurturall (Veterinarian Products Laboratories). These products are available in liquid and powder form.

### Computing the Formula

The kitten's energy level requirements dictate how much food is to be fed. Kittens require 380 kilocalories per kilogram at birth. To calculate the daily amount of milk replacer to feed:

1. Divide the kitten's weight in grams by 1000 to determine the weight in kilograms.
2. Multiply the answer from step one by 380 kilocalories. This amount is the caloric requirement for sustaining the kitten's life on a daily basis.
3. Divide the amount needed by the kitten by the caloric value of the commercial formula. Multiply this answer by the quantity of formula in millimeters that supplies the specific caloric value.
4. Take the total for the day and divide it by the number of feedings per day.

***Are you confused?*** The following chart will enable you to quickly assess the kitten's daily nutritional needs.

## Neonatal Kitten Care

KMR			
Age in Weeks	Average Weight	CC of KMR per Day	Feedings per Day
1	4 Oz.	32 cc	6
2	7 Oz.	56 cc	4
3	10 oz.	80 cc	3
4	13 Oz.	104 cc	3
5	1 lb.	128 cc	3

According to this chart, a 4 Oz. kitten would be served approximately 5 cc of formula 6 times a day.

The two other commercial milk replacers, Just Born and Nurturall, have daily feeding schedules printed on their products.

If you are unable to obtain a commercially prepared milk substitute, you can use the following recipe as a temporary milk replacement:

- 2/3 cup homogenized whole milk
- 3 raw egg yolks (*organic or "free range" eggs are best*)
- 1 tablespoon corn oil
- 1 dropper liquid pediatric vitamin

Small and weak kittens do best if they are fed every four hours for the first four days. If they are unable to take the amount of formula scheduled for each feeding, the number of feedings should be increased, and the amount of formula decreased at each feeding.

It is important to understand that formula intake is limited by the size of the stomach. A kitten's stomach should feel full but not extended after being fed.

### Feeding Methods

There are three methods for feeding a neonatal kitten. They are by bottle, tube and eyedropper. It is best to try bottle feeding or eyedropper feeding before the tube method.

### Tube Feeding

Tube feeding is strongly recommended for very small, weak or ill kittens who are unable to suckle. The advantages of tube feeding are that it is time saving, easy to learn, and it precisely administers the amount of formula that is needed. You do not have to burp a tube fed kitten because no air is taken into the stomach.

The disadvantage of tube feeding is that it must be done skillfully and carefully to avoid aspirating (dispensing) fluid into the lungs. Aspiration of formula can lead to pneumonia and death.

The following is a list of the steps required to perform a successful tube feeding.

1. Obtain a small soft rubber catheter (5 French) for small kittens, a larger (8 French) for larger kittens, and a syringe from a drug store or veterinarian.
2. Measure the tube from the kitten's last rib to its mouth.
3. Mark the tube with a piece of tape at the point it reaches the opening of the mouth.
4. Warm the formula to body temperature, approximately 100 degrees F.
5. Moisten the tube with formula.
6. Place the kitten in an upright position.
7. Slide the tube over the kitten's tongue and into its throat.
8. Continue passing the tube into the mouth until you reach the tape mark.
9. *Slowly* begin to eject the formula into the kitten's stomach.

## Neonatal Kitten Care

Make sure you do not inject more formula than the kitten can hold. Doing so can cause the kitten to regurgitate the milk, aspirate the formula, and develop pneumonia. If you have weighed the kitten and have computed the correct amount of formula to give, you can avoid this complication. Injecting the formula too rapidly can also cause aspiration of formula.

If the kitten begins to choke, remove the catheter and begin again. If you feel resistance when inserting the tube, remove the tube and begin again. You do not have to be concerned if the kitten cries. Having the capacity to cry indicates the tubing has not been inserted into the windpipe.

Kittens that are tube fed do not have the opportunity to suckle. This may result in the kitten trying to suck on various body parts of other kittens. If this occurs the kitten may have to be separated from other kittens.

### **Bottle Feeding**

Most pet stores sell nursing bottles for kittens. Often the hole in the nipple of these bottles is too small. You want to make the hole large enough to allow milk to drop slowly from the nipple when the bottle is inverted. Pediatric baby bottles also work, especially for older kittens.

