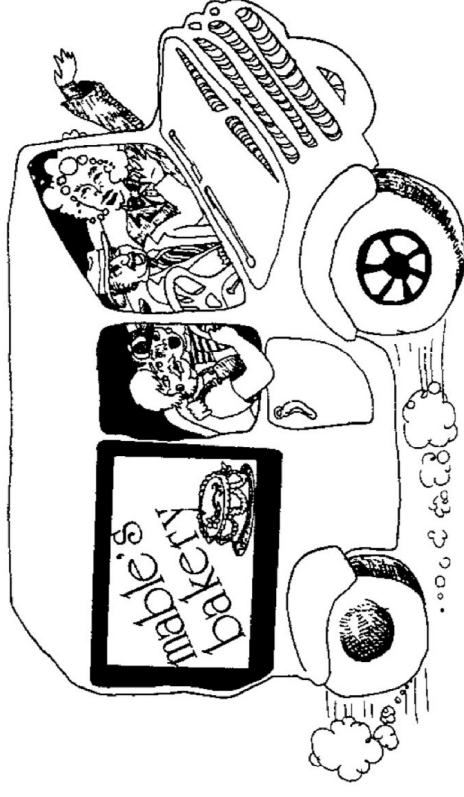


A guide for medium to large scale DIY production and distribution of injectable estrogen for about \$10 per person per year. Includes step by step instructions and additional resources.

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DIY Estradiol Valerate



Mable's Bakery Mutual Aid
mablesbakerymutualaid.noblogs.org
3rd edition - Spring 2026

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Disclaimer: Neither the Mable's Bakery vial nor this zine are intended to diagnose, treat, prevent, or cure any medical illness. None of these statements have been evaluated by the FDA and are NOT medical advice.

What is this vial?

This section is assuming you are holding a vial of estradiol in your hands already. If you're not, send an email (preferably from another protonmail account) to mablesbakerymutualaid@proton.me, or ask whomever you got the zine from.

So what you've got here is a vial of estradiol valerate formulated for intramuscular or subcutaneous use. This means you can inject it into your muscle or fat. If you've never done an intramuscular or subcutaneous injection before, there are lots of videos online showing how to do them – or ask a trusted friend!

Make sure you use an UNOPENED, STERILE needle every time to draw up the estrogen from the vial and to do your injection. Please do not reuse or share needles!! Additionally, you should use an alcohol wipe on the top of the vial every time.

Whether you choose subcutaneous or intramuscular is up to personal preference and body composition; there's not much difference in absorption/bioavailability. We've found that doctors nearly always direct patients to inject via intramuscular but when we've mentioned to doctors that we prefer subcutaneous the response has been “oh ok, cool.”

Standard dosing varies widely according to individual body size and desired feminizing effects, typically between the very low end of 5mg every 2 weeks and the very high end of 10mg per week. This vial of estrogen contains 40mg of active ingredient for every 1mL of solution. We will do some math here.

The formula to calculate how much liquid to inject is: **(amount you want to inject) ÷ (concentration of the vial) = amount to inject per dose in mL**

Dosing Examples:

- If you wanted to inject 4mg, and you have a 40mg/mL vial,
 $4 \div 40 = 0.1$
0.1mL per injection
- If you wanted to inject 5mg, and you have a 40mg/mL vial,
 $5 \div 40 \approx 0.13\text{mL}$
0.13mL per injection
- If you wanted to inject 8mg, and you have a 40mg/mL vial,
 $8 \div 40 = 0.2$
0.2mL per injection
- If you wanted to inject 10mg, and you have a 40mg/mL vial,

Below is a simple recipe card you can quickly reference while making your hormones – you may want to cut it out and laminate it to have in your work space with you.

Estradiol Valerate

100mL MCT oil plus enough to bring the final volume of estrogen solution to 400mL
16g estradiol valerate powder
180g benzyl benzoate
8g benzyl alcohol

10 ÷ 40 = 0.25
0.25mL per injection

Many transfeminine people start on 4mg every 5 days, but we recommend doing your own research and talking to other people about their experiences taking estrogen.

What is Mable's Bakery Mutual Aid?

Mable's Bakery Mutual Aid is a small group of friends building transgender medical autonomy in the face of an increasingly hostile social and political climate in the United States. We are dedicated to researching, practicing, and sharing the skills needed to meet our own particular medical needs regardless of access to insurance or capitalist/state medical institutions. We are anarchists and believe in gender self-determination and bodily autonomy for all. We are neither medical professionals nor chemists. We were inspired to start this project after reading Fairy Wings Mutual Aid's guide to producing transdermal estrogen¹.

What is this zine?

This zine is meant to accompany the vial of estrogen that you are now holding. It offers information about how to use it, the risks, the possible rewards, a detailed step-step guide about how to create a chapter of your own, and additional resources. This project is part of a broader DIY autonomous trans healthcare project which was inspired by a group calling itself Fairy Wings Mutual Aid under the banner of "Boobs Not Bombs." Boobs Not Bombs is a reference to Food Not Bombs, an anarchist food distribution project dating back decades. For more information see here.² So Boobs Not Bombs is the name of the idea of distributing estrogen specifically for low/no cost and Mable's Bakery Mutual Aid is the name of our specific group.

Mable's Bakery Mutual Aid was created by anarchists and we have tried to organize it around anarchist principles.³ If anarchy is an unfamiliar concept to you – don't worry. This zine was written for a non-technical non-anarchist audience, and

1 <https://crimethinc.com/2022/12/15/producing-transdermal-estrogen-a-do-it-yourself-guide>

2 https://en.wikipedia.org/wiki/Food_Not_Bombs note that a lot of information on the "official" Food Not Bombs website is inaccurate and out of date. If you want to see what FNB is actually like contact the closest chapter and get involved!

