

TransNatural for Professionals

“You cannot forget if you would those golden kisses all over the cheeks of the meadow, queerly called dandelions”

- Henry Ward Beecher (1887), Star Papers

TransNatural, is a class to support the trans body and spirit with herbs and nutrition, as well as diversity training for using inclusive, non-judgemental, respectful language and intake forms as healthcare providers for trans-bodied people.

The class will explore hormone maintenance with natural remedies, what can be achieved using herbs instead of pharmaceuticals for gender modification, and/or using herbs to mitigate side effects of synthetic hormones.

TransNatural will help herbalists and other health professionals understand

- the socio-political- economic lack of access to medical care for trans-bodied people
- why trans-bodied people don't seek out medical care and what you can do as a health professional to provide safe access
- how offering respectful language can go a long way to help individuals feel heard, honored, and allow them access to health care
- how to change intake forms and phrase reproductive health questions to be inclusive of diverse genders and bodies
- the hormonal and physical shifts that can be expected via pharmaceutical vs. herbal protocols
- herbal support for trans people on pharmaceutical hormones for mitigating side effects
- the language of respect for working with non-binary and untraditionally gendered bodies

For myriad reasons there is not enough information nor health resources available for trans peoples. With this class we begin to bridge the gap of accessibility and inequality. This class will help the health professional be more equipped to provide safe, respectful care to marginalized communities.

Kara Sigler has been working with trans clients since she began her herbal practice in 2006. The printed information available at the time on herbal hormone-replacement therapies and herbal support for trans folks on synthetic hormones was non-existent. Much of the literature that is available on herbal hormone help is based on studies of cis-gendered men and women. There is starting to be a small collection of literature on clinical experiences of working with trans-folks, but there is still a need for more culturally adept practitioners and information sharing among practitioners who currently see trans clients.

DSM V- changed “*Gender Identity Disorder*” to “*Gender Dysphoria*”

This allows patients to get treatment for their “dysphoria”, which means access to hormones and surgery as the “cure” for the mental/emotional disharmony, rather than being diagnosed as mentally ill because of the incongruence. Homosexuality was diagnosed in the DSM as an illness until 1973, and conditions pertaining to homosexuality were not entirely removed until 1987.

Example Client Intake forms with appropriate language for allowing people to self-identify

San Francisco Herbalist Intake Form

Kara Sigler, RH (AHG)

Herbal Consults and Bodywork

Name: _____

Pronoun Preference: _____

Address: _____

Email: _____

Phone: _____

Date of birth: _____

Emergency Contact name, relationship, and phone: _____

Physician name and phone: _____

Why are you seeking my support? _____

Medications currently taking: _____

Supplements and Herbs currently taking: _____

Referred by: _____

COUPLES' INTAKE FORM- Therapist

Please provide the following information and answer the questions below. Please note: information you provide here is protected as confidential information.

Each of you should fill out this form separately and bring it to our first session.

Name: _____

Birth Date: ____ / ____ / ____ Age: ____

Gender Identification: _____ **Preferred Pronoun:** _____

Sexual Orientation: _____

Address: _____ Home Phone: _____ May I leave a message? ☐Yes ☐No

Cell/Other Phone: _____ May I leave a message? ☐Yes ☐No

Email: _____

May I email you? ☐Yes ☐No

*Please note: Email correspondence is not considered to be the most confidential medium of communication.

Referred by (if any): _____

Relationship Agreement: ☐ Monogamous ☐ Monogamish ☐ Polyamorous ☐ Open

Please list any children/age and their parents if different from you and your current partner: _____

Michael Moore's Constitutional Intake modified to be gender-neutral with Sexual/Reproductive Health questions

Constitutional Intake Form

NAME _____ DATE ____/____/____

UPPER GI

- ☐ Sometimes nausea in mornings
- ☐ Sometimes nausea in evenings
- ☐ Sometimes excess salivation
- ☐ Mouth frequently too dry
- ☐ Duodenal ulcer
- ☐ Stomach ulcer
- ☐ Sometimes foul burps
- ☐ Butterflies in stomach
- ☐ Seldom eat breakfast
- ☐ Often don't finish meals
- ☐ Often eat to calm down
- ☐ Receding gums
- ☐ Frequent use of alcohol
- ☐ Frequent poor appetite
- ☐ Strong, demanding hunger
- ☐ Bitter taste in morning
- ☐ "Dragon breath" in morning
- ☐ Acid indigestion at night
- ☐ Frequent mouth or cold sores
- ☐ Sometimes difficulty in swallowing
- ☐ Indigestion after eating

