



What to Expect when Your Rat is Expecting

Pregnancy

Diet

Pregnant or nursing females--and the growing babies--need a higher protein diet to support their rapid growth and milk production.

If you're already feeding a good diet (lab blocks, SueBee's mix, fruit and vegetables), you can supplement that with a few readily available items that add the protein they need.

1. **KMR – Kitten Milk Replacer** or **human baby formula** (*avoid soy formulas*) as a very good option!
2. **Baby Cereal** - The baby cereal is found in boxes in the baby food aisle. It's like oatmeal or rice cereal for adults, but it's very finely ground. Mix a little of it with the liquid formula, and let it sit a moment or two to absorb the liquid. You want a pudding-like consistency, not runny, but not so thick that the rats would have trouble swallowing it.
3. **Kitten Food** – you can either purchase a good quality dry or wet kitten food. Dry food can be offered as part of the mix of rolled grains, pasta, and cheerios type cereal that we recommend keeping available to mom at all times, in addition to the lab blocks. The wet food is nice because it can be used as a first food for the babies. You can also add the dry baby cereal to the canned kitten food mix (see recipe below).

Kitten Food Mush

Mix one can of kitten food with one scoop of the formula powder. (There's a small measuring scoop that should be in the formula can.) Use the scoop to measure out some of the baby cereal. Add enough water to keep the consistency about the same as the food was straight from the can. The water can be warm or cold - warm will help it moisten the dry ingredients faster. Just make sure you let the mix cool before feeding.

Serve this mix in small doses to the mom rat, several times a day. The babies will eat it when they get mobile enough, too. It will get dry and crusty if it sits, so experiment until you get a good serving size that they'll eat in a reasonably short time - say an hour. The remainder of the batch can be kept in an airtight container in the fridge until you need more. I'd dish it out a little early and let it warm up before feeding it.

Prepping the Nursery

Cage

When Mom is close to delivery, she needs to be separated from other rats. The nursery cage should be *single level* and have mesh or very fine wire spacing so the tiny pinkies can't wriggle through. Popular choices to house a new litter are a bin cage (see picture below) or glass tank with wire mesh top.



Nest

Mom will usually want to start nesting a few days before delivery. This varies and occasionally may not occur until hours before she gives birth. She may even build, tear down and rebuild again and again until the nest suits her.

You will want to provide mom with appropriate nesting materials. A box or igloo and strips of paper towel work very well. You can use fleece strips, but make sure the fleece doesn't have any holes in it that babies can get their little feet stuck in. Do not use any other type of fabric.

It is best not to put any hammocks in the nursery because otherwise mom may deliver in the hammock and the babies can roll out of a hammock.

Bedding

Bedding for newborns can be tricky. There are many types of bedding out there that seem like they would be appropriate, but have certain aspects that do not make them ideal nesting material.

Aspen *should not* be used as it has sharp edges and can possibly cut the newborns delicate skin.

Care fresh may look soft and comfortable but it produces a surprising amount of dust which can easily fill the babies lungs and cover their nostrils. It also can stick very easily to them and hurt their skin when mom goes to clean it off.

We have found the best type of bedding is strips of paper towel. The paper towel is light and dustless and makes spot cleaning very easy. It does not tend to stick to the pups and is easy for mom to move

around. You can also use a bottom layer of fleece, in place of or addition to the paper towel. Remember, do not use any other type of fabric and be careful of holes in the fleece: babies can get stuck in the holes, especially as the babies become mobile.

Birthing

Birth is a natural process and rats rarely need assistance through delivery. Normally the entire sequence will occur in 1-2 hours.

When Mom is close to giving birth there may be spotting. This can occur a day before, or the day of the birth. Often, with spotting, a litter can be expected to arrive within a few hours. However, excessive bleeding is not normal.

While in labor mom may hunch over or squeak and stretch out as her sides constrict. She may also try to clean herself as actual birth time approaches. To prevent stress she should not be disturbed. Watch for gasping and check her extremities to make sure they have good color. One by one the babies will make their way down the birth canal and be pushed out. They can be born either head first or rump first. Mom will help deliver the pup with her hands and teeth as needed. When a baby is born, Mom will lick the baby clean to clear off a membrane the babies are encased in and allow them to breath. This process is repeated over and over until the entire litter has been born.

After cleaning the newborn, she will ingest the afterbirth which is rich in protein. The movement and the sound of the pup will keep the mother from ingesting it. Warning: if a pup has been stillborn, the mother may ingest it after delivery.

Once Mom has had the babies you want to make sure she is as comfortable as possible to ensure that she can give her pups the best care

You can read more about birthing at http://ratguide.com/breeding/birth/labor_and_birth.php and labor emergencies at http://ratguide.com/breeding/birth/labor_emergencies.php

Raising a Litter

The First Two Weeks (0-13 Days Old)

Checking on Newborns

You want to start handling the pups as soon as possible, as early as day one. Some of this depends on the mom rat and what she will allow.

You want to check on the pups as soon as you can (within 24 hours) to see if any pups were injured during birth, have any obvious birth defects, and to make sure that the babies are being fed. You should count the number of pups. If any are stillborn, you should remove them. It is also beneficial to get the pups used to your smell early on. The best time to handle pups is when mom leaves to eat and drink. Remember Mom may be protective of the babies, so be prepared for her to nip, bite, or lunge at you.

