



Opossums





Opossums

General Information

Marsupial

Solitary

Grow throughout their lives

Short Life Span

Low Body temperature

Resistant to rattlesnake venom





Opossums

General Information



Opposable thumb on rear foot



Opossums

General Information





Opossums

General Information



Prehensile tail





Opossums

General Information

Have more teeth than an other North American mammal





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

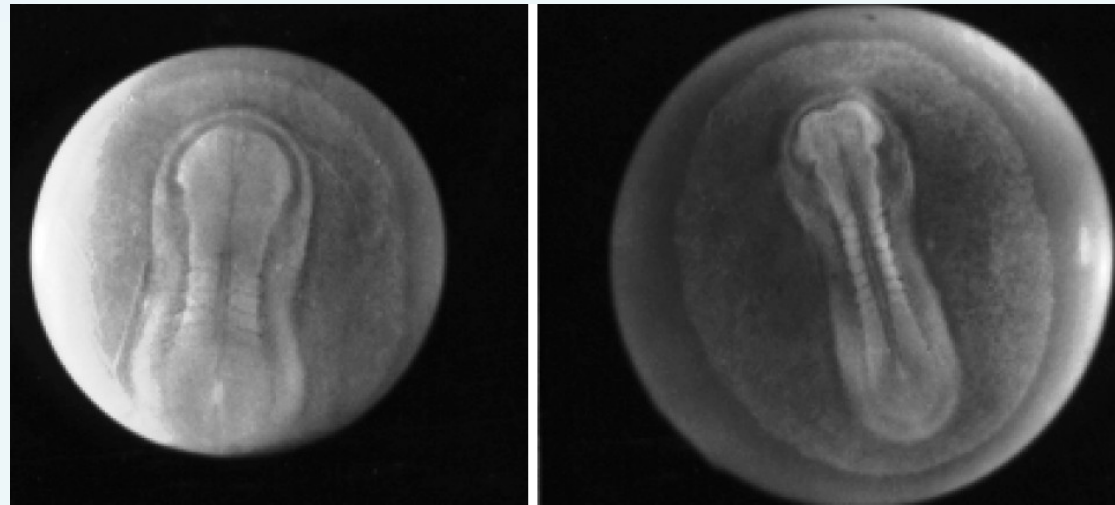
Begin to leave pouch

Weaned and fend for themselves

