

# Compounding Medications

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What is compounding?

Compounding is the professional and scientific preparation of a customized prescription medication. With a compounding prescription from your veterinarian, a compounding pharmacy can take FDA-approved, and/or pharmaceutical-grade chemicals and compound them into the correct dosage and administration method for your pet. Compounding allows your veterinarian to prescribe a particular medicine, dosage form, or strength not commercially available; change the form of a medication in order to make administration to your pet easier; combine multiple medications into one; or flavor your pet's medication, making it more palatable.



How can a compounded medication benefit my pet?

Prepare the proper strength of medication: Many commercially available medications may not come in the strength your pet needs. Your veterinarian can prescribe a specific dosage that can be compounded.

Change the dosage form: Compounding pharmacies can make the administration of a medication easier by changing the form of the medication. For instance, medications in a tablet form may be compounded into a liquid form.

Provide some medications that are no longer available: Sometimes drug manufacturers discontinue certain medications, strengths, or dosage forms and there is no human equivalent available for your veterinarian to substitute. Working with a compounding pharmacy, your veterinarian can prescribe the specific dosage and medication your pet needs.

Combine multiple medications: In some cases, if your pet is on multiple medications, a compounding pharmacy can combine them into one medication making it simpler to administer your pet's prescriptions, and often saving you money.

Flavor the medication: Compounding pharmacies can prepare your pet's medication in a variety of flavors including beef, liver, chicken, tuna, cheese, sardine, bacon, fruits, vegetables, peanut butter, and many more; your pet will think he is getting a treat rather than medicine.

Are all medications able to be compounded?

Compounding is a useful and often necessary pharmacy practice. Unfortunately, not all medications can be compounded into all the different dosage forms due to any or all of the following reasons:

## Stability

A medication is only effective when its active ingredient(s) are stable and working. Not all of the dosage forms are capable of maintaining the active ingredient. For example, an antibiotic may be stable for one year when formulated into a tablet or encased in a capsule, but it may degrade to the point of being ineffective after only fourteen days as a suspension.

Another factor that can affect stability is the medication's interactions with active and inactive ingredients contained within the dosage form. Some medications are incompatible with the inactive ingredients most often used in compounding. Some medications cannot be combined with other active ingredients (e.g., another medication) because they will not remain stable.

## Solubility

Solubility is an ingredient's ability to dissolve completely in a liquid. Some medications are very soluble allowing a large amount of the active ingredient powder to dissolve in a very small amount of liquid. Products of this nature can be easily formulated into a concentrated solution that can then be flavored to make the final preparation more palatable. Some medications are so insoluble that even a teaspoonful of active ingredient would not dissolve in a swimming pool of water. In this case, the medication would not be suitable for compounding into a liquid form.

If an active ingredient is stable in liquid, it can be compounded into a suspension instead of a solution.



## Compounded Close-up: Methimazole



Methimazole, primarily prescribed in the treatment of hyperthyroidism in cats, is only commercially available in tablet form, often making it difficult to administer to cats. At the request of your veterinarian, many compounding pharmacies can compound methimazole into easier-to-administer forms, such as a tuna-flavored oral suspension your cat will eagerly lap up from a dosage syringe, or a transdermal gel you can massage onto the hairless front tip of your cat's ear for absorption through the skin.

In a suspension, the medication is first coated, preventing the active ingredient from sticking together, then added to the liquid. This process aids in the even dispersion of the active ingredient throughout the entire volume and more accurate dosing.



**Palatability**

Some medications are so bitter or metallic tasting that flavoring cannot cover the taste. Even though they may be suitable for any oral dosage form such as a tablet, they would be difficult to administer due to the taste. In this case, the medication could be incorporated into a hard gelatin capsule to prevent the taste buds from coming into contact with it.

**Legality**

Legal limitations exist that prohibit the compounding of certain medications. In most of these cases, the limitations are due to patents held by pharmaceutical manufacturers that prevent the use of the active ingredient or prevent the compounding of that particular medication in patented dosages or strengths.

What dosage forms are most commonly used in compounding?

For many medications, there are multiple dosage forms.

<b>Compounding Options and Benefits</b>		
<b>Dosage Form</b>	<b>Administration Method</b>	<b>Ease of Use</b>
<b>Suspensions/ Solutions</b>	<b>Oral</b> – Given via oral syringe or added to your pet's food for ingestion.	Multiple palatable flavors are available for your pet, including chicken, tuna, cheese, sardine, bacon, various fruits, vegetables, and peanut butter.
<b>Chewables</b>	<b>Oral</b> – The medication is mixed in a chewable treat base and can be flavored to your pet's preference.	A great flavored treat alternative.
<b>Capsules</b>	<b>Oral</b> – A solid drug form enclosed in a non-flavored, hard or soft gelatinous shell. Dosages are customized for your pet's specific needs.	Easy to swallow and masks bitter tastes. Some pet owners also request flavoring so that they can pull the capsule apart and sprinkle the contents on their pet's food. If your pet is taking multiple medications, they may be able to be compounded into just one capsule so you do not have to give several different pills or capsules.

<b>Concentrated Oils</b>	<b>Oral</b> – Given by dropper on your pet's tongue for ingestion.	Medications can be given in higher concentrations, meaning smaller volumes compared to traditional dosage forms. (e.g., some medicines can be given in as little as three drops on your pet's tongue). The oils can also be flavored.
<b>Ointments/Creams</b>	<b>Topical</b> – Typically rubbed onto the affected area of your pet's skin.	Targets affected areas and are easy to administer.
<b>Gels</b>	<b>Transdermal</b> – Simply rub a pre-measured amount onto a part of your pet's body with little hair, such as the inside tip of the ear or on the abdomen (dogs).	The medication is absorbed through the skin, allowing your pet to be given their medication without the fuss of oral dosages. ( <b>Note:</b> Care must be taken with this dosage form to protect the pet owner from possible self-contamination. Rubber gloves or finger cots should be used while applying this type of medication and hands should always be thoroughly washed after application.)
<b>Disintegrating Oral Tablets</b>	<b>Oral</b> – This is a melt-in-your-mouth tablet that dissolves in seconds and is readily absorbed through the tissues in the mouth.	This is a relatively new form of administering medication to your pet. The medication dissolves so quickly that it is difficult for your pet to spit it out. The medicine is then absorbed through the mouth where there is a good supply of saliva and good blood flow to get the drug rapidly into the body. These can be flavored, as well.

How can I find out if my pet's prescription can be compounded?

If you feel that your pet could benefit from having his or her prescription customized, you can check with a compounding pharmacy to discuss your options. Once you have the information on the possible dosage forms and alternatives available, discuss the options with your veterinarian, who can authorize the specific compounded prescription for you.