

# HRT Homebrew

A structured DIY MtF hormone guide by Anon

*Note: Planning on updating the guide with new equipment and methods. Information is still mostly usable though!*

## Introduction

Homebrewing your HRT sounds unsafe and expensive at first, but upon looking further into it, one can see that's not truly the case. Costs from therapists, doctors, and marked up pharmaceuticals can really add up! There's also the issue of endocrinologists, who barely deal with trans patients, that deny anything but spironolactone and oral estrogen. Yes, we will be getting many raw chemical components produced in China, but the same could be said of the US pharmaceutical industry. Why not pay thousands of times less for the same drugs? Sure, we can't perfectly replicate lab conditions, but we can stick to key safety and sterilization methods that mitigates almost all risk.

## Regimens

A number of different HRT regimens exist. I will be covering a few to let people choose which one fits them the best. Please note that these dosages are baselines and should not be taken as hard and fast rules:

### My Regimen (more or less)

1. Start with oral E (6mg) split between 2 - 3 pills every day. Bicalutamide (50mg) should be taken every day as well.
2. When you reach tanner 3 breast development, switch to estradiol cypionate injections (5mg, 0.25ml) taken every 10 days. Add progesterone (100mg) taken rectally via a gelatin capsule every night before bed.
  - a. At this point you could stop taking bicalutamide as progesterone will act as a slight AA and injections on their own can make for sufficient monotherapy. If still concerned about T, you may continue bicalutamide at a dose of 25mg or lower (I still do).
3. If breast growth is stalled, add in 2mg of oral E every day.

## Transdermal Monotherapy regimen

1. Start with only oral E (8 - 12mg) every day split between 2 or 3 pills.
2. Once tanner 3 breasts are achieved, switch to transdermal E. This will be distributed via a dropper onto the scrotum or armpits (0.1 ml, 2mg/12 hours, total of 4mg/day). It can be applied to other areas of the skin, but more will be needed in those cases. Progesterone (100mg) should be taken rectally every night as well.

## All-In-One Capsule (Experimental)

1. Take one capsule containing estradiol (2-3mg/day) and progesterone (100mg) rectally every night.

## Explanation

You may be wondering why we're starting with oral estradiol. After all, weren't we trying to escape endos that trap people with oral E? While that is true in the long run, oral estradiol produces more estrone since it gets metabolized through the liver. Estrone is theorized to help start breast growth. While it's mostly anecdotes that back this up for now, that's simply the nature of such an under-researched and niche area.

Another concern might be why I'm suggesting that you drop your anti androgen eventually or just not have one at all. Estrogen taken by itself in high enough doses can suppress T enough to where it reaches female norms, as it shuts down the gonads and the only T left is what's produced by the adrenal glands. Taking many anti-androgens for decades can start to wear on your liver, so we try to avoid that. Even though bicalutamide is considered fairly safe for long term use, it's best to cut out as many variables as possible while still getting the results we want.

You might notice that none of these regimens mention blood tests. I strongly recommend them, but they are not a hard requirement. Frequent blood tests can quickly become one of the most expensive parts of your transition, and this guide primarily caters to people who want as little to do with, or possibly have no access to, the medical/pharmaceutical industries. This is not a condemnation of blood tests, since there are situations where they really come in handy, but an assumption that you don't want to, or can't, get them. E monotherapy can be one such situation, since there isn't that anti-androgen cushion there to make sure T isn't further causing body masculinization. If you have an extreme variance in body weight, you may want to test to see if the recommended dosages suit you and adjust up for if you are very heavy/light (100lbs+- the average for your assigned gender at birth).

Why do I specifically mention Estradiol Cypionate for the injection ester? Estradiol Cypionate has a longer half life, which means you don't have to shove a needle in you as often. Valerate has a roughly 5 day injection cycle while cypionate can go up to 14 days. Such a short half-life results in larger spikes of estrogen, which can lead to mood swings. Another viable ester option is Enanthate, which has a similar half-life to Cypionate while being cheaper and arguably as potent. I simply stuck with cypionate, since there weren't many anecdotes for enanthate, and I already had a rhythm and dosage down for my own cypionate injections. Feel free to try out enanthate and share your findings!