LOWER GI

- ☐ Stools loose with gas
- ☐ Constipation with gas
- ☐ Frequent constipation
- ☐ Digestion unusually rapid
- ☐ Loose stools when tired/stressed
- ☐ Light colored, hard stools
- ☐ Dark, soft stools
- ☐ Quick defecation after eating
- ☐ Intestines often bloated
- ☐ Constipation with hemorrhoids
- ☐ " w/ painful defecation
- ☐ " w/ hard, marbly stools
- ☐ " w/ fully formed stools
- ☐ " alternate w/ diarrhea
- ☐ Frequent need for laxatives
- ☐ Tongue often coated

LIVER

- ☐ Dry, even scaly skin
- ☐ Moist, sometimes oily skin
- ☐ Hives from food or drugs
- ☐ Hay fever or asthma
- ☐ Craves proteins, fats
- ☐ Craves fruit or sweets
- ☐ Frequent trouble digesting fats
- ☐ Acne on face AND buttocks
- ☐ Seems to have low blood sugar
- ☐ Had hepatitis in past
- ☐ Frequent use of alcohol
- ☐ Work with solvents
- ☐ Psoriasis, eczema, dermatitis
- ☐ Frequent minor illnesses
- ☐ Fever w/sweat when sick
- ☐ Don't sweat when sick

RENAL

- ☐ Standing too quickly makes pulseroar in ears
- ☐ Standing too quickly causes faintness, dizziness
- ☐ Wakes up at night to urinate
- ☐ Frequent flushing or blushing
- ☐ Water retention with change of weather
- ☐ Moderate high blood pressure, craves fats
- ☐ Moderate low blood pressure, craves sweets
- ☐ Frequent thirst
- ☐ Craving for salt
- ☐ Urine always light colored
- ☐ Urine usually darker

LOWER URINARY TRACT

- ☐ Frequent urination, small amounts
- ☐ Infrequent urination, copious
- ☐ Sometimes dribbles urine afterwards
- ☐ Frequent bladder infections
- ☐ Demanding and sudden need to urinate
- ☐ Mucus in urine
- ☐ Benign prostatic hypertrophy (males)
- ☐ Dull ache after urination

REPRODUCTIVE - ALL

- ☐ Sweat freely with strong scent
- ☐ Oily skin, facial acne
- ☐ Dry skin, cold hands and feet
- ☐ Cycle more than 28 days
- ☐ Cycle less than 28 days
- ☐ Water retention before menses, hips, breasts
- ☐ Water retention before menses, feet, hands
- ☐ Craves fats, proteins before menses, usually
- ☐ Craves sweets before menses, usually
- ☐ Sides of breasts tender before menses
- ☐ Miss some periods
- ☐ Menses slow starting with cramps
- ☐ Palpitations before menses
- ☐ Menstruation lengthy, frequent cramps
- ☐ Menstruation short, defined, few cramps
- ☐ Frequent Class II Pap Smears
- ☐ History of PID, cervicitis
- ☐ Miscarriages, problem pregnancy
- ☐ Period early w/altitude change
- ☐ Period late w/altitude change
- ☐ Tried, but couldn't handle birth control pills
- ☐ Frequent candida/type infections.

- ☐ Frequent cannabis user
- ☐ Pain or ache after orgasm
- ☐ Benign prostatic hypertrophy
- ☐ Difficult maintaining erection even if you feel in the mood

FROM: Tom Waddell Health Center transgender team

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Understanding Patients' Perspectives

The term “transgender” is not a pathological one, but one of self-identification, describing a number of identities that do not conform to the anatomical gender of birth. The term gender dysphoria refers to individuals who live with a high degree of distress/disconnection toward their gender image and can be diagnosed within the realm of gender identity disorders. Of note, the fact that there exists a psychiatric diagnosis of gender identity disorder / gender dysphoria is a contentious issue within the professional and transgender community.

