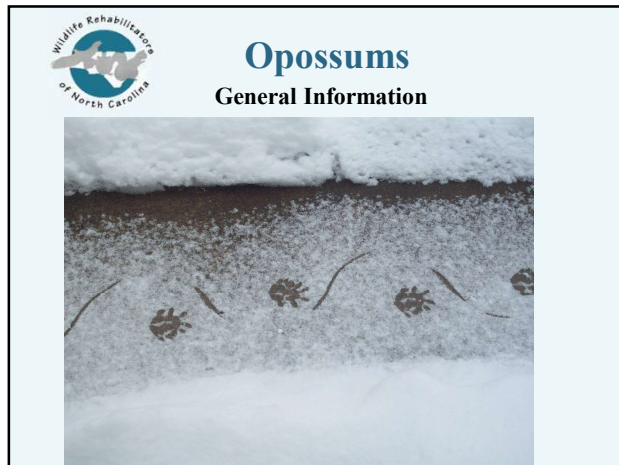




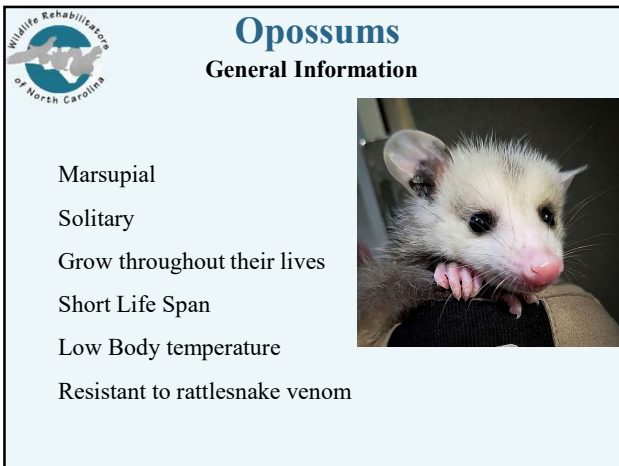
# Opossums

1



# Opossums General Information

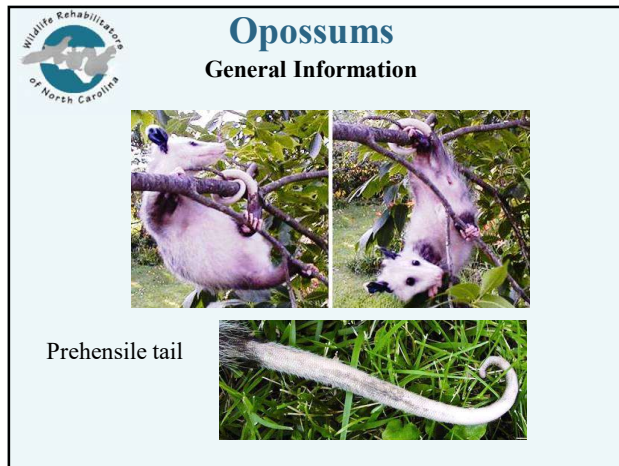
4



# Opossums General Information

- Marsupial
- Solitary
- Grow throughout their lives
- Short Life Span
- Low Body temperature
- Resistant to rattlesnake venom