## Materials

### Raws

These are the chemicals that must be ordered from the manufacturer outside of the US. Your best bet is by getting them through China via <https://www.alibaba.com/>. I used Hubei Vanz for my vendor, as they are a very old/well-reviewed manufacturer, a few other homebrewers have vouched for them, and their prices are pretty good. Below I have the chemicals I ordered along with the quantity and price. Please note that these are large quantities, and that you can order much less based on your needs and regimen, though the prices will increase/decrease based on you ordering small/bulk quantities. When ordering, you will be speaking to a manufacturer representative directly via text. Remember that they are Chinese and barely speak English outside of a business context. Make sure you clearly and plainly state the chemical name, the CAS number, and the quantity.

Update: Alibaba has taken down listings for many pharmaceutical chemicals. You can still make orders by contacting sellers directly though! They usually still use Alibaba for payment even.

To find the CAS number, simply search “chemical name CAS number” in any search engine:

- Bicalutamide CAS 90357-06-5 (100 grams)
  - \$150 total (\$1.50 per gram)
- Estradiol CAS 50-28-2 (30 grams)
  - \$90 total (\$3.00 per gram)
- Estradiol CAS 50-28-2 (100 grams)
  - \$230 total (\$1.80 per gram + 50 shipping to US)
- Progesterone CAS 57-83-0 (200 grams)

- \$160 total (\$1.25 per gram)
- Progesterone CAS 57-83-0 (500 grams)
  - \$320 total (\$0.64 per gram)
- Estradiol Cypionate CAS 313-06-4 (30 grams)
  - \$150 total (\$5 per gram)
- Domperidone CAS 57808-66-9 (20 grams)
  - \$60 total (\$3.00 per gram)

Again, note that the more you order at once, the better the prices you'll get. Feel free to customize your order to your needs. For example, if you just want to make injections, just get an estradiol ester of some kind. The raw hormone powder will have a near infinite shelf life as well if one keeps it away from light and at room temperature, as hormones are very difficult to degrade from a chemistry standpoint. This is also true for progesterone and the esters. The same can not be confidently said in regards to Bicalutamide, though I was assured it could last 3 years minimum without losing potency. How much potency would be lost after that, no one can really say.

## Chemicals

This list contains further chemicals/general ingredients that you can get off a mixture of online shopping or probably even the right local store. I'll be listing the exact links for what I'm purchasing, but feel free to deviate based on your price range and production scale:

- **Injections**
  - [Benzyl Benzoate](#) - Solvent for esterized hormones used in injections.
  - [Benzyl Alcohol](#) - Solvent and preservative for injections. Can be used as the lone solvent for non-esterized hormones, though take note that high concentrations, as well as non-esterized hormone injections, will cause a lot of skin irritation and pain.
  - [MCT Oil](#) - Carrier oil for injections. Its low viscosity makes for easier injections and filtering. This along with a long shelf life of ~7 years makes it my injection oil of choice. Those who want cheaper oil or have certain allergies can try out Castor, Grapeseed, etc.

- **Transdermal**
  - [99% Isopropyl Alcohol](#) - For dissolving Estradiol.
  - [Isopropyl Myristate](#) - A penetration enhancer that keeps skin wet and absorbing longer.
- **Oral powder and oil caps**
  - [Powder Filler](#) - For evening the ratio of raw material vs. pill weight to achieve the desired dose per pill. Coconut flour has a lengthy shelf life, but rice flour and many others will work just as well. This is another item that can be picked up at just about any local grocery store. Cellulose powder is another recommended filler due to its shelf life of 3 years, though it is more expensive.
  - [Oil Filler](#) - The same as above but in the form of an edible oil mostly for our rectal intake pills. We will be experimenting with coconut oil, as it solidifies at room temperature. This means that once inside the capsule, there will be less leaking pills.
  - [Gelatin Capsules](#) - For making the pills out of whatever raws you decide to put in them, whether they be oral or rectal. Gelatin is necessary for oil capsules, as they will otherwise melt. Powder can be used with vegan capsules if you need to.

## Tools

This list will cover tools and accessories used in our homebrew. Note that, like the last list, all of this can be gotten from online shopping and local stores:

- **General**
  - [Scale](#) - Used to measure out powders. It ideally should read down to 0.01 grams. You can get these at most smoke shops or seedy gas stations for like \$10 to \$15. Not necessarily needed if you already have, say a kitchen scale. This is especially true if you plan on doing larger batches and are measuring 5+ grams of raw powder at a time.
  - [Weighing Paper](#) - Used to hold powder while it is weighed and transferred. Optional and mostly for when your scale doesn't have a weighing tray. I use the paper for smaller measurements and a larger weighing tray for bulk measurements.
  - [250ml Borosilicate Glass Beaker](#) - For mixing and heating fluid. Can also be used for less precise measurements. Feel free to instead grab a [500ml](#) or [100ml](#)

variant based on your planned batch sizes. A mason jar or similar thermal-resistant container will work just as well.