3 <https://www.sproudisro.com/catalog/zines/theory/anarchism-what-it-is> and <https://crimethinc.com/zines/to-change-everything> are both zines (short magazines) that offer an introductory view of anarchism

wherever possible we've tried to write in a way that's straightforward and easy to understand. If anything in here is unclear or confusing don't hesitate to send us an email at mablesbakerymutualaid@proton.me. We'd love to hear from you!

Risks

So, let's go over the risks of taking estrogen. We bought estrogen via the black market as raw powder and had it tested via Fourier-Transformed Infrared Spectroscopy and Gas Chromatography-Mass Spectrometry to confirm that it was indeed estradiol valerate. No test is guaranteed to be 100% accurate, but we feel confident that we weren't ripped off and sent contaminated product or baking soda or even a different form of estrogen than estradiol valerate. That being said, there is risk of impurity or contamination for grocery store supplements as well. Companies might get investigated if they're accused of putting dangerous chemicals in their supplements but otherwise supplements are not regulated by the FDA. So, it's our opinion that this estrogen is about as dangerous as a standard supplement. Of course, we probably wouldn't inject a supplement from the grocery store that wasn't intended for injection, and further on in this zine we will go into the specific safety steps we took so that we feel confident injecting what we made as well as providing information to others on how to do this themselves. That being said, if you get prescribed estrogen from a doctor it will undoubtedly be higher quality due to having to pass certain standards. If you are able to get estrogen prescribed and you can afford it we recommend you do this. Nevertheless this isn't possible for many people, which is where we come in.

In addition there are certain inherent risks to taking estrogen. For clarity's sake this is written for AMAB people. For AFAB people the risks and rewards may be different.

For all people estradiol is associated with coagulation. Coagulation can lead to a number of adverse events such as heart attack, stroke, and blood clots, also known as thrombosis. Of particular concern are venous thromboembolisms, or VTE events. These are blood clots that form in veins moving blood towards the heart. For AMAB people that take estradiol the increased risk is dose and route of administration dependent. This means your risks are greater with higher levels and that some ways of taking estradiol ("route of administration") are more associated with VTE events than others. Exactly how much your risk increases is not precisely known, as research

- transdiy.redd.it.com
- estrogel.redd.it.com
 - This subreddit provides useful information on gel formulations and sourcing supplies.
- hrtcafe.net
 - This site has a very thorough tutorial on homebrewing injectables, as well as links to purchase all supplies. The downside is that everything on the site must be purchased online, which can be a barrier for young and/or transient people. This website has gone offline as of the Spring of 2026, there is a backup archived at <https://hrt.hrtarchive.org/hrtcafe.net/>.
- International Journal of Pharmaceutical Compounding – www.ijpc.com
 - Provides thousands of pharmaceutical formulations with step by step recipes.

Anarchism

- sub.media/a-is-for-anarchy
 - This is a great short video series on many of the basic anarchist concepts. SubMedia has other longer videos on a whole range of topics and we recommend all of them highly! If you're not familiar with Anarchism A is for Anarchy is an excellent starting point.
- [Sproutdistro.com](https://sproutdistro.com)
 - Sprout Distro has a great collection of zines on a whole range of topics. If you're looking for short reads on a variety of anarchist topics you should poke around here.
- [Itsgoingdown.org](https://itsgoingdown.org)
 - IGD is primarily an anarchist news site. Check it out to see what anarchists around the world are up to!
- [Crimethinc.com](https://crimethinc.com)
 - CrimeThInc has all kinds of resources from books to videos to podcasts. Many of those are intended for a beginner audience and others aren't.

as many people interested as possible. In the long term our hope is that other projects will come online and we will be able to shrink our network because that's just what makes the most logistical sense for us.

2. Distribute bottles.

- Once you know where to take the bottles/zines physically transport them to all of the various locations. You can mail them if you like however it will be quite expensive given that the package(s) will be rather heavy and there can be legal consequences if you are caught sending illegal pharmaceuticals in the mail. If you ship any of the bottles make sure to add wrapping so they don't shatter in transit.
- If you're tabling at physical events you might need to setup a station with bottles, zines, and a donation jar. This might necessitate buying a folding table for each location or figuring out some other arrangement.
- Once you have run out of bottles and zines, collect a final round of donations, conduct any additional fundraising (if necessary) and then start all over.

Final Notes

Think about what kind of physical and emotional needs might come up during a day of making estrogen! You'll probably get hungry, and you might get bored during the tedious filtering process. The first few times we made a batch of injectable hormones we would hit a point where we were all overwhelmingly hungry and someone would have to go on a burrito run. After that we had one person each batch whose role was to stay outside the bubble and hand stuff in/out as well as cook a meal for the crew.

We also enjoyed watching movies while filtering (make sure to thoroughly alcohol wipe your laptop before bringing it into the bubble).

Other Resources

Trans related info

on trans people is poorly funded. For an overview of the research that is available see [here](#).⁴

Another risk to consider is breast cancer. Like blood clots there seems to be a causal link between exposure to estrogens and breast cancer. This also seems to be dose dependent, so higher doses of estradiol will result in an increased risk of breast cancer. As with blood clots the exact amount of risk isn't precisely known and for AMAB people taking estradiol the risk level is likely to be somewhere between the risk levels for cis men and cis women.⁵

Lastly, the primary effects of estradiol itself - feminization and suppression of your body's reproductive processes - could be considered risks depending on your perspective. For better or worse the vast majority of effects from estradiol are temporary. Things like smoother skin and fat redistribution will reverse. However some effects like breast development and possibly infertility are permanent. If you're okay with these risks, enjoy your estrogen!