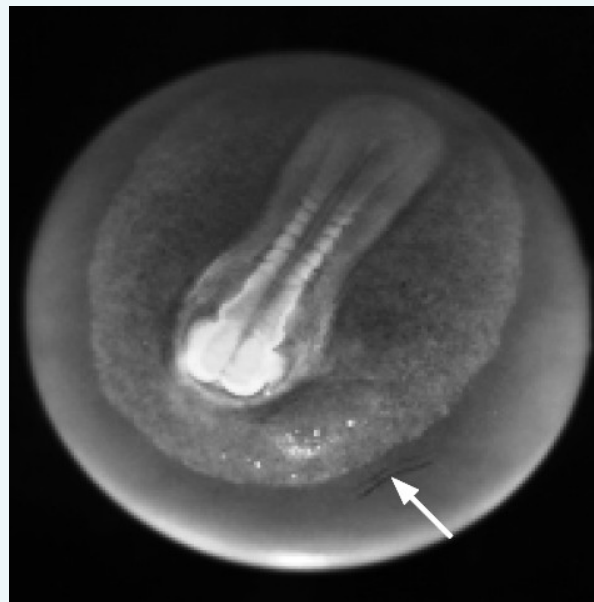


Opossums

Birth



8 day
gestation

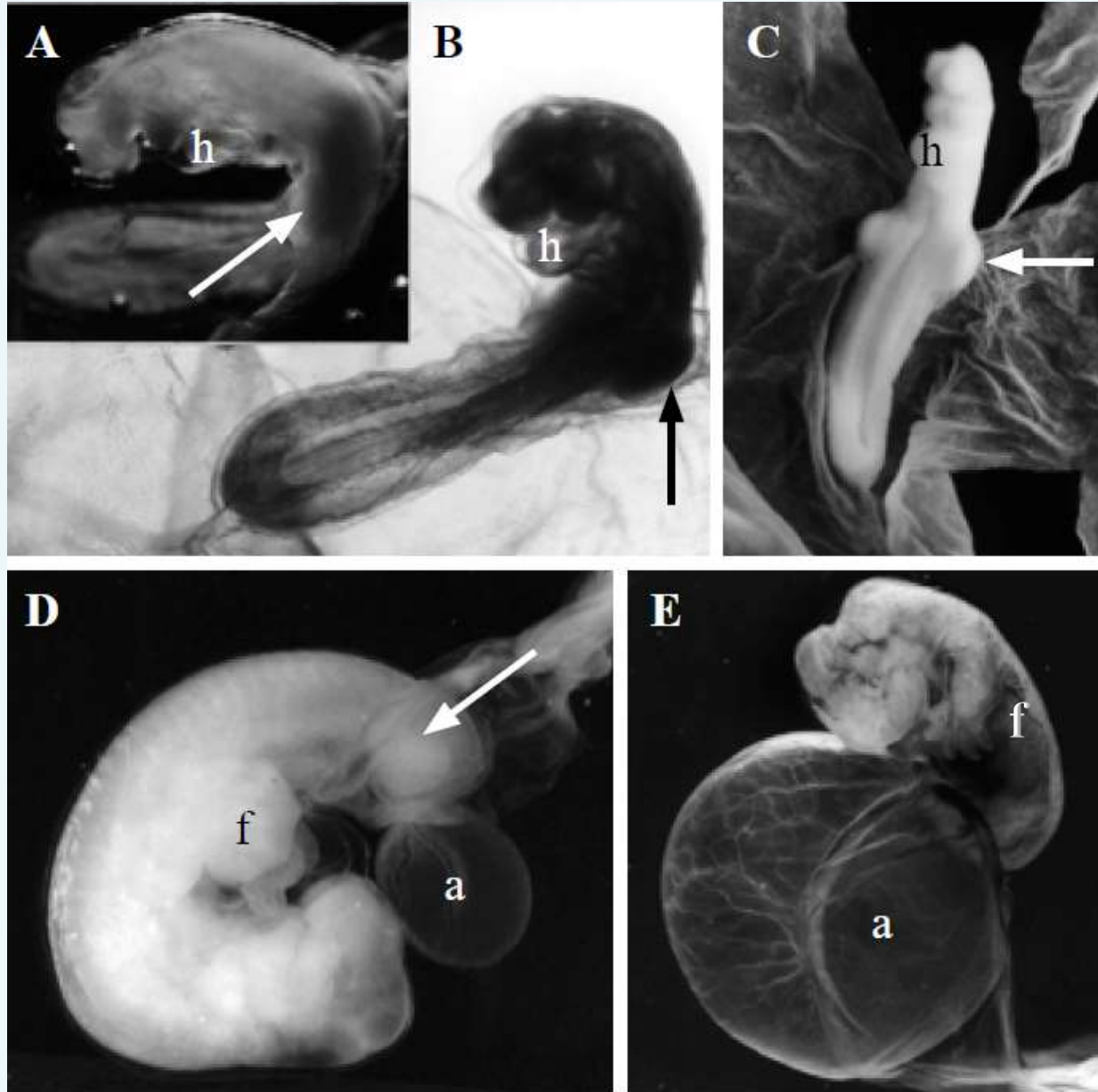


9 day gestation



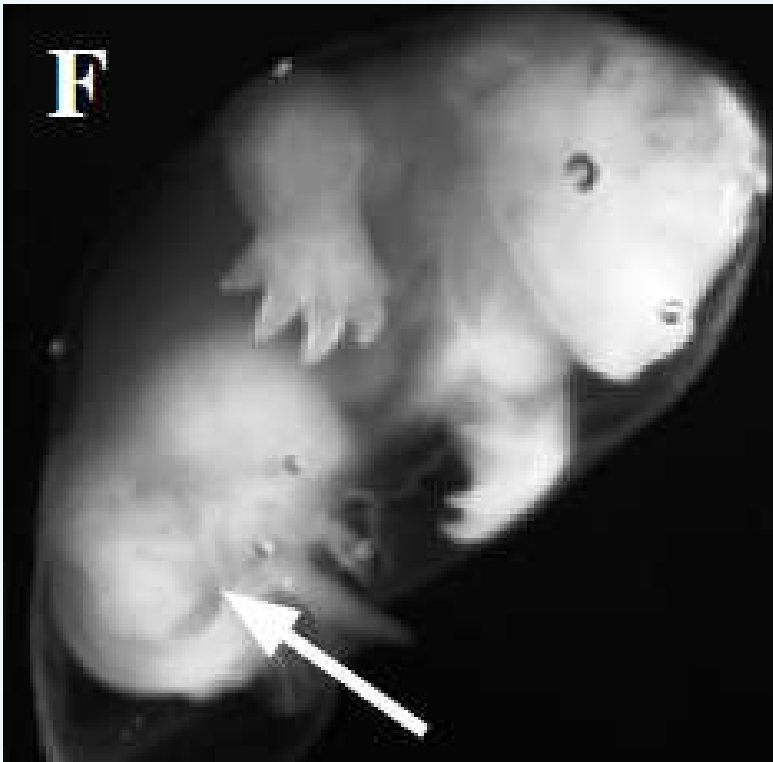
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Birth 10-11 day gestation