- [250ml Graduated Cylinder](#) - For more precise measurements. Depending on your batch sizes, you may want to get a go with a [500ml](#) or [100ml](#) variant instead. Note that larger syringes can make a good replacement for this, and high precision measurements aren't fully required.
- [Glass Stirring Rod](#) - Used for stirring mixtures together. Glass is used in this case so that our oil solution doesn't stick to it and for an easier clean-up.

- **Injections**

- [10ml Glass Vials](#) - For storing injection fluid in a sterile manner. Make sure these vials adhere to the size your stoppers and caps are. The most common is 20mm size for stoppers, caps, and crimpers.
- [Vial Stoppers](#) - Used to create an airtight seal for your vial.
- [Vial Aluminum Caps](#) - Used to hold the stopper and vial together. I use flip top, but solid aluminum seals may lead to less complications during sterilization if using dry heat.
- [Vial Crimper](#) - Used to tighten the seal and stopper to the vial. These are expensive pieces of equipment. The one I linked is mid-range. Please make sure you get a crimper that matches your cap type. Flip top caps need flip top crimpers, pure aluminium seals need aluminum seal crimpers.
- [3ml Syringes](#) - Used to measure benzyl alcohol and for injecting. Note that [1ml syringes](#) add more precision while injecting, so feel free to grab some of those instead.
- [25 gauge Needles](#) - Used to pierce one's body while injecting. Note that some may need longer needle heads to reach muscle. If you're a twig like me though, 1 inch is fine and will be much more comfortable than an extra half inch of metal in you. Also feel free to go for a higher or lower gauge needle while injecting. I think 25 gauge is a good balance of thin enough to cause less pain while still being easy to push fluid through.
- [22 gauge Needles](#) - Used to draw liquid out of storage and into the syringe. I use 1.5 inch length needles so as to reach deeper into containers. You could replace this with the needle you inject yourself with, but having a thicker drawing needle is considered best practice.

- [60ml Syringes](#) - Used to push larger quantities of injection fluid through a syringe filter in a precisely measured manner. Make sure to get luer lock tips (the same tips as the 3ml syringes), so as to fit most syringe filters.
- [0.22um Syringe Filter](#) - Used to filter mixed injection fluid. Non-sterilized filters are a good bit cheaper, but are much riskier. They are not advised, as they almost defeat the purpose of the filter in the first place if the exit could introduce them to more harmful bacteria build-up.
- Sterilization Tools - Several useful items if you wish to keep the process more safe and sterile. Remember that you're sticking this fluid in your muscle, so extra caution should be taken!
  - [Gloves](#) - Used for holding objects without getting oils, sweat, etc. on them. Most disposable gloves will do fine, so feel to go for cheaper options.
  - [Alcohol Wipes](#) - Used for preparing surfaces to come into contact with sterile objects. Could be replaced with most sanitizing wipes.
  - [Still Air Box](#) - An extra measure of protection that can be taken if you're working in a particularly dusty or carpeted environment. I recommend you make one yourself by cutting apart one side of a large plastic tub container and flipping it upside down like in the linked picture.
  - [Autoclave/Instapot/Oven](#) - Used for heat sterilization at the final step of production. Autoclaves are expensive, but thankfully we have alternatives. An instapot (or any good pressure cooker) gives similar pressure and heat, and an oven is another option as long as it doesn't have many cold spots.

- **Transdermal**

- [Mason Jar](#) - Used for mixing the solution together. Really any glass container large enough that can be sealed while shaking will work.
- [Eyedropper Vials](#) - Used For storing and administering the solution.

- **Powder and Oil Capsules**

- [Capsule Filler](#) - Used for securing gelatin capsule ends together. Feel free to try out other capsule fillers that fill more than just 24 at a time.
- [Medicine Dropper](#) - Used to transfer oils into capsules in a precise manner.