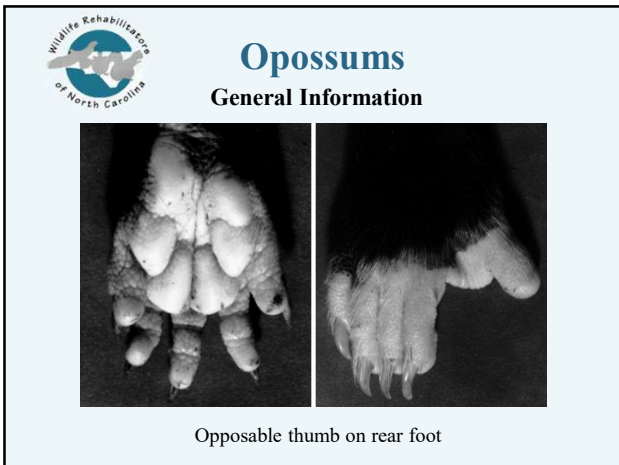
2



# Opossums General Information

Prehensile tail

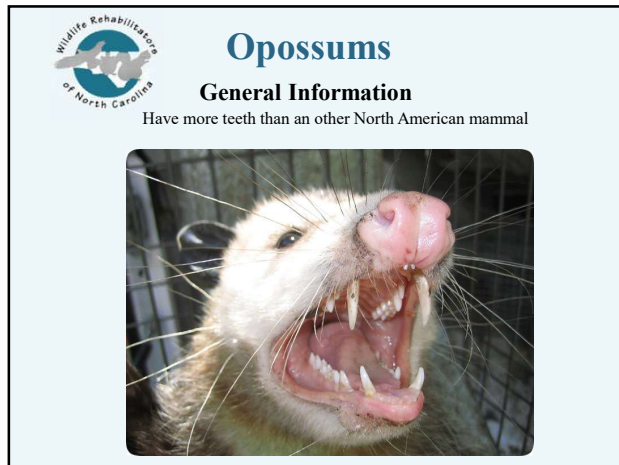
5



# Opossums General Information

Opposable thumb on rear foot

3



# Opossums General Information

Have more teeth than an other North American mammal

6



## Opossums

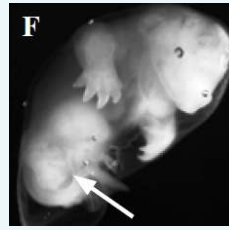
### Stages of development in the wild

- Born after only 13 days in uterus
- Blind, hairless and partially formed
- Crawl from vulva to the mother's pouch
- Attach to a nipple
- Remain attached for more than two months
- Begin to leave pouch
- Weaned and fend for themselves

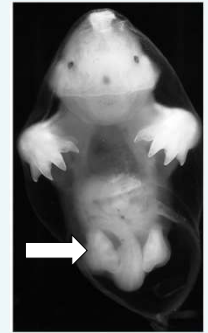
7



## Opossums



11-day gestation

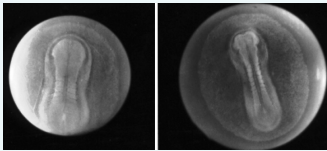


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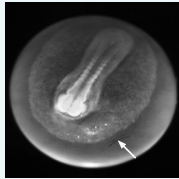