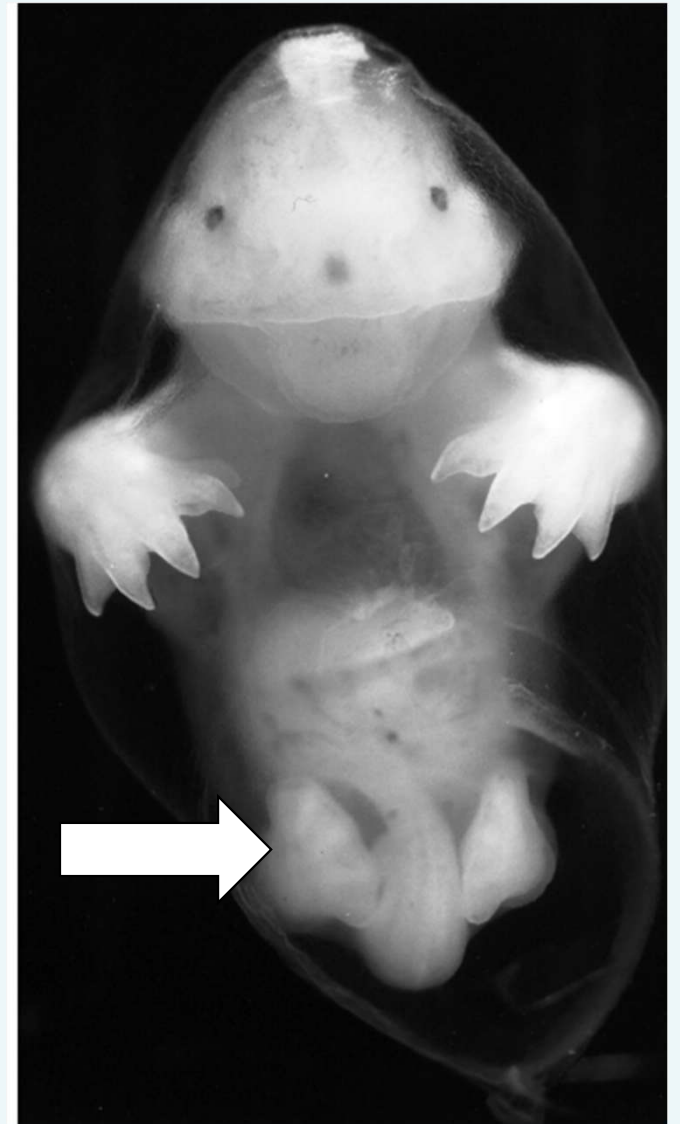




Opossums

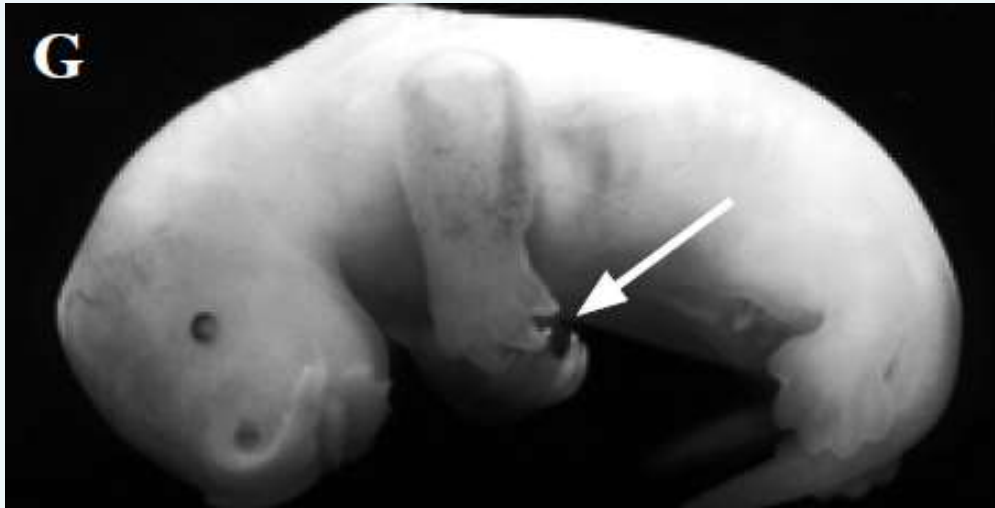


11-day gestation





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12-day gestation





Opossums

13-day gestation, just prior to birth



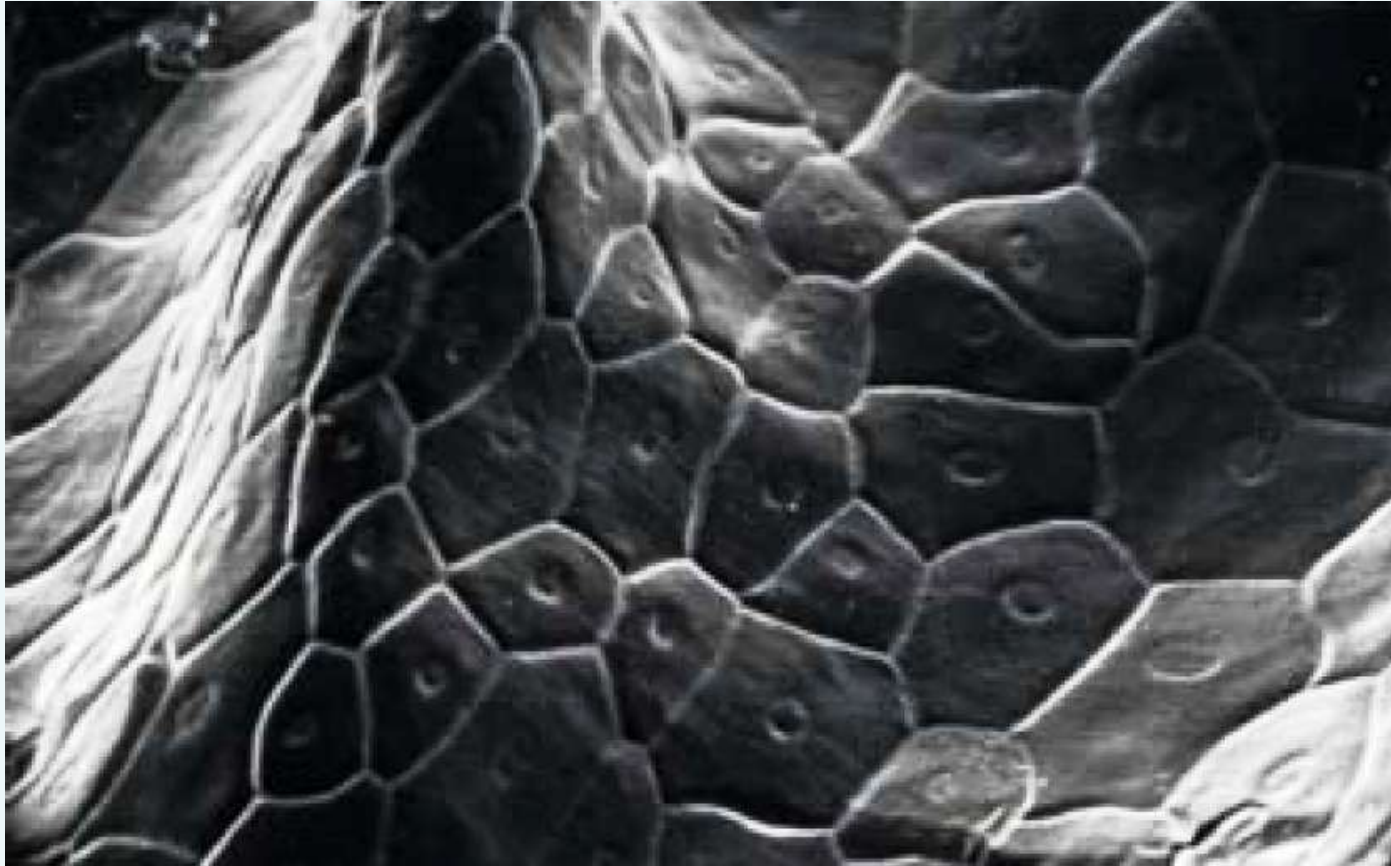
Snout





Opossums

Birth



Periderm covering external surface of newborns

Opossums



1-2 DAYS OLD

bean-sized, forelimbs
more developed
than hind limbs

15 DAYS OLD

Hind limbs more
developed, ears
starting to develop





Opossums

10-15 days





Opossums

20-25 days





Opossums





Opossums

25-30 days





1 MONTH

Hair becomes visible,
eyes and mouth still
closed



Opossums





Opossums

40-45 days





Opossums

45-50 DAYS OLD





Opossums

60 days



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



Hemera Technologies

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.





Opossums

Housing & Care



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





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



Opossums

60 – 65 days

Older infants



Move to a larger box

Provide a nesting box or hammock



Opossums

Eyes opening, becoming well-furred





Opossums

Eyes open, becoming well-furred





Opossums

Eyes open, becoming well-furred

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



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





Opossums

Minimum Standards

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



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





Opossums

Feeding



Opossums

Feeding

		<u>% Protein</u>	<u>% Carbo</u>
Barker, et al.	3	8.4	1.6
Jenness and Slo		4.8	4.1
1 Esbilac + 1	21.7		2.3
1 Esbilac+WCream + H ₂ O	20.6	12.5	2.5