# Methods

## Injections

Keep in mind injections have the most steps by far. Sterilization/depyrogenation is a critical factor in this process, and more risk is involved. You may want to test out your hormones with an easier method, such as transdermal, first or do a smaller test batch by dividing the numbers below. The below numbers will result in 5 vials that contain 10ml of 20mg/ml estradiol cypionate. If you injected 5mg (0.25ml) every 10 days, which is honestly pretty frequent for cypionate, that would mean every vial would last you a year and some change. That would mean the full batch below would be a ~6 year supply of E. I used this batch size, because around 6 years is the shelf life of these vials. I have to give credit to this [guide](#), as I based a good bit off it.

### 1. Preparation

- a. Prepare a fairly deep bowl of isopropyl alcohol (anything at or above 70%) and place glass vials, rubber stoppers, and caps in it. They should be in the bath for a good 30 minutes before taken out to fully dry.
- b. Autoclave/pressure cook vials materials (caps, seals, vials) at 15 psi for 15+ minutes. This small guide is a helpful resource for [approaching that](#). Even plastic flip top caps shouldn't melt, since temperatures shouldn't exceed 250 degrees fahrenheit.
- c. Sterilize glassware including beaker, glass stirring rod, graduated cylinder, etc. This [pastebin](#) is a good guide in regards to the many ways you can go about doing that. Just making sure materials are clear of particles and sanitized via alcohol wipes would be another approach. General glassware sterilization isn't as important as vial sterilization but should still be done.
- d. Sanitize your area lab area with alcohol wipes and make sure you have plenty of room and are not in a particularly dusty environment.
- e. Optional: Don gloves and/or other protective gear. This includes your still air box if necessary.

### 2. Measure

- a. Place weighing tray or glass watch on scale, and then tare to 0. Gently scoop or pour estradiol cypionate powder onto glass watch/weighing tray until the scale reads 1 gram. Put contents into borosilicate glass beaker.

- b. Measure out 12.5ml of benzyl benzoate into graduated cylinder and pour into beaker.
  - c. Measure out 1ml of benzyl alcohol via a 3ml syringe and shoot into beaker.  
Another ml or so can be added if you want extra assurance on long term storage.
  - d. Measure out 36.5ml of MCT oil into graduated cylinder and pour into beaker.
3. Mix
  - a. Prepare a small saucepan of water that can submerge beaker to at least halfway up. Place pan on burner and start heating up toward a boil. This is known as a water bath.
  - b. While water is heating up, place beaker into water bath and stir with glass stirring rod until fully dissolved.
  - c. When water gets to a boil, leave beaker in the water bath for 30 minutes, and then remove from heat. I leave the beaker in the saucepan.
4. Filter
  - a. Fill 60ml syringe with 50ml full of the mixture once it cools down for a good 5 minutes or so.
  - b. Unwrap sterile syringe filter and attach to 60ml syringe.
  - c. Make sure the luer slip filter output is over vial and push down on syringe until 10ml of fluid has gone through. Keep in mind that it's pretty easy to break these filters, so don't push too hard on the plunger.
    - i. Just a note, this could take upwards of an hour or two. Syringe filters are slow, and if you have arms as weak as mine, you may want to get a lab partner to switch out with every so often.
  - d. Repeat until the beaker/syringe is empty. Note that you will lose a small bit of fluid to the syringe filter.
5. Bottle
  - a. Place rubber stopper on each filled vial.
  - b. Place aluminum cap on each filled vial. Make sure that the cap is on evenly before moving on to crimping.
  - c. Slowly move crimper over vial, making sure to touch the cap as little as possible. Squeeze the crimper handles tightly together. Here's a [quick video](#) showing all these steps off.

i. I would recommend testing your crimper out on empty bottles and tightening the head if needed. This can be done by squeezing the crimper together, and twisting the prongs on the head when they're together. I would do at least one or two test crimps before trying it on the real deal.

## 6. Sterilize

- a. To preface, this section is very open ended. My method is a mixture of wet and dry heat sterilization with dry heat being used at this end step as an extra measure.
- b. Preheat oven to 275 degrees fahrenheit. You can go higher if using pure aluminium vial seals, but you shouldn't exceed ~325 degrees fahrenheit, since your rubber stoppers will start to melt and deform.
- c. Place crimped vials on an oven tray (place in oil bath if you don't trust your oven to heat evenly)
- d. Leave in oven overnight (6+ hours) and remove.
- e. For best shelf life, store in a dry, dark place.