Patients request hormone therapy in order to:

- Reaffirm their individual sense of gender (gender identity), and
- Develop physical characteristics that enable the demonstration of that identity (gender expression) to the world at large.
- For each patient, the decision to come to our TG clinic is a major and possibly life-changing event.
- Many patients have done research about the therapies or already know other transgender persons using hormones. Most are definitive in their decision and have thought about it for years. Usually they are very specific in what they want or need from therapy.
- Many present with the desire of a full transition, hoping for maximum doses of hormonal treatment as fast as possible.
- Others want to proceed slowly in order to have more control of the effects.

- Some MTF (male to female) want to maintain erections, while others want to eliminate them.
- Some people want to express an androgynous or gender queer identity; others' goals are to develop a strong male or female identity.
- Some patients have access and choose from different surgical interventions.
- Some patients want surgery but don't have the access.
- Some patients don't want surgery.

Exploring needs or desires helps medical providers to individualize treatment and identify the patient's perceptions of the possibilities and limitations of treatment. Patients often have unrealistic expectations; education about what to expect from treatment is imperative in the first visits.

(see Appendix A for Tom Waddell Clinic Excerpt on HRT *Protocols for Hormonal Reassignment of Gender*)

TRANS NATURAL

Definitions- LGBTQQI

Sex (6), Sexuality, Gender- fluid

SEX	GENDER	SEXUALITY
Chromosomes. Male/ Female	Presentation	Sex/gender of who you sleep with
Hormones	Masculine	Straight
Genitalia- internal/external	Feminine	Gay, lesbian, bisexual
Combinations and Intersex individuals	Queer, tomboy, effeminate, butch, femme, etc	Queer, pan-sexual

TRANS Identified

MTF	FTM
Male-to-Female transitioned	Female-to-Male transitioned
Identify as FEMALE	Identify as MALE
Pronouns- she/ her/ hers	Pronouns- he/ him/ his

Non-binary Pronouns

They/ zi/ zir/ ci

Generational differences-

TRANS SEXUAL	TRANS GENDERED	GENDER QUEER
Surgery	With or without surgery	Spectrum

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Hormones	On or off hormones	Sex and/or gender non-conforming
MTF, older	FTM, younger	younger
Identify with "opposite sex"	More inclusive- identify with "opposite sex"	Identify w/ more than binary system of sex/gender

Chromosomal combinations possible-

XX	XY	XO
XXX or XXXXX	XXY or XXXY	XXY
Some labeled "syndromes" -culturally different	Others don't affect noticeably	

CIS- Gendered

latin **cis** = "on the near side of..."

No longer appropriate to use "biological sex"

- Gender/sex experience and expression match sex assigned at birth.
- Match between gender assigned at birth, body genitalia and secondary sex characteristics, and personal identity.
- Assigned sex at birth. 1/1000 babies surgically assigned at birth. External genitalia, if less than 3cm = clitoris; more than 5 cm = penis. In between length, assigned and surgically altered by Dr.'s. Only recently let parents decide.
- New to be able to test chromosomes; still not done routinely before assigning a sex to an infant.

Pronoun preference-

Important to be culturally sensitive/ competent.

Not sure, ASK!

GENETIC VARIABILITY-

Important! BioDiversity. Important for survival.

Monocrop vs Permaculture

6 scientifically proven distinct Sexes.

Not our only job to reproduce anymore.