Warm the formula to approximately 100 degrees F. The formula should feel warm on your wrist at this temperature.

Place the kitten on its stomach to bottle-feed. This is done to avoid having milk run into the kitten's windpipe. Try to angle the bottle so that air does not go into the stomach. Encourage suckling by keeping a slight pull on the bottle. ***Never squeeze the bottle to force formula out.*** This action could result in the kitten inhaling formula into its lungs, which could cause pneumonia.

You will usually see bubbles forming around the kitten's mouth when it is full. ***Always burp the kitten after each feeding.*** Kittens can actually die from too much gas formation in their stomachs.

### Feeding with Eyedropper

Feeding with an eyedropper is the least desirable method of administering formula. It is time consuming and more difficult to administer correct dosages. However, it can be used if nothing else is available.

Follow the same guidelines for feeding with an eyedropper as you would when tube feeding or bottle feeding. Do not inject more formula than required or administer the formula too rapidly. You do not want to cause fluid to be dispensed into the lungs.

### Feeding routine

There is one more aspect of the feeding routine that must not be overlooked regardless of the feeding method you use. ***After each meal the kitten must be stimulated to urinate and defecate.*** Massaging the kitten's anal area with a warm, damp cotton ball will provide this stimulation.

It will be necessary for you to continue this after each meal until the kitten can eliminate on its own, usually at three weeks of age.

When the kitten reaches three weeks of age, you can begin training to eat from a dish. You can purchase a commercial gruel, or make one of your own from formula mixed with Gerber's baby food. Gerber's turkey and broth baby food mixed with KMR works well as gruel.

### Feeding problems

There are two common feeding mistakes that can cause health problems for a kitten, *overfeeding* and *underfeeding*.

#### Overfeeding

Overfeeding a newborn kitten can cause serious health complications. The kitten's immature kidneys have a very limited capacity and are unable to handle excessive amounts of fluid. Overloading the digestive system causes diarrhea. Diarrhea causes dehydration which can kill a kitten if it is not corrected.

The kitten's stool should be firm and yellowish in color. A loose yellowish stool is a sign of mild overfeeding. Greenish stool indicates food is passing too rapidly through the kitten's system. Grayish stool with a foul odor indicates inadequate digestion of formula and it is the most serious form of diarrhea.

It is important to correct overfeeding conditions as soon as you become aware of them. Make sure you have computed the correct amount of formula for each daily feeding. If you are administering the correct amount, and the stool is loose and yellow, you can dilute the formula with 1/3 water. When the stool appears yellow and firm you can return to feeding the full strength formula.

If the kitten continues to have diarrhea, and it appears greenish, dilute the formula with 1/3 water and administer three drops of kapectate every four hours. Return to the full strength formula when stool appears normal.

Grayish stool is the result of consistent overfeeding. At this point the kitten is not receiving nutrition and is dehydrated. Once again, dilute the formula with 1/3 water. Administer 1 cc of Pedialite (a balanced electrolyte solution available at drug and grocery stores) three times daily. Administer kapectate at three drops per ounce body weight every three hours until diarrhea has stopped.

Although overfeeding is commonly responsible for severe diarrhea, it is not always the cause. Kittens with gray or white stool should be examined by a veterinarian.

#### Underfeeding

Underfeeding is life threatening to the newborn. A kitten that is underfed is restless and cries excessively. It will eventually appear listless and apathetic.

A kitten that is underfed will eventually become dehydrated and chilled. If this has happened you will have to warm and rehydrate the kitten if it is to survive (review procedure for warming a chilled kitten on page 5).



## Neonatal Kitten Care

To be sure you are feeding the correct amount of formula refer to the kitten's weight chart on page 3.

Keeping accurate records of the kitten's weight is extremely important. Having weighed the kitten initially you will be able to tell if the kitten has gained weight steadily during the first seven days. The kitten should be weighed daily for the first two weeks, and then weighed every three days until one month old.

## EXTERNAL PARASITES

### General Information

Most kittens born outside are infested with lice or fleas. It is essential to remove these parasites as soon as possible. Fleas in particular are a serious health threat. Fleas ingest blood from the kitten for nourishment. ***A kitten can die from anemia due to blood loss from flea infestation.***

One other troublesome parasite of kittens is ear mites. If the mother cat has ear mites, her kittens become infected while they are still in the nest. Ear mite infestations that are not attended to can lead to bacterial infections of the ear canal. Ear disfigurement can also result from severe ear mite infestation.