## 7. Intake ([helpful pregame guide](#))

- a. Screw on 22 gauge needle to syringe. Never reuse syringes or needles!
- b. Pull back plunger to desired dose of 0.25ml.
- c. Pierce rubber on vial and flip it upside down, making sure the needle is submerged.
- d. Quickly push air out of the syringe. This is known as aspirating.
- e. Pull back plunger until you have a decent bit over 0.25ml of fluid in your syringe.
- f. With the vial still upside down, push the plunger until it's at 0.25ml on the graduation lines. Flick away any air bubbles while you do this for that extra sexy nurse flair. This is an extra step to make sure that you're injecting the precise amount, and that no air is in your syringe.
- g. Replace 22 gauge needle with 25 gauge.
- h. Sanitize injection area with alcohol wipe. This can be thigh, buttocks, arm, etc. I recommend the [vastus lateralis muscle](#) (outer side of the middle thigh). If you don't have alcohol wipes, I've found that rubbing alcohol poured on a paper towel works fine.

- i. Look for any veins to avoid. White light is best for this. Once you've found an ideal spot, you can pinch around it if you have trouble twitching from the pain. I also recommend resting your thigh on a hard surface, such as a wooden chair.
- j. Quickly press needle in, making sure it connects with your skin at a 90 degree angle. It's easier when you have someone else do this and the next step for you.
- k. Push down on plunger until all fluid is injected. Remove needle.
- l. Once needle is pulled out, sanitize area with alcohol wipe. There is often a small amount of bleeding from the injection site. Don't fret, and just make sure it gets wiped up.

Note that my sterilization process does not autoclave/pressure the vial once they are crimped. This is because I've had some bad experiences with pressure cooking sealed vials, especially ones this full. The process of the alcohol bath, wet heat sterilization, a little bit of extra benzyl alcohol, a lengthy boiling water bath, syringe filtering, and the several hours of dry heat sterilization to top things off will create enough walls of security for risk of infection to be extremely low in my opinion. Yes, there will be a time where the vials will be open and exposed to the air for a little while after being sterilized and before being crimped. The same risk is presented every time you pull liquid out of the vial for your injection, however, especially if you aspirate and introduce foreign air into the sealed vial.

As a final note, this is a process that I would recommend doing twice before actually injecting yourself with the final product. As detailed as I go in this guide, there's so much that only practice can drill into your head. Good luck, and be safe!

## Transdermal

I'd say this is the cheapest, easiest, and quickest method out of the bunch. Sterilization isn't an issue, as the alcohol in the solution takes care of that for you. Downsides are really only the frequency at which you have to do it and reaching the skin that absorbs the solution well. The below recipe should make 200ml of 20mg/ml transdermal estradiol solution. That should be approaching 3 years of estrogen. Its shelf life is nearly indefinite, so feel free to make a bigger batch!

1. Measure
  - a. Place weighing tray or glass watch on scale, and then tare to 0. Gently scoop or pour estradiol powder onto glass watch/weighing tray until the scale reads 4 grams. Place in container.
  - b. Measure out 100ml of isopropyl alcohol and pour in container.

- c. Measure out 100ml of isopropyl myristate and keep in graduated cylinder.
2. Mix
  - a. Secure lid or stopper on container.
  - b. Shake estradiol and isopropyl alcohol together until powder is dissolved.
  - c. Take off lid and pour your pre-measured 100ml of isopropyl myristate into container. Secure lid again and shake.
  - d. The same results could be achieved in an open container with enough stirring.  
Providing low heat from a stove burner helps immensely in my experience.
3. Bottle
  - a. Use large syringe to place 30ml of solution into each eyedropper vial. A graduated cylinder could also work for portioning. Really, it isn't too important exactly how much is in each vial unless you plan on having a more exact record of your stock. You could even just keep the solution in its original container and use a medicine dropper for doses if you wanted to simplify things even more.
4. Intake
  - a. Pull up liquid into dropper.
  - b. Apply a 0.1ml (2mg) dose to scrotum or armpit. Apply this same dosage every 12 hours. Note that the armpit isn't as effective and may require more drops depending on the individual. See below disclaimer about adjusting drop dosage.
  - c. Avoid clothing contact to the area while it dries.