CULTURE VARIABILITY-

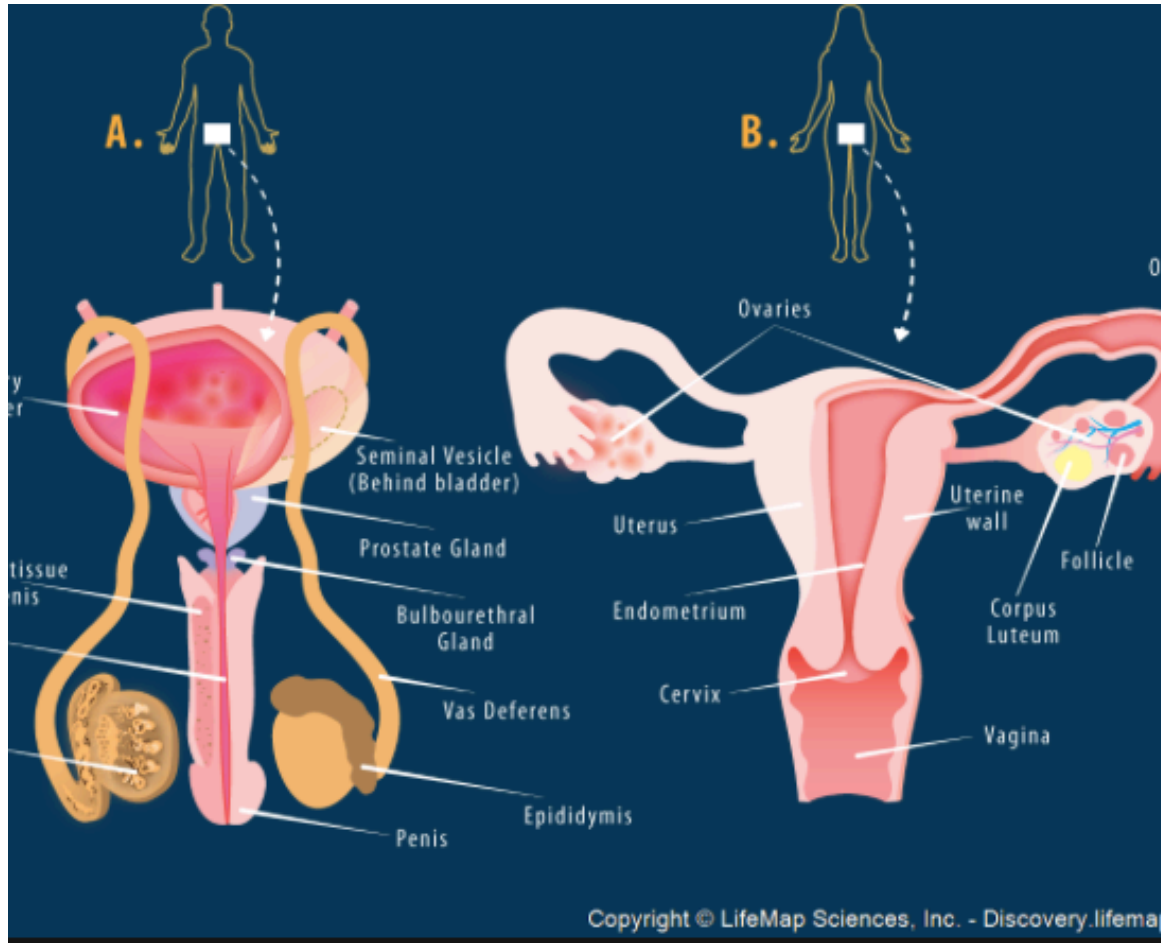
Gut, skin biodiversity of microbes

- Human BioNome project
- Health of mental and emotional bodies
- Impact hormones (emotions)

Anatomy-

Human bodies ALL contain the same tissues and the same sex hormones. These tissues develop differently in utero depending on chromosomal makeup, which

informs the amounts of sex hormones each body produces. All human bodies produce the same sex hormones in differing quantities- sometimes analogous to that individuals assigned sex at birth, but mostly individuated to that person. A second round of sexual development happens at puberty with the onset of sex hormones.