Why do this?

There are risks associated with taking estradiol but as with anything there are risks associated with not taking it as well, and for some people those can be serious and life threatening. A common talking point that people who want to restrict access to hormones bring up has to do with the "irreversible changes" that are associated with taking hormones. This fails to take into account that our bodies are changing in irreversible ways all the time, and for many people these "irreversible changes" are highly desirable! Taking exogenous hormones is simply taking the reins of that change and moving it in the direction that feels more aligned with how you want to be.

While there are innumerable barriers in place to prevent people (especially trans people) from accessing hormones like estradiol there are comparatively few mechanisms in place to ensure that everyone that wants hormones has access to them. Furthermore, even when the medical establishment is able to meet our needs it's done so on the terms of insurance corporations, medical review boards, the state, the family, and other institutions that have historically served to oppress, exploit, and exclude people. These institutions restrict access to things like hormones in order to

4 <https://transfemscience.org/articles/estrogens-blood-clots/>

5 <https://transfemscience.org/articles/breast-cancer/>

reinforce cisheteronormativity (the idea that being cis and straight is the only "correct" or "natural" way to be). They want to reinforce these ideas and gate-keeping structures in order to maintain power and control over people's bodily autonomy because that power and control helps them maintain control of all other aspects of our lives. Rather than trying to work within and validate the existence of these institutions, we deliberately choose to work outside of them. We believe everyone should be free of the coercive power of the state and the medical establishment, and should have access to the tools needed to shape their bodies in the way that they want. We'd rather risk going to jail trying to help other people meet their needs than collaborate with a system responsible for our oppression to begin with. The term we usually use for this is mutual aid - which is just a fancy term for cooperating with other people to meet your needs. Mutual aid is one of the basic tenets of anarchism and as anarchists is something we hold dearly.

The state would tell us that this can't be done. Only huge institutions can meet people's needs and even then they have to adopt repressive practices to do so. We are told there is no realistic alternative to this. If you're reading this zine and holding a vial of estradiol in your hands we've proven them wrong. By making estradiol widely and easily available at low/no cost we help people access a greater degree of bodily autonomy than the existing medical establishment. If we can poke a hole in the supposed necessity of these institutions for hormone access, maybe others will start to question their necessity in other contexts too.

We can have freedom from coercion and hierarchy while still providing for each other's needs (whatever they may be) through building alternatives based on solidarity and mutual aid. If you're on board with this vision and want to learn more about anarchist politics, stop by whatever anarchist book store/infoshop/social center is nearest to you. If you like the people and projects you learn about there – stick around! Talk to other people and find out how you can plug into things.

Lastly, if this project excites you and you'd like to see it expand consider starting your own chapter. There are step by step instructions further down on how to do so. It takes a bit of money up front and a couple friends but it is doable task. We need as many people as possible committed to acting in accordance with these principles in order to challenge the structures that dominate and oppress us.

As trans healthcare – and other forms of bodily autonomy - are increasingly restricted and criminalized, we find it valuable to generalize the skills and tools to ensure we continue to have access to hormones, regardless of the law. We aim not

recommend you find someone with a free/cheap printing hook up. As a suggestion look up the closest zine distro and ask them, or see if your local library offers free, anonymous printing or photocopying.

Distribute

1. Create a distribution network.

- Figure out how you would like to distribute the DIY estrogen. Is it just for yourself/your crew? Word of mouth among trusted friends and community members? Openly to the broader public? There are drawbacks and benefits to each approach and we recommend a thorough risk assessment among your crew to help make this decision. If you want to distribute to the public you could seek out places (especially public/easily accessible places) where you could leave a DIY estrogen station. The station itself will consist of a number of bottles, an equal number of zines, and a donation jar. The specifics of what locations to pick are of course up to you. If you'd prefer a more clandestine arrangement you could also keep the bottles yourself and distribute them through word of mouth only. Exercise discretion and take calculated risks based on your own personal risk/benefit analysis.
- Other places that could serve as distribution points are Really Really Free Markets, anarchist bookfairs, trans community events, alternative Pride events (or mainstream Pride events!), Food Not Bombs servings, art spaces, and anywhere frequented by people that would like estrogen and ordinarily would not have access to it. Of particular interest currently are places (such as Republican controlled states) that are making it increasingly difficult or impossible for minors to access hormones. If this isn't feasible for you that's okay too. The main criteria is that you pick a plan that you and your friends are excited about and go from there!
- If you opt for a physical distribution plan make sure to periodically check the places that you all have left bottles to see when they need more. As a suggestion when you drop off more bottles you can also pick up any donations from the donation jar. Make sure to record any income in your finance spreadsheet, as always.
- The initial goal for Mable's Bakery was to spread out pretty far to try to get

You should also label your vials with their ingredients, a batch number, and an expiration date after determining the vials pass a visual inspection.

- You should record the batch numbers of any oils and excipients used along with the batch number in a compounding log. Castor oil solutions can last for 2-5 years and MCT oil solutions can last 3-8 years from the date of manufacture for the oil. The higher numbers are theoretical, require ideal storage, and exceed recommended use times for the oil by the manufacturer. Vials should be stored in a dark place free of excessive heat, as light and excessive heat exposure speed up degradation. If you freeze your vials in an attempt to extend shelf life, you may need to place them into boiling water to re-dissolve any API which precipitates out.