Please be aware that drop sizes are tricky and often vary depending on several factors. It is said that most eyedroppers produce 0.05ml drops. If that's the case, then 2 average drops and a smaller one would be good enough for your 12 hour dose. Some smaller tip droppers and pipettes report to have 0.01ml drops though. This would be a whole 13 drops, so it's best to do testing with your droppers before you over or under dose yourself! I test by filling a 5ml graduated cylinder exactly up to the 1ml mark and test how many drops it takes to go up to the 2ml mark from there. Divide one by the number of drops, and you have your ml per drop number. For more precision, you can repeat this test multiple times and take the average. So if it took 25 drops on average to make 1ml, then those drops would be 0.04ml each. In that case, to reach our 0.13ml dose, we would divide our dose by the average drop volume to get a little over 3 drops. Depending on your average drop volume, you may want to change your solution concentration to create a more equal division, so you can get closer to whole drop ideals.

A very important thing to keep in mind while you test your dropper is what liquid you're testing with. I highly recommend using the transdermal liquid solution to test. My drops with water testing were almost twice as large! Liquids have drastically different properties, so it's pretty much impossible to get a consistent drop size for every single thing you could put in your dropper. If you buy the eyedroppers I linked and follow my instructions, then your drop size for our transdermal E will be 0.025ml per drop. To get a 0.1ml (2mg) dose, that means we would need 4 drops.

## Oil Capsules

The process for oil capsules and powder capsules is pretty different, so I'll split my examples. Oil capsules are good mostly for those who want to do rectal administration. With this being the case, I'll be using a progesterone recipe, since it greatly benefits from this intake method. It should make ~222 100mg capsules. This is 7 months and some change of progesterone.

### 1. Measure

- a. Using a stovetop pot/pan, heat a big glob of coconut oil until melted. There's no reliable, exact way to do this, but try to scale this with your dosage.
- b. Measure out 100ml of melted coconut oil and place in beaker.
- c. Place weighing tray or glass watch on scale, and then tare to 0. Gently scoop or pour progesterone powder onto glass watch/weighing tray until your scale reads ~22.22 grams. Place in beaker.

### 2. Mix

- a. Submerge beaker at least halfway in a low heat water bath in a medium saucepan.
- b. Stir beaker contents until powder is dissolved. Leave in bath.
- c. Take saucepan over to your workspace and off the heat.

### 3. Fill

- a. Prepare your capsule filling machine as per instructions it comes with. This usually involves placing a base on a stand, making sure the bottom of each gel cap goes into said base, and the tops go into a separate piece.
- b. Using a medicine or eye dropper, fill each capsule very carefully. To avoid overflows and mess, I would avoid filling to the very top.

- i. Important! Do not fill capsules up with oil that is too hot. This will melt the delicate walls of the gel capsules and gunk up your capsule machine. It's hard to say how hot is too hot, but I generally go by it being too hot if I can't touch a filled medicine dropper of oil without instantly recoiling.
  - c. Using your specific capsule machine, combine the bottom and top parts of the capsules to seal them together.
  - d. Take saucepan back on heat and let it warm up for a minute or so. This is to prevent it from solidifying again.
  - e. Place capsules in the fridge so that the coconut oil solidifies again.
  - f. Repeat step 3 in full until all oil is used.
4. Intake
    - a. Insert gelatin capsule at least 1cm past the anal sphincter before bed. It is recommended that you wash your hands before and after doing so, but I only ever do it after.
    - b. Or just swallow it. Note that absorption and bioavailability goes way down with progesterone taken orally.
    - c. Or you could take a syringe without a needle on it, and just insert roughly 0.5 ml of oil into your rectum that way. This skips the tedious step 3 but takes a bit longer to do on a day-to-day basis.

Due to the time consuming nature of repeating step 3 over and over again, you may want to go with a smaller batch. Another way to speed it up would be getting a larger capacity capsule filling machine. Using 00 size capsules instead of the size 1 would make filling a little easier, due to it being less precise. I just use size 1 capsules for easier rectal administration. If you do adjust capsule size, you will need to adjust the ratios accordingly. These ratios are based on the fact that each capsule will hold roughly 0.45ml of liquid. Normally, we'd do 0.5ml for size 1 capsule, but it's difficult to fill them up all the way without creating a big ole mess. A size 00 capsule would need a little over 0.9ml to almost fill, so you'd need double the oil as well, though coconut oil is very cheap and readily available.

## Powder Capsules

Similar to the above oil cap process but with some steps changed/added. Powder caps are faster to fill, but are only good for oral administration. I will use bicalutamide in this recipe, as it doesn't suffer from oral intake. This will make ~240 50mg pills. This is a roughly 8 month supply.