If you have a protective Mom and you are afraid of being bitten, once you know the babies are okay you can hold off touching the pups for a day, maybe two to prevent stressing mom out too much. However you should still tempt her off her nest, and peer in to determine that everyone is fine and being fed.

* This is very crucial because if mom isn't producing milk, or may be refusing to feed her pups you'll need to make a decision within 24 hours of whether to remove the pups or not.

A "milk band" on a pup should be extremely visible. It is a whitish looking strip just under the skin of the baby, and looks like a lima bean.

Below is a picture of a baby with milk band. You can see it stretches almost across the whole belly, but is more prominent on his left side.



Handling

You should handle the babies DAILY and as early as possible. The first week, 30 minutes of holding the babies each day is plenty of time. When they're tiny, it's easy to socialize them because they just sleep on your lap but it does wonders for their temperament! Daily handling is the key to friendly, snuggly babies. It is best to lure mom away from the nest or remove her in a tissue box or pouch and pick up the babies.

You can read about their development here:

The first week http://ratguide.com/breeding/figures/birth_to_weaning_figure_1.php

The second week http://ratguide.com/breeding/figures/birth_to_weaning_figure_2.php

Cage Cleaning

Cage cleaning can be tricky business. You don't want to disturb mom's nest for the first few days if you can help it. The paper towel strips should help with this so you can spot clean.

After a few days it is best to clean the cage so bacteria do not build up. Odoban or diluted Simple Green are excellent choices. Make sure you have removed all the babies before cleaning (another reason it is important to know how many babies there are). Once the cage is clean, you can try to re-create a nest like the one the mother had. It usually resembles a big crater in the middle of the tissue.

Do NOT be alarmed if she covers her entire brood with bedding and then climbs over to look at you. She will only leave them like this for a short while until she decides it is time to re-arrange and settle them in. She may decide to move them all to a completely new area.

Diet

Nursing moms can have a lot of stress on their bodies especially depending on how many mouths they are feeding. Extra supplements and additional foods are required to keep her strong, and help her produce milk. As mentioned in the pregnant mom section above, kitten food should be added to her diet to increase her protein intake. Also, KMR or human baby formula (avoid soy) is a great source of protein and is a nice treat for mom. You can give her this every day in a bowl and let her lap it up until she seems full. (Make a mama mush with lab blocks and kitten food, too!) This is a good chance to let mom take a break from her pups.

Now is the time to get babies interested in trying out all sorts of human foods, so it's important to give mom lots of varied (healthy!) treats while they're nursing so they learn what is safe to eat and won't be afraid when they're older

The Third Week (14 – 21 Days)

Babies' eyes will open around two weeks old.

Handling

During this week the babies' ability to get around increases. Safety is now a major issue. They will begin to chase your hand and play with you, but they tucker out easy!

When removing the babies from their cage for play sessions, take care that the play environment is protected. Cover couches, or chairs having multiple cushions, with a sheet or blanket. This way the babies can't disappear between the cushions and get lost or squished. It is difficult to get a pup out of a couch and can sometimes require dismantling furniture. Be sure to **count** the babies every time you return them to the cage after play or cleaning.

After you open the cage for any reason do not look away. The babies (and the mother) can get out quicker than you can imagine. Make sure that all little toes and tails are away from the cage door when you are closing it and be sure to latch the cage securely.

Feeding

At about 15 days, the babies will begin eating solid foods, but will still nurse with Mom. You'll want to start trying real food, so that's where things like baby food, wet kitten food, lab block mush, and even solid things like kitten food and lab blocks come in! Just be careful to offer a variety and nothing too fatty or sugary so that they don't end up mal- or under-nourished.

A small tip about serving the kitten food mix and baby cereal - we find that the small sauce or jar lids work best. They have shallow sides that are deep enough to keep the food in, but not so high that the dish gets tipped over by the rat.

Cage

Because the babies are now mobile, they are able to climb ramps, and you can add hammocks and wheels for them to explore. You can also move them to a large cage as long as it has wire spacing less than ½". The babies will enjoy the extra space!

Sexing

When the babies are 10-12 days old you will be able to see nipples on the females. This is a great time to figure out which babies are boys and which are girls (boy rats do not have nipples). By 3 weeks of age the boys' testicles will descend and you should be able to tell them apart easily enough.

Some more help with sexing can be found at <http://www.afrma.org/sexing101.htm>

You can read more about their development during this time at http://ratguide.com/breeding/figures/birth_to_weaning_figure_3.php

The Fourth and Fifth Week

During this time Mom will completely wean the babies. You should make sure they have access to lab block at all times. They will also begin using the water bottles now, so keep an eye on them, they drain fast! The babies will become more active and outgoing as they become more independent. You will begin to get a sense of their personalities at this point.

You can read more about their development at http://ratguide.com/breeding/figures/birth_to_weaning_figure_4.php

Separating

Male babies become sexually mature at 5 weeks and can impregnate their mother so it is imperative you keep track of their age and remove all boys at 4 ½ weeks after birth. Female babies can get pregnant as early as 6 weeks of age. The girls can stay with their mother, but the boys will need to be moved into a separate cage at 4.5 weeks old!!