13. Clean up your workspace.

- Once you are done making all of the estrogen you should clean up your work area. Tear off all of the labels of the packages you received and burn them. This is to prevent you from putting a bunch of incriminating evidence into the same dumpster. Once all of the labels have been disposed of you can dispose of the boxes as regular recycling. If you peel the labels off the chemicals you bought you can also dispose of them as normal recycling. If not, dispose of each one in separate dumpsters.
- Pour any remaining overflow containers back into their original bottles. Thoroughly wash all non-disposable lab equipment. Return all of your supplies to wherever you normally store them. For a 400mL batch filtered into 7mL vials, you should have about 57 vials filled.

14. Print zines

- We based this zine off the zine that Fairy Wings Mutual Aid designed for transdermal estrogen and made a bunch of edits for DIY injectable. You can do this too, change out the contact info and any other relevant details, and print your own edition. Make sure to change the title of the zine to "[Your chapter's name] 1st edition" or something other than the title of this zine, so as to not confuse people. An electronic copy of the Fairy Wings zine for editing can be found at <https://tinyurl.com/boobsnotbombs>. If you'd like an electronic copy of the Mable's Bakery Mutual Aid DIY estrogen zine for editing send an email to mablesbakerymutualaid@proton.me.
- Given the length of this zine printing may be very expensive. We

to become a centralized gray-market pharmacy but rather one of many many groups and people capable of producing and sharing the things we need. Redundancy is good! Also, as healthcare generally becomes more difficult to access and the government becomes increasingly fascistic, we find making our own estrogen to be a fairly low-barrier way to build and practice skills that will only become more pertinent – working together as a group, navigating the internet and making purchases anonymously, setting up a clean room and sanitizing equipment, and basic laboratory procedures.

How did we do this?

We largely followed the step-by-step lab procedures for injectable estrogen from HRT Cafe⁶, while also referencing a recipe we found in the International Journal of Pharmaceutical Compounding. The process of producing a usable form of estrogen is pretty straightforward. That being said we strongly encourage you to poke around and learn as much as you can on this topic. None of us are experts and we would all benefit from learning from each other. Furthermore, the way we chose to go about this is not the only way. We could have also bought a pill press and a binding agent and cranked out estradiol pills that could be taken orally (although we understand that buying a pill press is a very easy way to attract unwanted legal attention). We have also produced topical estrogen. We could have looked into making blockers. Each approach has its strengths and weaknesses and in the end the correct approach is the one you and your friends are most excited about pursuing.

We've broken this section down into 5 parts: project infrastructure, first steps, ordering materials, making a batch, and distribution. Each section includes a general idea of what to do in bold followed by detailed instructions and notes.

We purchased 250 grams of raw estradiol powder (enough to make 6250mL of 40mg/mL finished solution), and proportionate amounts of the other ingredients, but the recipe below is for a 400mL batch. We were limited by the size of our workspace, which comfortably fits four people at once with a table and lab equipment. In our experience 400mL is a volume that four people can reasonably make and filter in a day. If you have a different size work space and more or fewer people helping you may wish to scale the recipe up or down.

⁶ <https://hrtcafe.net/homebrew>. This website has gone offline as of the Spring of 2026. We hope it comes back up soon, but there is a backup archive of it at <https://tinyurl.com/homebrewbackup>.

Things to consider before getting started

- Before embarking on your own DIY estrogen adventure you should think carefully about the risks involved and whether or not you're willing to take them. Estrogen is not a controlled substance in the United States but that doesn't mean there are no legal risks in buying the raw ingredient, compounding it into a usable form, or distributing it. There may be differences in legal risks depending on how much you're producing, whether you're sharing it with other people, whether you're asking for money for what you're producing or accepting donations at all, how public your project is, etc. You may wish to speak to a lawyer before embarking on this journey. Nevertheless, the fact that something is legal or illegal has little bearing on whether it is ethical, and the fact that some things are legal has never stopped the state from harassing people. This is especially true given that trans people have unfortunately become a hot button political issue. The prospect of people handing out estrogen on the street is ripe to get blown out of proportion by the right wing media and politicians looking to score points by hating on trans people. If you aren't comfortable with these risks consider helping existing autonomous trans healthcare efforts by donating and/or contacting us to see how you can help. If you decide you are willing to take these risks watch this video on why you should NEVER speak to the police.⁷ You may also want to read this zine about security culture, though much of it is overly stringent for these purposes.⁸

- As a rule, don't discuss your involvement in this project with people that you don't trust and only tell people what you think they need to know. If you need to discuss the project with others using electronic means, always use open source encrypted software like Signal, ProtonMail, Cryptpad, and others. Of course, every approach has limitations and there is nothing you can do to perfectly guarantee that you haven't left a trace. Nevertheless defenses should be thought of as being layered. The guidelines we have set out here should be regarded as a solid base line that can be added to rather than a security guarantee. For more information about digital security see here.⁹

⁷ <https://www.youtube.com/watch?v=d7o9Xp7eE> (title: don't talk to police, 18m views) note that this professor is seemingly a liberal and thus although we disagree with much of his framing we nevertheless agree with his conclusion: never speak to the police under any circumstances.

⁸ <https://crimethink.com/2004/11/01/what-is-security-culture>

⁹ <https://ssd.cff.org/>

- Pour in all of the estrogen solution from the beaker into the filter and place the cap back onto the filter.
- Note: If you are making a large castor oil batch, for instance larger than ~35 mL, you may want to keep the solution warm and add it in smaller increments. The oil cooling down will significantly slow filtration and may also increase losses.
- Turn on the vacuum pump.
- The solution will start filtering. If you are filtering castor oil, this process can take hours and happens drip by drip. When the drips stop happening after a minute, it is safe to assume you are done.
- Remove the bottle top filter from the media bottle and cap it with the media bottle cap.
- Use either a syringe with an 18 gauge needle (but not a syringe filter) or micropipettes to fill the individual 7ml vials with the finished solution, and cap the vials as outlined in the syringe filtering instructions.