## 1. Measure

- a. Place weighing tray or glass watch on scale, and then tare to 0. Gently scoop or pour bicalutamide powder onto glass watch/weighing tray until your scale reads 12 grams. Place in container.
- b. Repeat above measuring process for 54 grams of coconut flour. Place in container.
- c. An important note that I'll add in, is always put in a little extra for both. There will be powder loss, and you'll be glad to have a little excess when you get to the last batch, and are having to scrape up every little bit of powder around.

## 2. Mix

- a. There are several ways to mix together our powders, but I plan on placing them in a jar and shaking it for a good 30 seconds. I've heard of people using magic bullets, whisks, and even expensive lab equipment if you want alternatives.

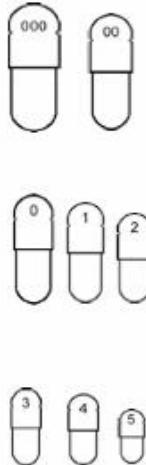
## 3. Fill

- a. Prepare your capsule filling machine as per instructions it comes with. This usually involves placing a base on a stand, making sure the bottom of each gel cap goes into said base, and the tops go into a separate piece.
- b. Pour powder into bottoms of capsules and spread out with a card/spatula. Pack down powder with tamping tool, and pour more powder in to spread out. Usually you need to use the tamping tool 2 or 3 times to get a good tight fill
- c. Join top piece together with bottom piece and pop out your capsules. Again, follow the instructions for your specific capsule filling machine. I will be using [this one](#).
- d. Repeat the Fill steps until all your powder is used up. Note that excess powder from each fill can be reused.

## 4. Intake

- a. Swallow!

Keep in mind that the ratios I present here are not an exact science. These numbers were based on the powder density for coconut flour. But if you were using almond flour, for example, you'd have to change your ratios up due to its high density. Same for if you use a different size gelatin capsule. See the below picture for reference.

Representative (approximate) Capsule Sizes	Capsule Size	Typical Fill Weights (mg)			Volume Theoretical (ml)	Locked Length		External Diameter (mm)	Cut Length +/- 0.51 (mm)	Single Wall Thickness +/- 0.03 (mm)	Weight (Avg. of 100) +/-10% (mg)							
		Powder Density																
		0.45 (Light)	0.70 (Typical)	1.00 (Heavy)														
	000	615	960	1370	1.37	26.14	Tolerance Component	9.91	12.95	0.112	163							
	00	430	665	950	0.95	23.30		9.55	22.20	0.110								
	0	305	475	680	0.68	21.70	Cap	8.53	11.74	0.109	118							
	1	225	350	500	0.50	19.40		8.18	20.22	0.107								
	2	165	260	370	0.37	18.00	Cap	7.65	10.72	0.107	96							
	3	135	210	300	0.30	15.90		7.34	18.44	0.104								
	4	95	145	210	0.21	14.30	Cap	6.91	9.78	0.104	76							
	5	60	90	130	0.13	11.10		6.63	16.61	0.102								
							Cap	6.35	8.94	0.102	61							
								6.07	15.27	0.099								
							Cap	5.82	8.08	0.092	48							
								5.56	13.59	0.890								
							Cap	5.31	7.21	0.096	38							
								5.05	12.19	0.091								
							Cap	4.91	6.20	0.089	28							
								4.68	9.32	0.086								

The best way to approach this is to fill a few test capsules with your intended ratio of powders. Compare the weight of these capsules with your empty capsules, and you'll get your powder fill dosage. For example, if I'm working with size 1 gelatin capsules that weighs 100mg empty, a filled capsule that weighs 375mg would mean 275mg of powder is inside said capsule. Not every capsule will be filled equally, but this was the average I got for the pills using the methods and materials described above. This number is our baseline for the math used to arrive at our ratios. If we want to make 240 50mg capsules that can hold 275mg of powder, we multiply 50mg of our active chemical by 240, and end up with 12,000mg (12g). After that, all we have to do is multiply 225 by 240 to get our 54,000mg (54g) number.