Opossums

Feeding: Under 150g

32/40



+



+

H₂O

1

1

6



Opossums

Feeding: Over 150g

25/30



+ H₂O

1

2



Opossums

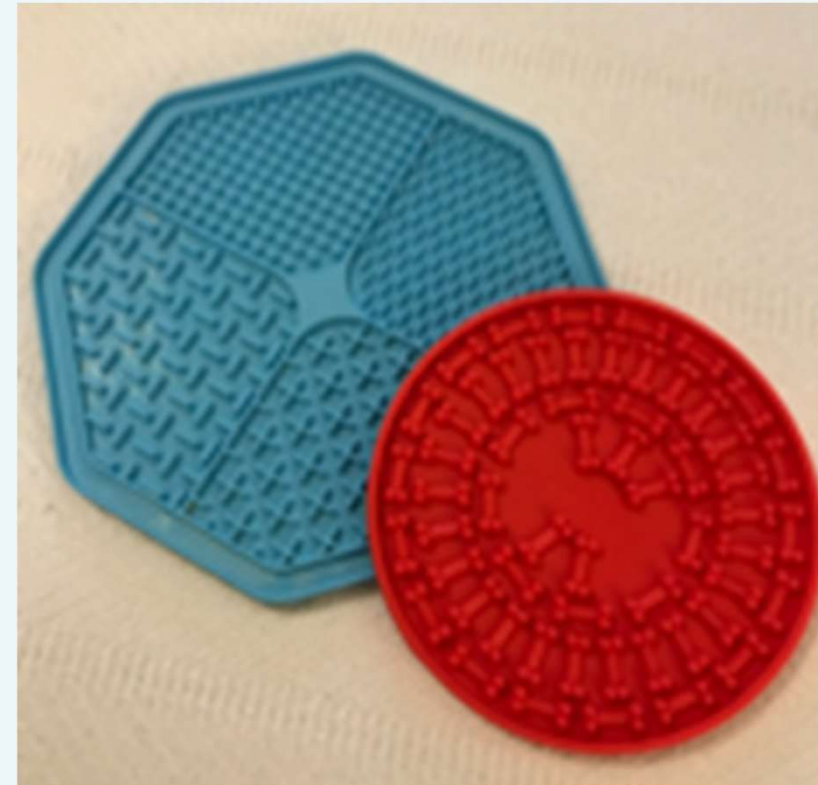
Amount to Feed

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





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
<i>*30g - 40g</i>	<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 <i>*Learning to lap from a dish</i>	10 to 15 cc a day	<i>*Make sure babies are eating enough from a dish. Syringe feed those that need topping off</i>
<i>*45g- 60g</i>	<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 (treats), 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.		



Opossums

Feeding

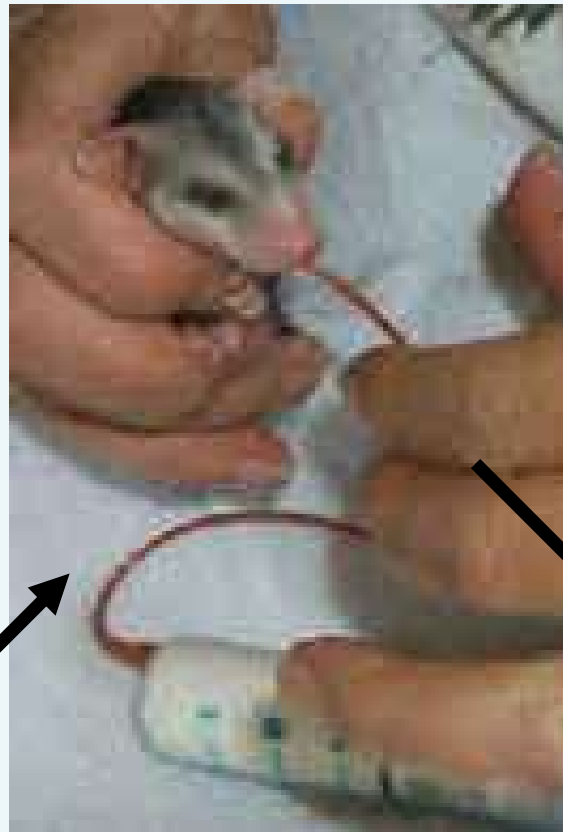
Formula Preparation & Storage

- 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



Opossums

Feeding



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





Opossums

Tube Feeding

Why use it?