## Opossums

### Birth



8 day gestation

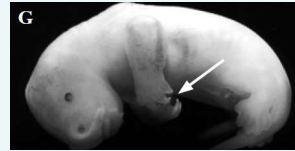


9 day gestation

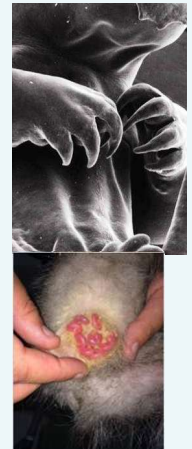
8



## Opossums



12-day gestation

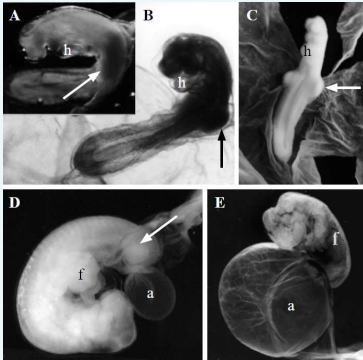


11



## Opossums

### Birth 10-11 day gestation

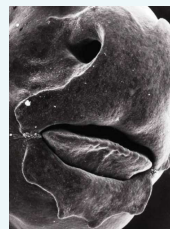


9



## Opossums

### 13-day gestation, just prior to birth

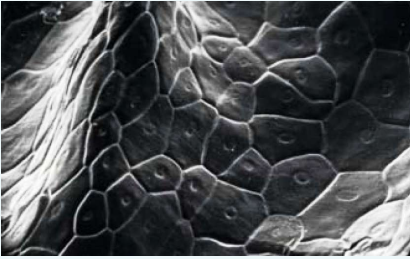


Snout



12

 **Opossums**  
Birth



Periderm covering external surface of newborns

13

 **Opossums**

20-25 days




16

**Opossums**



**1-2 DAYS OLD**  
bean-sized, forelimbs more developed than hind limbs

**15 DAYS OLD**  
Hind limbs more developed, ears starting to develop



14


 **Opossums**




17

 **Opossums**

10-15 days

15

 **Opossums**

25-30 days




18




**1 MONTH**

Hair becomes visible, eyes and mouth still closed

19



**Opossums**

45-50 DAYS OLD



22



**Opossums**



20




**Opossums**

60 days

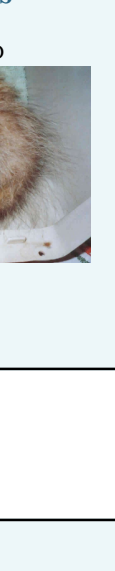


23



**Opossums**

40-45 days



21



**50-71 DAYS OLD**

Eyes begin to open, mouth closed at corners, well-furred



**76-80 DAYS OLD**

Mouth open, eyes open, well-furred, can freely leave and re-enter pouch



24




**80-100 DAYS OLD**

Weaned from mother, independent and can be released

CREATED BY: SARA COLIN  
 Information: Cutts, H., Krause, W. J., & Leeson, R. (1978). General observations on the growth and development of the young pouch opossum, *Didelphis virginiana*. *Neonatology*, 33(5-6), 264-272.




25




**Opossums**

Eyes closed, light covering of hair



- House in a warm *humid* environment (damp wash cloth, paper towel or sponge)
- Small container with ventilated lid (aquariums, plastic tubs, crab boxes)
- Heating pad set on low under half of the container
- Provide pouch like sweat pants leg, heating pad cover or sewn flannel
- Lanolin or olive oil can be used on tail to prevent dryness


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**Opossums**

**Housing & Care**


26



**Opossums**


60 – 65 days

Older infants



Move to a larger box  
 Provide a nesting box or hammock

29




**Opossums**

Hairless embryos (pinkies)

Transfer to the pouch of a lactating female with comparable size young if one is available

**Do not try to raise outside of pouch**



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**Opossums**

Eyes opening, becoming well-furred



30



## Opossums

Eyes open, becoming well-furred



31



## Opossums

Minimum Standards

	<u>Infant care</u>	<u>Nursing/Pre-weaned</u>	<u>Juvenile</u>
Opossums	(L) 10 GAL	(L) 3x3x3	(1) 4x4x8

34



## Opossums

Eyes open, becoming well-furred

- Discontinue heat when thermo regulating
- Large wire cage or screen covered aquarium
- Provide nest area
- Discontinue humidity

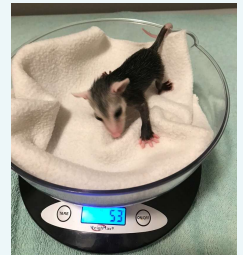
32



## Opossums

Weighing and Record Keeping

- Be prepared to keep good records/daily weighing
- Can you build a pre-release cage?
- Rehabbing babies to release could be 10-12 weeks
- Planning and finding a GREAT site to release when they reach 2.5-3 pounds



35



## Opossums

Weaned and able to thermo regulate

- Outdoor cage with nest box  
Large enough to allow exercise  
Branches and hollow logs
- Secluded area
- Food & latrine located to promote exercise



33



## Opossums

# Feeding

36

Wildlife Rehabilitators of North Carolina

## Opossums Feeding

		% Protein	% Carbo
Barker, et al.		8.4	1.6
Jeness and Slo		4.8	4.1
1 Esbilac + M	21.7		2.3
1 Esbilac+WCrean	20.6	12.5	4.5
	H <sub>2</sub> O		2.5

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Wildlife Rehabilitators of North Carolina

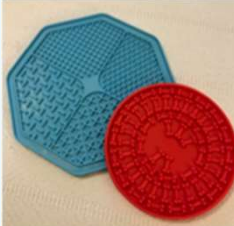
## Opossums Amount to Feed

Infants initially fed every 3 hours, eyes open 4 times per day

Feed 50cc per kg (.05cc per gram)

Should start lapping by around 40-50 grams. Some encouragement may be needed.