11. Terminal Sterilization

- Fill the Instant Pot Pro Plus up with 2 cups of water.
- Place both mesh steaming baskets or the canning rack and something to support the vials into the Instant Pot Pro Plus. Do not let the vials touch the bottom of the instant pot.
- Place all of the vials into the top basket of the Instant Pot Pro Plus.
- Run the instant pot on the canning cycle for 1 hour, at max pressure, with no venting (natural cooldown), and no keep warm.
- It should reach a temperature of 250 °F. Allow the pot to cool naturally. If you vent it, it will put more temperature stress on the vials.

12. Inspection and Labeling

- Give your vials some time to allow air bubbles to dissipate and look for evidence of dust contamination. If the vials are contaminated, you should consider refiltering and investigating how your vials were contaminated.

7ml per vial.

- Filtering HRT takes about a minute per mL filtered! If you want to filter 30 mL vials, it means you will be pressing on a syringe plunger for about 30 minutes.
- Grab one of the 30mL or 60mL syringes and fit an 18g drawing needle onto it.
- Draw up the HRT solution out of the beaker.
- Remove the 18g needle. Do not re-use this needle in the next part.
- Obtain another new 18g needle.
- Unwrap a syringe filter and place the needle on the output side (luer slip side) of the syringe filter.
- Install the syringe filter onto your syringe.
- Pull up the stopper on an uncapped sterile vial just enough that you can fit the needle between the wall of the vial and the stopper. Press down on the stopper to hold it against the needle and avoid dust getting in.
 - Be careful not to scrape the side of the vial with the needle.
- Fill up the vial and pull the needle out, making sure to push the stopper back down. Set the vial aside and repeat for as many vials as you want to fill.
- Place an aluminum vial cap over the vial.
- Position the vial crimper over the vial evenly.
- Squeeze the vial crimper, first with one hand and then two hands.
- Repeat the steps to cap the rest of the vials.

◦ **Bottle Top Filtering**

- Bottle top filtering is significantly faster than syringe filtering. If you are brewing more than a small amount for personal use we strongly recommend this method.
- Open the pre-sealed plastic bag containing the bottle-top filter and media bottle.
- Connect the vacuum hose from the pump to the vacuum filter.

Project infrastructure

- The first step in this, or any project is to get together with your friends and comrades and see who would like to help make it a reality. If you don't have a network of trusted friends that are interested in helping try going to the closest anarchist bookstore or community center and see what projects you can help out with. Hopefully you will develop friendships and camaraderie with people through working together on shared projects. If all goes well eventually DIY estrogen can be one of the projects you all can add to your repertoire!
- Before/during/after starting a DIY estrogen project we would love it if you please send an email to mablesbakerymutualaid@proton.me! We would love to help in any way we can and learn from each other's experience. If nothing else it'll be nice to be in touch with other people working on the same project. In addition, if you come across any helpful materials we can include them in the public cryptpad repository.
- To work on this project on your computer we recommend that you get a Tails stick. This is a USB flash drive with the Tails operating system installed on it. Tails is a highly secure operating system that only connects to the internet via the Tor network and saves absolutely nothing to your hard disk. To download a copy of Tails have a friend that already has a Tails stick clone it. If you don't know anyone with Tails you can download it and read a full set of instructions at tails.boum.org. If this process seems overwhelming find a computer savvy friend to help you. Once this is done start your computer running tails and create an email account with which to contact vendors. It is strongly recommend that you only sign in to this email or anything else that directly relates to your DIY estrogen project from within Tails. Remember that Tails and Tor are not magic. If you sign into your personal email account at the same time as you sign in to your DIY estrogen email you will have associated the two. So, ONLY work on one project at a time when using Tails.
- To prepare for ordering and receiving shipments get together with your friends and find out how you will receive packages anonymously. The easiest way would be to get a friend that isn't directly involved in the project to receive the package for you. Ship it to them under their own name and then pick it up from them once it's arrived. Receiving packages on behalf of this project is a great

way for people to help the project while limiting their involvement. Other ideas include getting packages shipped to a friendly community center, or shipping to your own houses if the packages are spread out. For example maybe one person will order the benzyl alcohol and have it shipped to themselves and another person will order the benzyl benzoate, still a third person will order and receive the MCT oil. Doing it in this way reduces the chances that any investigation will be able to determine the pattern of purchases. If someone is receiving a package it's usually best that they pay for the package using their own payment methods and then you give them cash reimbursement. Some people can receive multiple packages if the things they're receiving are especially not sketchy, such as scales and glass jars. With all of this in mind, you should always try to reduce online purchases as much as possible. Wherever possible try to buy things with cash in person. Do you need to buy glass overflow jars online or can you get them from a thrift store with cash?