## Quick Recipes

### Estradiol Cypionate Injections

Makes 5 10ml vials at 20mg/ml concentration for estradiol cypionate

- 1g estradiol cypionate
- 12.5ml benzyl benzoate

- 1 - 2ml benzyl alcohol
- 36.5ml MCT oil

(MCT Oil: 73%, Benzyl Benzoate: 25%, Benzyl Alcohol: 2%)

## Transdermal Solution

Makes 200ml of transdermal solution at 20mg/ml concentration for estradiol

- 4g estradiol
- 100ml 99% isopropyl alcohol
- 100ml isopropyl myristate

## Progesterone Oil Capsules

Makes ~222 100mg size 1 gelatin oil capsules for progesterone

- ~22.22g progesterone
- 100ml melted coconut oil

## Bicalutamide Powder Capsules

Makes ~240 25mg size 1 gelatin powder capsules for bicalutamide

- 12g bicalutamide
- 54g coconut flour

## Estradiol Powder Capsules

Makes ~240 4mg size 1 gelatin powder capsules for estradiol

- 1g estradiol
- 65g coconut flour

## All-In-One Capsules

Makes ~222 2.5mg estradiol, 100mg progesterone size 1 gelatin oil capsules

- ~22.22g progesterone

- ~0.55g estradiol
- 100ml melted coconut oil

## Experimental

### Domperidone

Domperidone is a drug that treats headaches/nausea and increases the frequency of stomach and bowel contractions. What we're interested in, however, is its side effect of Increased prolactin levels. 30mg/day provides prolactin levels that simulate pregnancy levels of cis women. After tanner 4, the breasts are fully developed and ready to produce milk. What prolactin supposedly does, is signal to the breast tissue to expand the fat storage and musculature underlying this production of milk, while Oxytocin signals to actually start production and begin lactating. What taking Domperidone should do, in theory, is cause the breasts to get ready for milk production, and, as a result, cause an increase in size to the same degree that pregnant women experience when they are about to begin breastfeeding. It would hopefully increase breast size in transwomen as well, and has also been used by cis women for this same purpose, as well as increasing milk production post-pregnancy when they are lacking.

One difference that might be noted is that pregnant women tend to experience a drop in size, sag, and general "deflation" of the breasts postpartum. This happens because prolactin acts as an antagonist to the natural production of E2 and P4, giving them severely reduced hormone levels, and causing their appearance to be less feminine until they come back up to normal due to the lack of prolactin. Because transwomen get both of these hormones exogenously, this drop should never happen, while the size increase is kept indefinitely. Prolactin also supposedly increases the sensitivity of estrogen and progesterone receptors in the body, possibly to make up for the decrease in levels otherwise.

Because the increase in size seems to continue on in cis women, even after having multiple pregnancies, Domperidone could theoretically be taken for as long as needed to reach a desired size, though this is completely untested even among cis boobmaxxing communities. Still, the potential for a non-surgical option for increasing breast size in transwomen (or cis women, if they would like to experiment with their hormones) with so much promise begs being explored further, so it has been ordered to be tested.

## Transdermal Esters

Longer half life for each dose. Using a ester for the transdermal solution should increase the length of time the hormone is active for in the body. It is not yet known whether hormone esters will dissolve in 99% IPA the same way non-esterized hormones do, or if they will absorb properly if so, so it needs testing still. If possible, switching the solution recipe with the same dosage of an ester instead should be a simple upgrade across the board as far as effects and stability of levels go, but may be slightly more expensive, insolvable and require a different recipe, or nonabsorbable through the skin.

## Testing

As I type this (11/7/2020), I have been on my own homebrew HRT for roughly 1 month. It should be said that I've been on HRT prescribed to me for about 2 years. I pass well and have pretty much gotten all the changes HRT can give me, so I have to focus more on what could be reversed. So far, I haven't had any physical changes that deviated from my pharma meds. My libido is the same, my smell is the same, and I haven't experienced any mental changes from a drastic hormone swap. I even got a blood test on 10/28/2020 that I posted below to make sure it wasn't just placebo.

Aside from my personal experience, my girlfriend has been taking my meds for roughly 2 weeks. She was also on pharma meds for ~2 years previously and has had zero downsides or changes now that she's on homebrew. A future commune member of mine has also been taking it for about 2 weeks. In contrast to my girlfriend and I, this is her first experience with HRT. She's experienced some minor skin and mood changes along with mild breast tenderness. With all this being the case, I'm hopeful that my meds are a success, but I will continue to get blood tests and monitor test subjects.

### [Link to Blood Test PDF](#)

This blood test shows my estradiol levels at 292 ng/mL, my testosterone levels at 14 ng/dL, and my metabolic panel as within range at every level. This is 5 days after taking a 5mg (0.25ml) estradiol cypionate injection. It should also be noted that I take 25mg of bicalutamide and 2mg of oral estradiol a day. While these levels are satisfactory, I have upped my injection dose slightly since then.