Try a lick pad to get them lapping




40

Wildlife Rehabilitators of North Carolina

## Opossums Feeding: Under 150g

32/40



1 + 1 + H<sub>2</sub>O

1 1 6

38

Wildlife Rehabilitators of North Carolina

## Opossums Amount to Feed

This is a guide to show the amounts the babies should be fed each day based on weight. Once lapping, formula should be available to them at all times.


WEIGHT in GRAMS	FREQUENCY and APPROXIMATE AMOUNT OF CC'S	TOTAL AMT. of CC's per DAY	NOTES
25g-30g	Every 3 hours= 6 times a day 1.00 cc to 1.50 cc	6-9cc a day	Tube feed
30g - 45g	Every 3 hours=6 times a day 1.50 cc to 2.50 cc	9-15cc a day	May begin lapping from syringe. If not, continue tube feeding
*30g - 40g	<i>Babies should eat easily from a syringe</i>		
45g- 60g	Every 4-5 hours=5 times a day 2.50 cc to 3.00 cc *Learning to lap from a dish	10 to 15 cc a day	*Make sure babies are eating enough from a dish. Syringe feed those that need syringing off
*45g- 60g	<i>Start teaching babies to lap formula from a dish. Continue to tube feed until babies show interest in lapping. Wash and refill dish 4-5 times in 24 hours.</i>		
60g - 70g	Every 6 hours = 4 times a day 3.00 cc to 3.50 cc	12 to 14cc a day	Keep fresh formula available at all times. You may need to refill bowls more often until you figure out how much your group will eat a day.
70g - 80g	Every 6 hours =4 times a day 4.0cc	16 cc a day	Keep formula available
80g - 90g	4 times a day 5.0cc	20cc a day	Keep formula available.
90g - 100g	3 times a day 6.0cc	18cc a day	Keep formula available
100-300g	When babies are lapping well from a dish, begin the opossum pudding on the next page. Have a separate dish of crushed dry Purina Beyond dry dog food available at all times. Give fresh water morning and night.		
300-400g	Begin to withdraw pudding and introduce opossum stew (recipe on following pages) and solid foods... veggies first, protein with bone, yogurt and a very small amount of fruit (veggies), etc. See suggestions for solid food on next page. Continue to have dry dog food available at all times. Give fresh water morning and night.		

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Wildlife Rehabilitators of North Carolina

## Opossums Feeding: Over 150g

25/30



1 + H<sub>2</sub>O

1 2

39


Wildlife Rehabilitators of North Carolina

## Opossums Feeding

### Formula Preparation & Storage

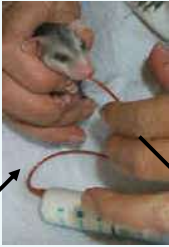
- Mix fresh daily, refrigerate between feeding, heat only amount used per feeding, discard unused warm formula
- Heat over hot water, don't boil or heat in microwave
- Test temperature of formula. It must be warm
- Don't use same feeding implement across litters
- If water quality is poor, use distilled water

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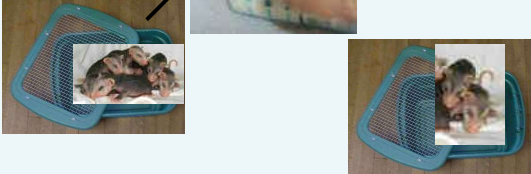


## Opossums


**Feeding**



**Use 2-box or 2-pouch procedure**



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## Opossums


### Tube Feeding

How to do it?

Learn how to insert feeding tube from someone who is experienced

If done improperly injury and death can result

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## Opossums


### Tube Feeding

Why use it?