- Like all projects you will need an amount of money and/or resources to get started. Fundraise discreetly among friends to get the necessary money. We spent about \$1000 on lab equipment (the things we only had to buy once and can continue reusing) and about \$3100 on the consumable materials. This pencils out to about \$3 per 7mL vial (not including the cost of the reusable equipment), which can last 3-6 months per person depending on dosing.
- If you're able to we absolutely recommend trying to raise more than \$4100 to allow for fuck ups and unexpected problems. This money should be kept as cash in a secure location and should be well accounted for. Keep track of how much money goes in and how much has been spent on each item. This is mostly so you can see how much money you have left for things as well as where you can try to reduce expenses in the future, in addition to transparency.
- Your operation will also need a physical location to operate out of. An empty bedroom is big enough, though we don't recommend using a bedroom that anyone lives in. This is because this project requires a fairly large amount of stuff and it would be difficult to store everything in a room that's already filled with someone's personal possessions. You should also think about security here: wherever the project is based out of should be secure. We recommend finding a friend who lives alone with a spare room or a friendly community center that is willing to rent a room to a member of the project. Do not mention DIY estrogen officially, just rent it as a personal room. Draft a lease that

- Use a little of the benzyl benzoate to wash out the weight boat used to measure out the estrogen to minimize waste.
- Continue allowing the oil/estrogen/benzyl benzoate to stir until the estrogen dissolves completely. Monitor the temperature to keep it between 40 and 60 degrees C.
- The dissolving step can take upwards of 20 minutes.
- 6. **Turn off the heat and allow the solution to cool below 40 degrees C.**
- 7. **Add 8 grams of benzyl alcohol to the 1000 mL glass beaker.**
 - Do not add the alcohol until the solution has cooled below 40 degrees C.
 - Do not measure out alcohol until you're ready to add it to the solution in order to minimize evaporation.
 - Stir the alcohol into the solution for about 15 minutes.

8. **Bringing Up to Final Volume**

- If the total volume of the solution is less than 400 mL, slowly add more MCT oil to the solution in the 1000 mL glass beaker until the total volume of solution is 400 mL.
- Stir the solution for another 10-15 minutes.

9. **Uncapping Sterile Vials**

- Remove the plastic top from the pre-sterilized vials.
- Use the vial decapper to gently but firmly grip on the top of the vial seal. Go slowly and pull up gently rotating around the vial without fully removing the metal seal.
- Once the seal is uncrimped all around, use a pointed object, such as the cap for a needle, to push down on the stopper to prevent it being removed along with the seal. Pull up gently to remove the metal seal only.
- Wipe metal dust off the top of the vial stopper with an alcohol wipe if there is any after removing the seal ring.

10. **Filtering Options**

- **Syringe Filtering**
 - This method produces 55-60 vials depending on how precisely you filter

and will attract unwanted attention.

1. Rinse all your lab equipment with isopropyl alcohol (IPA)

- You can put the IPA in a squeeze bottle for easy rinsing the glassware.
- Use alcohol-dampened paper towels to clean your work table, scale, magnetic stirring hot plate etc.
- Allow all the equipment to dry. A (new, dedicated, sanitized) dish rack is helpful for drying the glassware.

2. Set up your magnetic stirring hotplate

- You will want to familiarize yourself with the hotplate and how to set/adjust its settings before you make your first batch.
- Set the hotplate to 45 degrees C.

3. Measure out 100mL of MCT oil.

- Place a 1000mL glass beaker on the magnetic stirring hot plate with a stir bar in the bottom.
- Using a 100mL glass beaker, measure out 100mL of MCT oil and pour it into the 1000mL beaker.
- Adjust the height of the temp probe so it is in the oil and not touching the sides or the bottom of the beaker. Adjust the stir speed as fast as it will go without the magnet spinning out.

4. Measure out 16 grams of estrogen powder.

- Place a weigh boat on your scale and tare it.
- Slowly pour 16 grams of estrogen onto the weigh boat with the help of a lab spatula. Break up any big clumps with the lab spatula.
- Pour the estrogen from the weigh boat into the MCT oil. It will be very clumpy at first. Continue letting the oil stir.

5. Measure out 180 grams of benzyl benzoate.

- Place a 100mL glass beaker on the scale and tare it.
- Measure out 100 grams of benzyl benzoate and pour it into the oil/estrogen solution, then another 80 grams of benzyl benzoate and pour it into the solution.

stipulates that your room is not to be entered into without your permission and leave a lock on the door. This both protects you and the community center. The community center is protected because in the event you get busted they have a lease to provide legal cover: they as landlords are not responsible for what their tenants do. For extra security you may wish to store different materials in different locations – glassware and lab equipment somewhere other than the raw estrogen, for example.

- Create a cryptpad spreadsheet to keep track of your finances. This includes managing your money and keeping track of any and all prepaid cards. Make sure to keep track of any/all of these cards, including where they are, how much is on them, what they've been used for so far, and the billing information attached to them. For example if a website requires you to put in a billing address for the card make sure you write down which billing address has been used for which cards. This is to prevent the card from getting rejected due to using contradictory information.
- Finally, a note on formatting. For the rest of this section we've provided detailed step by step instructions on how to produce and distribute hundreds of years worth of estrogen. For each section there are numbered points that say in bold the simple version of what to do. If you want to learn how to do things on your own you can simply follow those points and try to figure it out from there. If you'd like more info we've included bulleted notes on how exactly to do this. We've also tried to include how much to budget for each item, but prices may change drastically in the time between writing this zine and you making your own purchases. As always, do not assume that we're especially smart or know the best way to do things. We don't. In fact we greatly look forward to receiving emails from people saying things like, "why did you do X like this? You could have done Y thing instead and it's so much easier/faster/cheaper!" So please experiment, learn more than us and then let us know how you did it!

First steps

1. **Purchase and test estrogen. Cost: \$400-\$1500 (\$0-\$500 for the test. At the time of writing this zine we are seeing raw estradiol valerate powder for approximately \$5/gram and the price continues to fluctuate, so we actually**

have no idea what it might cost you when you read this).