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





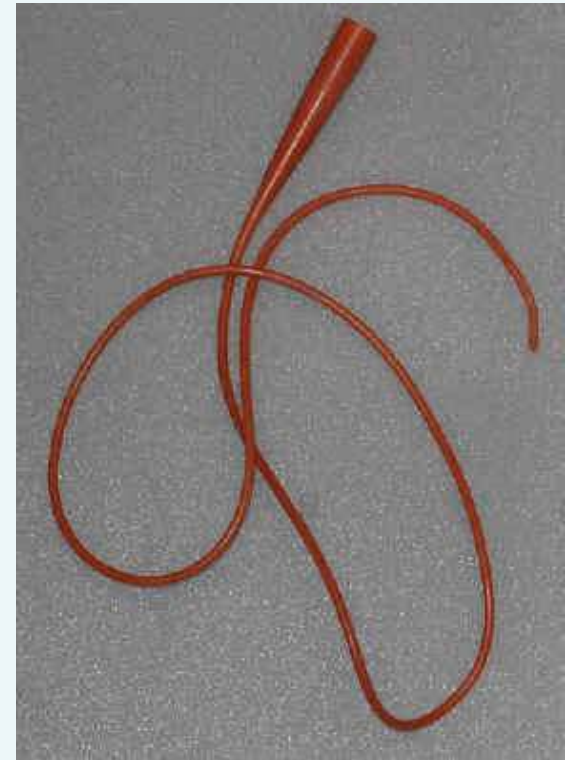
Opossums

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





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



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 possums mouth gently to your mark

Test – depress plunger and watch for any formula or bubbles from possums 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



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 .



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



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.





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



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.



Opossums

Natural Diet

Insects

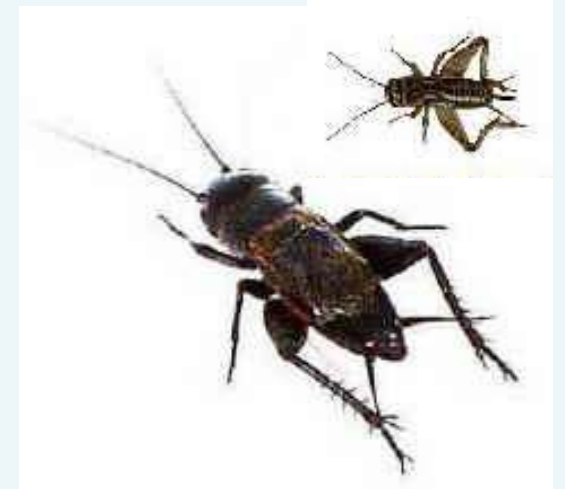
Mushrooms

Fruit

Bird eggs

Mice

Snakes





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





OPOSSUM RELEASE SITES



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



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



Opossums





Opossums





Opossums

The End

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



How to Determine the Age of an Opossum

Age	Birth – 1 week
Appearance	Pink hairless, embryonic, eyes closed
Behavior	Crawls to pouch and latches on to nipple
Weight	5-10 grams



Age	6-7 weeks old
Appearance	Eyes and mouth open; becoming more furred
Behavior	May begin to explore once eyes open
Weight	25-30 grams



Age	1-2 weeks old
Appearance	Pink, hairless, eyes closed
Behavior	Purposeful movements, but still quite embryonic
Weight	10 - 15 grams



Age	8-9 weeks old
Appearance	Fully furred- black, sleek
Behavior	Becoming more active, enjoy "wrestling" with each other
Weight	30-40 grams



Age	2-3 weeks old
Appearance	Skin begins grey, whiskers begin to appear
Behavior	"Sneeze" for mom's attention
Weight	15 - 20 grams



Age	10-12 weeks old
Appearance	Start to get white guard hairs
Behavior	Able to climb in cage and eat independently
Weight	40 - 55 grams



Age	4-5 weeks old
Appearance	Skin darkens, fur begins to appear, eye slit appears
Behavior	Newborn behavior – mostly sleeping
Weight	20 - 25 grams



Age	13-20 weeks old
Appearance	Looks like a mini adult opossum
Behavior	Very active, especially at night; should begin gaining a fear of humans
Weight	55 - 450 grams