Ear mites are very contagious to other cats, kittens, and dogs.

### Fleas

Fleas are by far the most common external parasite found on kittens. The use of a simple flea comb will expose the degree of flea infestation. In severe cases it is difficult to comb through the kitten's hair. The comb becomes blocked with flea fecal material composed of digested blood. When this material is brushed onto a wet piece of paper, the paper will turn a reddish brown color. A flea comb will also pick up salt-like white grains, which are flea eggs. Visually you will be able to see fleas moving rapidly across the kitten's body.

If a kitten is severely infested with fleas it is best to bath the kitten in Mycodex Pet Shampoo. The following procedure will help you give a successful bath:

1. Heat the room you will be bathing the kitten in to 85 degrees F.
2. Place cotton in the kitten's ears.
3. Instill artificial tears or Terramycin ointment in the kitten's eyes.
4. Begin shampooing kitten at the neck and work towards the tail.

## Neonatal Kitten Care

5. Rinse well to remove all soap.
6. Wrap kitten in a towel and pat dry.
7. Use a hair dryer on *low heat* and completely dry the kitten.

Remember that *chilling* is a serious threat to kittens. You want to make sure the kitten is completely dry and warm before removing it from the bath room. You also must be very cautious when using a hair dryer. It is easy to burn a kitten's skin if you do not pay close attention to the blow drying process.

## Lice

Lice are often found on kittens that are malnourished and run down. They feed on the skin scales of kittens. Lice are pale colored and move very slowly through the kitten's hair. They attach their white grain like eggs to the kitten's hair shafts. The eggs are very difficult to brush off.

Kitten lice are *not* transferable to humans.

Follow the same bathing procedures for the removal of lice as you do for fleas.

## Ear Mites

Typical signs of ear mite infestation are headshaking, pawing and scratching at the ear. These are reactions to the ear mites moving on the skin surface of the inner ear and piercing the skin for food.

You can detect an ear mite infestation by looking into the kitten's ear and observing a dark brown waxy material. This material has a coffee-ground look to it and possibly will be accompanied by an unpleasant odor.

The first step in treating an ear mite infestation is to clean the ear. If the ear is not clean the ear mites will be sheltered by debris and make it difficult for the ear medication to reach them.

Moisten a cotton ball with mineral oil and wrap it around your little finger. Gently insert it into the ear canal and wipe the surface to remove debris.

You can also use a Qtip moistened with mineral oil to clean the creases of the ear and the vertical portion of the ear canal. *You must be careful to swab the vertical portion of the ear canal with the applicator held vertically and downward.* The ear canal turns horizontally before it ends at the ear drum.

## Neonatal Kitten Care

After you have cleaned the ear canal you will be ready to insert medication to kill the ear mites. A miticide preparation is used and the directions for use are on the bottle. The miticide will not kill the ear mite eggs that have been deposited in the ear canal so repeated treatments of miticide twice weekly for three to four weeks will be required or as directed by a veterinarian.

## INTERNAL PARASITES

### General Information

The most common internal worm parasites found in kittens are roundworms, hookworms, and tapeworms. The gastrointestinal parasites, *Giardia* and *Coccidia*, are commonly found in kittens.

### Roundworms

Kittens become infected with roundworms through their mother's milk. Larvae that are inactive in the mother cat are somehow activated by pregnancy and migrate to the mammary glands.

A majority of abandoned neonatal kittens have roundworm infestations. Infected kittens may lose their appetite, appear depressed, have diarrhea, become anemic, and pass mucus or blood in their stool. Roundworms may also be visible in the kitten's feces.

## Neonatal Kitten Care

### Hookworms

Hookworm infestation is also passed to the kitten through the mother's milk. As with roundworms, the larvae of the hookworm is activated during pregnancy and passed to the kitten via the mammary glands.

An acute infestation of hookworms in kittens can cause anemia, and potentially kill the kitten from loss of blood. The stool of the kitten will appear very black and possibly bloody.

### Tapeworms

Tapeworms are not life threatening. A kitten becomes infected by ingesting a flea that is infected with a tapeworm. You may notice white rice looking segments around the kitten's anus.