- We bought 250 grams of estradiol valerate. Make sure you get specifically estradiol valerate. If you wish use a different form of estrogen you'll need to look up different recipes for that variant. There are lots of black market websites that sell estrogen, and there are lots of bodybuilder forums where people discuss the best vendors from which to purchase – they often sell feminizing hormones in addition to masculinizing hormones. We recommend spending some time on these bodybuilder forums – try searching “bodybuilder forum” on Duck Duck Go. You may need to create an account to see full discussion threads. Check recent reviews for specific vendors. Some forums forbid the discussion of illegal sourcing. You can also check transfem message boards for vendor recommendations. You will likely need to make an account on the vendor's website. There may be an option to pay with crypto in browser, or you may receive an invoice via email. Pay with cryptocurrency and make sure that the bitcoin itself was bought in a manner that can't be traced (e.g. with cash), or was appropriately tumbled. If you're unfamiliar with this process, ask a tech-literate friend to show you (be aware that this is somewhat tedious and requires lots of time waiting for crypto transactions to slowly process over tor). Cryptocurrency isn't inherently anonymous but with some extra steps to tumble it you can ensure your online purchase is pretty privacy-minded.
- It can take a month or more for your estrogen to arrive, especially if you ordered from an international source. Be patient. It may arrive in packaging that is not labeled as estrogen. This is normal.
- Once your estrogen arrives you will need to test it. This step is second because if the test doesn't come back clean (e.g. they sold you a bunch of baking soda) you will need to repeat the previous step before proceeding further. Go to toxassociates.com. Order a comprehensive drug analysis, tell them you want a quantitative analysis of estradiol valerate and a test for heavy metals. This is a step where multiple DIY estrogen crews can work together and save a lot of money. Assuming multiple chapters place an order of estrogen together only a single test will need to be performed for everyone. Thus, the costs for testing will be split between however many chapters go in on the order together. Pay for the test with a money order purchased with cash and await your results. You're looking for the results to

room is essentially a plastic cube/bubble with all seams sealed with clean room tape and filtered air getting blown in. The first bubble we built was just one big room. After the first handful of batches, we reassessed, took down the first bubble, and rebuilt it with an intermediary room in which to change into our Tyvek suits which never leave the bubble. After making the first few batches we got a better idea of what kind of layout would work best for our process. We taped a HEPA filter to the outside of a box fan, and patched in the fan to the wall of the workspace room in the bubble. So filtered air gets blown directly into the work room, pushed out into the changing room, and finally from the changing room to the outside. We aren't under the illusion that we can completely eliminate the introduction of all dust or outside contaminants into the bubble but the cleaner room is part of a multi-pronged approach to safety. In combination with testing the raw material, using a preservative, filtering the solution, and steam sterilizing the final product, a cleaner room reduces the likelihood of dust, bacteria, and other contaminants ending up in the estrogen.

Check out the video “I Built a Positive Pressure Clean Room for Cheap” on youtube¹¹ for a guide. If your cleaner room is intended to be temporary you might not necessarily need to build the wooden frame and can use plastic zipper doors.

Make a batch

Overview

The basics of making girl juice are as follows: measure out all of the raw materials, add them to a mixing container, heat and mix vigorously, filter into vials, and sterilize the vials in the pressure cooker. Based on our experience the most tedious part of this process is filtering into the vials – this took much longer than actually making the batch itself. The process is actually pretty straightforward, it just takes a while to filter. You should clear your afternoon for this and plan on it taking about 4 hours. You might also want to start with a smaller batch, like 100mL, just to get familiar with all the parts of the procedure. Keep in mind that this process will likely be messy and will involve some amount of estrogen solution spilling over your work environment. You should clean up as you go. Having paper towels and isopropyl alcohol on hand is helpful. You should also not work by open windows where a passerby will see what you're doing. It will look like you're making drugs

¹¹ <https://www.youtube.com/watch?v=eoyXKjxQYCA>

- If you can't afford this, a stovetop pressure cooker which can reach 15 psi is also a good option. A regular Instant Pot can potentially work, but you would need to run the sterilization cycle for at least 2.5 hours instead of 1 hour.

8. Instant Pot Mesh Steamer. Cost: \$27

- Optional. Nice for keeping vials higher up in the instant pot. You can use the canning rack however for vials you will need something else to support them. Don't let them touch the bottom of the instant pot.

9. 20mm Vial Crimper. Cost: \$40

10. Still Air Box. Cost: \$34

- Strongly recommended, mandatory if you have pets, the area is dusty or if you don't set up a positive pressure clean room.

11. Paper towels. Get a handful of rolls of disposable shop towels from a hardware store or automotive store – these shed less fibers than regular paper towels.

12. Clean room tape (2 rolls). Cost: \$30-\$100. Polyethylene is the higher quality option but much more expensive. PVC can work and is way cheaper but is stiffer/more annoying to work with.

13. 6mm clear plastic sheeting (100 ft by 10 ft). Cost: \$53

14. Zip ties

15. Zipper door. Cost: \$25

16. 20" x 20" Box fan. Cost: \$30.

17. 20" x 20" MERV 13 Air filter. Cost: \$25.

18. Tyvek painters suits (one per person). Cost: \$10-\$25 each.

19. Joanlab 10mL/min vacuum pump. Cost: \$160.

- Buy this if you intend to do bottle top filtration instead of syringe filtration.

20. Vial Decapper. Cost: \$35.

- Used to remove caps from pre-sterilized vials. Don't pierce the stoppers on pre-sterilized vials as it is unsafe to autoclave them after doing that.