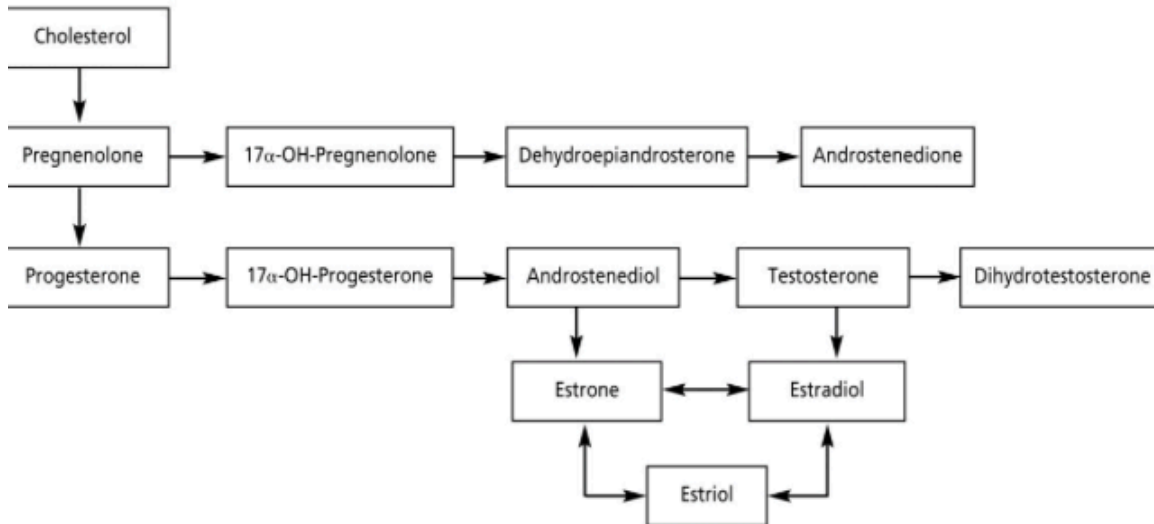
Physiology-

Hormones, oils- Steroid hormone precursor is CHOLESTEROL- lipid based sterol
Endocrine System-

- ALL human bodies start with a FEMALE baseline of developmental growth
 - 8 weeks of development of fetus- GONADS differentiate, based on presence or absence of Y chromosome
 - 12 weeks of development of fetus- all EGGS are present for the life of a cis-gendered female. Fully developed until next stage at puberty.
 - *All human bodies* produce the *SAME* steroidal hormones in differing quantities. Estrogens, Progesterone, Testosterone and other Androgens
 - *All human bodies* produce the *SAME* glycoprotein hormones. LH, FSH. These hormones act in similar ways with slightly different results depending on the body's gamete makeup and steroidal hormone proclivity
- Example:

FSH→ increases Estrogen and Sperm production
LH→ increases Progesterone and Testosterone production

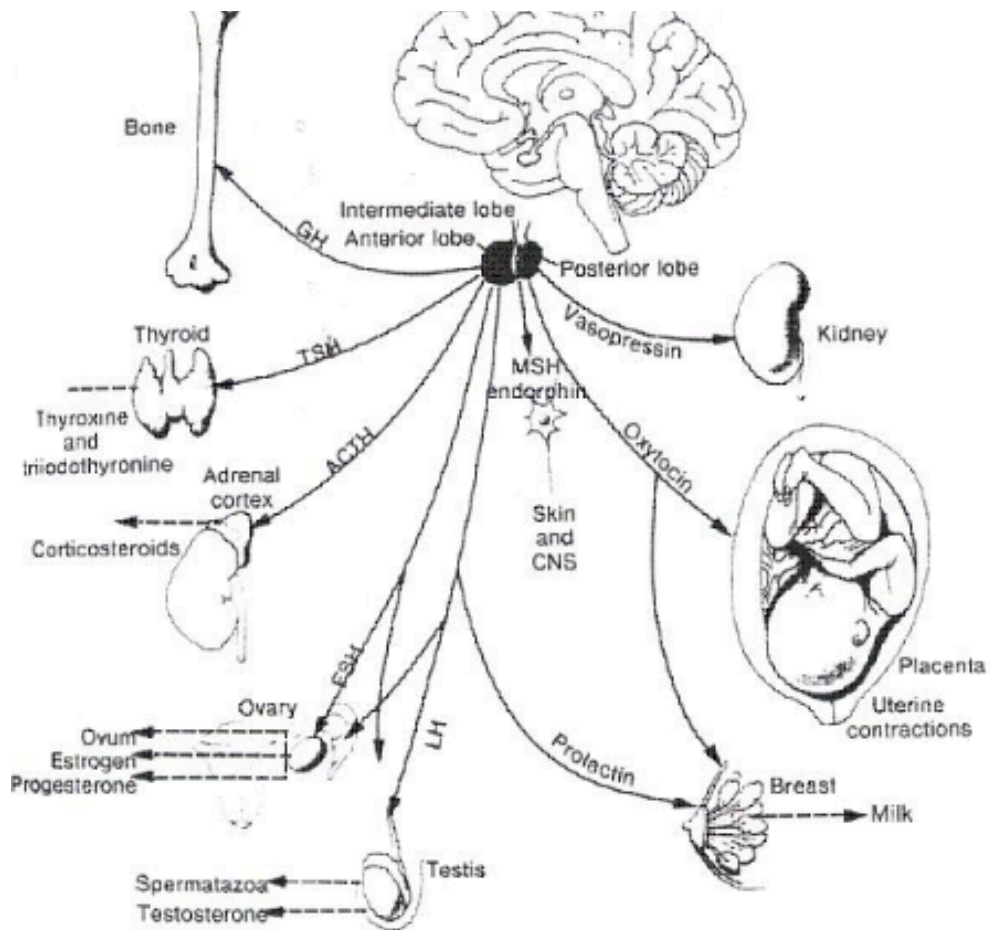
Healthy **Reproductive Hormone Cascade** in *EVERY* human body