Kittens are usually treated for tapeworms at six weeks of age.

### Giardia

*Giardia* is a protozoa (an organism composed of a single cell) parasite of the small intestine tract. *Giardia* interferes with the absorption of nutrients and fluids by the intestines. This malabsorption leads to severe diarrhea. A yellowish, foamy, soft stool can be an indication of *Giardia*.

### Coccidia

*Coccidia* is a protozoa parasite of the small intestine and the beginning of the large intestine. Kittens can develop dysentery from *Coccidia* and die. The kitten's stool will contain mucus and blood.

### Treatment

There are medications available to cure the various internal parasitic infections of kittens. Stool samples must be examined by a veterinarian to determine what medications are to be used.

If a kitten you are caring for has persistent diarrhea, and you are not overfeeding, you can suspect an internal parasitic condition may be causing it.

## NEONATAL KITTEN DISEASE

### General Information

The diseases affecting neonatal kittens are: feline viral rhinotracheitis (FVR), feline calicivirus (FCV), feline leukemia virus (FeLV), and feline infectious peritonitis (FIP).

The brief descriptions of FVR, FCV, FeLV and FIP are to aid you in recognizing and potentially serious illness.

Upper respiratory infections (URI) caused by the feline calicivirus will be discussed in more detail. Mild cases of URI can be treated with minimal veterinarian intervention.

### FVR

Feline viral rhinotracheitis is caused by the herpes virus and affects the respiratory system. An infected kitten may appear weak, refuse to nurse, and cry painfully. Coughing, sneezing, nasal congestion, eye discharge, fever, ulcers of the tongue, and conjunctivitis complicated with ulcerations of the cornea may occur. Upper respiratory infections (URI) caused by the feline viral rhinotracheitis virus require a longer course of treatment than upper respiratory infections caused by less potent viruses.

The FVR virus can survive eighteen to twenty-four hours at room temperature.

While waiting for veterinarian assistance, keep the kitten warm and hydrated.

### FCV

Feline calicivirus is an acute respiratory infection of the feline respiratory system. The FCV virus can survive for one or two weeks at room temperature. The calicivirus is similar to the human cold virus. The symptoms of FCV are similar to FVR.

### URI

A majority of abandoned neonatal kittens rescued from outdoors have upper respiratory infections. The severity of the URI is dependent on the virus causing it, and the general health of the kitten. A mild case of URI resembles a human cold with runny eyes and sneezing. However, severe cases of URI can cause high fever, loss of appetite, dehydration, and eye ulcers.

## Neonatal Kitten Care

*Because there are other serious diseases that also begin with mild URI symptoms it is essential that all kittens with URI be isolated until the cause and severity of the URI can be determined.*

URI is *extremely contagious* and easily spreads from one kitten to another. It is transmitted by direct contact with infected eye or nasal discharge, contaminated cat litter pans, food and water bowls, air borne droplets, and by human hands and clothing.

The following list can be used to help a kitten recover from a mild case of URI:

1. Provide a warm draft-free environment.
2. Keep eyes and nose clear of discharge by using a moistened warm cotton ball.
3. Use a room vaporizer to ease nasal congestion, or steam up the bathroom and have the kitten stay in it for 15 minutes several times a day.
4. Nasal congestion can be relieved by using Afrin Pediatric Nasal Spray. This should only be used for a maximum of 4 days, so that the mucus membranes do not dry out.

In kittens, mild cases of URI can develop very quickly into more serious conditions. If a kitten stops eating, develops thick yellowish-green discharge from the eyes or nose, or has difficulty breathing, it needs veterinarian attention.

URI is not sensitive to antibiotics. Antibiotics are administered to prevent secondary bacterial invaders.

URI is a common cause of conjunctivitis in kittens. Conjunctivitis is an inflammation of the membrane lining of the eyelids. The kittens eyes will usually be pasted shut. Cleaning the eye with a warm moist cotton ball and applying Terramycin four times daily usually clears up the conjunctivitis. If the conjunctivitis is caused by the herpes virus, a longer period of treatment will be required using different medications.

## FeLV

The feline leukemia virus can be contracted in utero or through the mother cat's milk. Maternal infection may cause "fading kitten" syndrome - a condition in which neonatal kittens grow weak and die rapidly.