Build your "cleaner" room

You can build a positive pressure "cleaner" room with materials commonly found at the hardware store while you're waiting for the raw estrogen and other supplies to arrive in the mail. Set aside a full day for building the room. A "cleaner"

ideally say >99% estrogen and no heavy metals or anything else detected. If you live somewhere that has an anonymous harm reduction drug checking service, this is a great alternative option – this is what we did. We found a free one that provided instant results via FTIR testing and a second round of results about a month later via GCMS. You can find a directory of North American drug checking programs at <https://harmreductionlab.com/drug-checking-directory-1>. We owe a great debt to the decades of struggle by drug users for decriminalization and access to harm reduction supplies and services!

Purchase consumable materials

Links to examples of most of these materials can be found on HRT Cafe's homebrew injection tutorial¹⁰ We have included approximate cost at the time of spring/summer 2025 but the prices are extremely unstable.

1. Purchase 1 gallon of MCT oil USP. Cost: \$60-\$110.

- You can buy bulk MCT oil online from laballey.com and various other vendors. Make sure it is USP grade. We used coconut-based MCT oil rather than cottonseed oil after hearing of multiple people experiencing allergic reactions to cottonseed oil. Some people are allergic to coconut as well so we made sure to note on the finished vials that they contain coconut-derived ingredients. It's up to you whether you want to use MCT oil, cottonseed oil, or castor oil. See information on filters further on for compatibility of specific filter materials with specific oils. (We also found the MCT-based hormones to be runnier than our prescribed cottonseed-based hormones and therefore easier to draw up and inject. Castor oil is EXTREMELY thick and time-consuming to filter, we don't recommend it unless you're unable to source any filters other than PVDF filters.)

2. Purchase 500mL of benzyl alcohol USP. Cost: \$31.

- Benzyl alcohol is a very common chemical and can be found from a number of websites like Med Lab Supply.
- USP stands for United States Pharmacopoeia and refers to a standard of purity for chemicals. All chemicals should be sold to you as USP. If you have

¹⁰ <https://hrtcafe.net/Homebrew/injection-tutorial.html>. A backup of the information from this site is available at <https://tinyurl.com/homebrewbackup>.

the money you may wish to send all of your reagents off for testing in addition to the estrogen. We did not test our chemicals other than the estrogen.

3. Purchase 500mL of benzyl benzoate USP. Cost: \$16.

- Follow the steps for benzyl alcohol but with benzyl benzoate.

4. Purchase ½ to 1 gallon Isopropyl Alcohol 99%. Cost: \$25

- Do NOT use “technical grade” isopropyl alcohol. It can leave an oily residue and contaminate your HRT!
- Note: You don’t need to buy such a large amount for this tutorial, however if you plan to make multiple batches over time you may wish to stock up.
- We use 99% IPA because it is better at dissolving grease and grime which may be present on surfaces, sterilization of surfaces is done via autoclaving or by using presterilized components. For wiping down gloves you should use sterile alcohol swabs which contain 70% alcohol.

5. Desiccant packs. Cost: \$10

- This will absorb any moisture that gets into your package of raw powder and is especially helpful if you don’t use all your raw powder at once.

6. 18g Leur Lock Needles – box of 100. Cost: \$8.

- In some states you can easily purchase these online without any kind of medical license. You can also buy them from veterinary medicine websites. We like the kind with the “leur lock” fitting for the needles.

7. 30mL Sterile Syringes – box of 100. Cost: \$42.

- Same purchasing process as the 18g leur lock needles.

8. Pre-sterilized Vials. Cost: \$407 for 370 vials.

- Smaller vials are less likely to get contaminated or cored from multiple reuses. We went with 7mL vials, and we don’t recommend any larger than 10mL vials.
- You can divide the total volume of estrogen you intend to make by the volume of the vials you choose to determine how many vials to order. In our case we got 370 of the 7mL vials.
- Tip: amber vs. clear vials: Clear vials are easier to inspect for particulates or discoloration of the vial contents. Amber vials protect their contents from

light making it less likely to degrade, but you won’t be able to check for discoloration prior to drawing.

9. Nylon Sterile 0.22 µm Syringe Filters. Cost: \$90 for 100.

- Only use Nylon syringe filters if your chosen carrier oil is MCT oil, other filter membranes are less compatible for our purposes and could dissolve into your medication. They must be individually packaged and sterile. Only use 0.22 µm or 0.2 µm filters, nothing larger or smaller. We do not recommend the syringe filtering method for castor oil.

OR

Nylon 250mL Sterile 0.22 µm bottle-top filters with included media bottles. Cost: \$75.98 for 12

- Use these if you’re using MCT oil and want to do large batches without the time and energy commitment of syringe filtration.

OR

PVDF 250mL Sterile 0.22 µm bottle-top filters with included media bottles. Cost: \$146 for 18

- Use these if you’re using castor oil. They will save you the physical exertion of syringe filtration but take FOREVER, 6+ hours per 250mL. We only used castor oil (and PVDF filters) when nylon filters were unavailable precluding us from using MCT oil.

10. Weight boats. Cost: \$16.

Purchase tools

1. Lab Spatulas. Cost: \$10
2. AWS Gemini 20 Milligram Scale. Cost: \$35
3. Magnetic Stir Bars. Cost: \$10
4. Glass Beakers. Cost: \$15-\$50
 - We will use the 100mL and 500 mL ones.
5. Magnetic Stirring Hot Plate. Cost: \$50
 - Buy the 380 °C version that comes with a temperature probe
6. Squeeze Bottles. Cost: \$17
7. Instant Pot Pro Plus. Cost: \$200
 - Do NOT use a regular instant pot. It must be a 15 psi pressure cooker.
 - If you have an Instant Pot Max (discontinued), that works too.