Used for infants, adolescents or adults unwilling or unable to eat



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## Opossums

### Tube Feeding Procedure

- Do other procedures first (weighing & meds)
- Stimulate
- Measure tube and mark with Sharpie or tape
- Draw up formula into syringe, attach tube to syringe
- Prime the tube (push plunger to fill tube with formula and remove air bubbles)
- Insert tube into opossums mouth gently to your mark
- Test – depress plunger and watch for any formula or bubbles from opossums nose or mouth – **there should NOT be any**
- Express the proper amount of formula into stomach
- Pinch tube and extract
- Make sure to clean tube & syringe thoroughly

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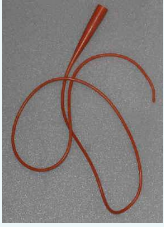


## Opossums


### Tube Feeding

What experienced rehabbers use


For infants up to 60 days (eyes closed) use a syringe with a French size 3.5 feeding tube or 2.8 umbilical catheter single lumen feeding tube attached



After 60 days (eyes open) can use a syringe with a French size 5 feeding tube attached



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## Opossums

### Formula Preparation & Storage

Mix formula and refrigerate for 8 hours. Formula can then be frozen in ice cube trays (will last up to 2 months). Refrigerated formula will last 3 days.

Can slightly warm formula used per feeding, discard unused warm formula. However, lapping babies don't need formula to be warmed.

If warming up, use a hot water bath, don't boil or heat in microwave.

Don't use same feeding implement across litters.

If water quality is poor, or if you have a water softener or city water, please use distilled water .

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## Opossums Weaning

Formula mixed with vegetables (bok choy is a good choice) and other ingredients – recipe below. You can also start cutting up veggies and letting them start solids. Fruit on occasion, papaya is a good choice (calcium rich).

### After straight formula: Make Possum Pudding (approx. 150g)

- 2 cups of mixed formula
- One jar of chicken baby food
- 1 cup of frozen or fresh veggies (start with bok choy)
- One whole raw egg with the shell
- Yogurt, plain: one healthy tablespoon
- About ½ cup dry dog or cat food
- Blend all together in a food blender
- Be creative and add one or two new types of veggies next time you make a batch, remember to add variety slowly as not to upset tummies.
- 200mg calcium supplement

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## Opossums Eating solids

- Frozen mice and cockerels
- Broccoli, cauliflower, cucumber, kale, zucchini, peppers, asparagus, tomato, mushrooms
- Dark greens, like kale, spinach and collard greens: cooked or raw
- Cheese: swiss or ricotta is best, mozzarella
- Organs: livers and hearts-raw with blood high in iron and essential amino acids (only occasionally)
- Fish heads, raw or whole, frozen smelt
- Chicken with bones, or chicken necks
- Dandelion greens with roots and flowers
- Raw or cooked eggs with shell
- Tuna, salmon, sardines
- Crickets, mealworms, etc

It is totally acceptable to occasionally feed formula and/or possum pudding well after eating solids. It is a healthy choice with a good amount of calcium.

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## Opossums Eating solids







Having a good quality dog or cat dry kibble is critical. Cat food is higher in protein, try to stay below 30%. Dog food is 26%. When picking out a dry dog or cat food, it is recommended that the food has salmon or chicken as the first ingredient. If using dog food, we like to add some taurine to it. Cat food has taurine. Please limit the amount of dry kibble that they eat. You will use this in the possum pudding and to keep in a dish for them to nibble/crunch on. If you find your possums are eating too much, limit the amount or remove periodically.




50



## Opossums Natural Diet

- Insects 
- Mushrooms 
- Fruit 
- Bird eggs 
- Mice 
- Snakes 



53



## Opossums

### Eating solids

- At about 250g or so, start feeding some solids
- Limit fruits (low in calcium/high in sugar)
- Do not include meat without bones
- Good Options: Ground chicken with bone and/or organs, whole prey items like mice, fish and snakes

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## Opossums

### Release

- Wary of people and afraid of dogs
- Size and weight guidelines 2.5 – 3 lbs
- Consider weather conditions
- Site selection
- Release at dusk