FeLV suppresses the kitten's immune system and allows other diseases to develop. The signs of illness are apathy, fever, loss of appetite, weight loss, and pale mucus membranes caused by anemia.

A blood test is required to diagnose FeLV.

## Neonatal Kitten Care

### **FIP**

Feline infectious peritonitis is a fatal disease. It is responsible for a small percentage of kitten mortality. Early signs of FIP (listlessness, loss of appetite, weight loss, depression, and mild upper respiratory infection) mimic other diseases.

FIP is also suspect in cases of "fading kitten". Kittens at first may appear healthy, but grow weak and die in a few days. Kittens may experience difficulty breathing and die within a few hours from circulatory collapse and congestive heart failure.

## **FUNGAL DISEASE**

### **General Information**

Ringworm is the most common skin disorder of the kitten. This fungi invades the superficial outer layers of the skin, nails, and hair.

The classical signs of ringworm are circular areas of hair loss with scaly skin at the center, and an advancing red ring at the margin.

Ringworm fungi are contagious to humans as well as other animals.

### **Treatment**

Mild cases of ringworm can be treated by clipping away the infected hair at the margins of the ringworm patch. Bathing the area in Casteen or Betadine shampoo will remove dead scales. Fungistatic cremes (Conofite) can be applied as a topical solution.

Spores must be eliminated from the premises to prevent further reinfection. Clothing and animal bedding can be washed in Clorox bleach: Vacuuming will remove infected hair from the premises.

Resistant cases of ringworm may require oral antifungal drugs given with direction of a veterinarian.

## KITTEN MORTALITY

Many factors play a part in kitten mortality. Kittens born on the streets are subjected to influences that can significantly reduce their chances of survival. When they are born to malnourished or ill mothers, their risk of congenital or inherited defects is heightened.

Poorly nourished kittens have little defense against disease and infection.

Despite the best efforts at emergency care, proper nutrition, attention to cleanliness, correct diagnostic and medical treatment, and detailed record keeping, some kittens die.

The death of a kitten can be an emotionally disturbing experience to a volunteer who has cared for the kitten. It is important to understand and accept that some kittens will not survive. What we can do for these kittens, is surround them with warmth and care, and make their passing as comfortable as possible.



## INDEX

Afrin Pediatric 19  
anemia 14, 17  
antibiotics 19  
antibodies 3  
artificial tears 14  
aspiration 10  
average weight 3  
Betadine 20  
birth weight 2  
blood sugar 4  
bottle feeding 11  
burping 11  
butterfly needle 6  
Casteen 20  
chilling 4  
chloride 6  
coccidia 17  
colostrum 3  
comatose 2  
commercial formulas 8  
conjunctivitis 19  
Conofite 20  
dehydration 5  
diarrhea 13  
digestive system 13  
ear mites 15  
ears 3  
electrolytes 6  
emergency care 4  
emergency supplement 6  
external parasites 14  
eyedropper 12  
eyes 3  
fading kitten 19,20  
FCV 18  
feeding methods 9  
feeding problems 13  
FeLV 19  
FIP 20  
fleas 14  
formula 8  
formula computation 8  
fungal disease 20

## Neonatal Kitten Care

FVR 18  
giardia 17  
gruel 12  
hookworms 17  
hypoglycemia 4  
hypothermia 4  
internal parasites 16  
Just Born 8  
kaopectate 13  
karo syrup 6  
kidneys 8,13  
kilocalories 8  
kitten disease 18  
kitten mortality 21  
KMR 8  
lice 15  
miticide 16  
Mycodex 14  
neonatal 2  
Nurturall 8  
nutritional care 8  
nutro-cal 6  
overfeeding 13  
pedialyte 6  
pneumonia 10  
potassium 6  
protozoa 17  
rectal temperature 3  
rehydrating 7  
ringer's lactate 6  
ringworm 20  
roundworms 16  
sodium 6  
subcutaneous infection 6  
suckling 11  
tapeworms 17  
temperature 3  
Terramycin 14,19  
tube feeding 10  
underfeeding 13  
urination 12  
warming techniques 5  
weight 2

# CHARTS

Feeding Schedule

Weight Chart

Progress Chart

m

e

m

o