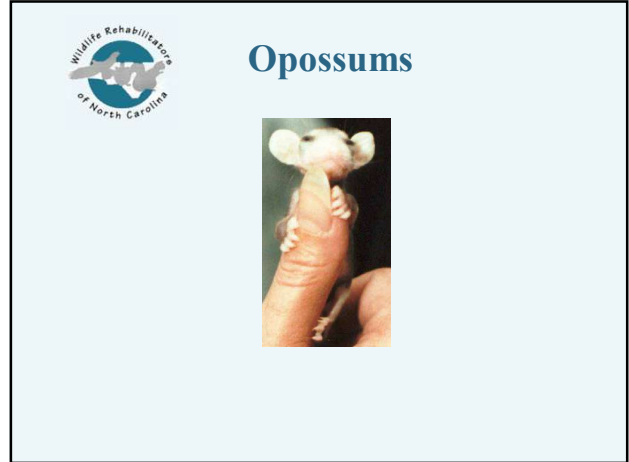
54



**OPOSSUM RELEASE SITES**

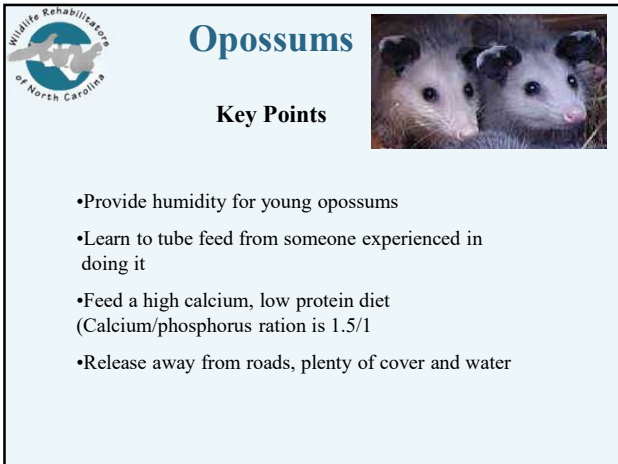
**LOTS OF COVER  
WATER SOURCE  
SECLUDED  
AWAY FROM ROADS  
AWAY FROM PEOPLE  
FOOD SOURCES**

55



**Opossums**

58



**Opossums**

**Key Points**

- Provide humidity for young opossums
- Learn to tube feed from someone experienced in doing it
- Feed a high calcium, low protein diet (Calcium/phosphorus ration is 1.5/1)
- Release away from roads, plenty of cover and water

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**Opossums**

**The End**

**I'm not lazy, I'm just playing dead until the weekend.**

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**Opossums**

57

<b>How to Determine the Age of an Opossum</b>			
<p><b>Age</b> Birth – 1 week</p> <p><b>Appearance</b> Pink, hairless, embryonic, eyes closed</p> <p><b>Behavior</b> Crawls to pouch and latches on to nipple</p> <p><b>Weight</b> 5-10 grams</p>		<p><b>Age</b> 6-7 weeks old</p> <p><b>Appearance</b> Eyes and mouth opens, becoming more furred</p> <p><b>Behavior</b> May begin to explore once eyes open</p> <p><b>Weight</b> 25-30 grams</p>	
<p><b>Age</b> 1-2 weeks old</p> <p><b>Appearance</b> Pink, hairless, eyes closed</p> <p><b>Behavior</b> Purposeful movements, but still quite embryonic</p> <p><b>Weight</b> 10 - 15 grams</p>		<p><b>Age</b> 8-9 weeks old</p> <p><b>Appearance</b> Fully furred, black, sleek</p> <p><b>Behavior</b> Becoming more active, enjoy 'happening' with each other</p> <p><b>Weight</b> 30-40 grams</p>	
<p><b>Age</b> 2-3 weeks old</p> <p><b>Appearance</b> Skin begins grey, whiskers begin to appear</p> <p><b>Behavior</b> "Sneeze" for mom's attention</p> <p><b>Weight</b> 15 - 20 grams</p>		<p><b>Age</b> 10-12 weeks old</p> <p><b>Appearance</b> Start to get white guard hairs</p> <p><b>Behavior</b> Able to climb in cage and eat independently</p> <p><b>Weight</b> 40 - 55 grams</p>	
<p><b>Age</b> 4-5 weeks old</p> <p><b>Appearance</b> Skin darkens, fur begins to appear, eye slit appears</p> <p><b>Behavior</b> Newborn behavior -- mostly sleeping</p> <p><b>Weight</b> 20 - 25 grams</p>		<p><b>Age</b> 13-20 weeks old</p> <p><b>Appearance</b> Looks like a mini adult opossum</p> <p><b>Behavior</b> Very active, especially at night, should begin gaining a fear of humans</p> <p><b>Weight</b> 55 - 450 grams</p>	

60