NOTE:

- Cholesterol is building block of ALL reproductive steroidal hormones (grandparent)
- Androstenediol and Testosterone convert to Estrone and Estradiol- the enzyme responsible for this is Aromatase
- Progesterone is the progenitor (parent) of both Androgens and Estrogens

Anterior Pituitary Hormonal actions from the brain on the body tissues- Hormones outsource each other. Stress→ Adrenals get all the hormone building blocks available. Affects Reproductive hormones, Thyroid hormones (metabolism), blood sugar metabolism (glucocorticoids and insulin) etc.



(Illustrating the Chronic Stress Response/Pregnenolone Steal)



	MTF-Hormones	MTF-Hormones	Herbs	FTM-Hormones	FTM-Hormones	Herbs
	Increase	Decrease	Change	Increase	Decrease	Change
Acne				x		X
Hair				X body	x head	x
Fat/ muscle distribution	X fat- Hip, thighs, belly, breast, butt		X	x muscle mass-shoulders, torso	x fat- hips	X
Sex drive	x with comfort in body	x with hormone levels changed	x	x!		x
Bones	No change					

	after primary puberty- 12-24 years old					
Sweat/secretion /pheromones		x		x		
Menstruation	No change- no eggs				Cessation	No change

DRUG and Surgical options for sex- reassignment, hormonal reassignment of gender- see Appendix A Tom Waddell Clinic Excerpt on HRT *Protocols for Hormonal Reassignment of Gender*

TRANS identified youth-

- New drugs to stop onset of puberty
- Allows youth and their parents more time to make the commitment to fully transitioning before their body changes at puberty with many irrevocable body transformations that would require surgeries later to allow them to “pass” safely as their chosen Sex/ Gender.

Steroid Hormones in the human body-

- derived from cholesterol- a lipid based sterol
- include sex steroids- estradiol, estriol, estrone, progesterone, testosterone, androstenediol, DHT, DHEA
- glucocorticoids- cortisol, prednisone, hydrocortisone
- mineralocorticoids- aldosterone

Androgens-

- have two primary effects
- *Anabolic*- result in stimulation of muscle and bone growth as well as metabolic changes
- *Androgenic*- produce typical male secondary sex characteristics

SHBG-

- Sex Hormone Binding Globulin
- Binds the majority of blood androgens
- Androgens bound to SHBG are neither bioavailable to exert androgenic or anabolic effects, nor vulnerable to metabolism
- Cis-gendered women (non-transgendered women) tend to have twice the circulating levels of SHBG then cis-gendered men. This means free androgen levels are lower, but hormones have a longer half life

- Cis-gendered men (non-transgendered men) tend to have lower levels of SHBG, thus more free androgens circulating in the blood which is bioavailable, although metabolism and destruction occur more rapidly (Midnight)

Plant based hormone-analogues

Steroidal-saponins- plant steroid precursors

Not actively anabolic themselves, building blocks

Phyto-estrogens- contain genistein, lignans and isoflavones. Bind to estrogen receptor sites in the body.

Phyto-androgens- androgenic anabolic hormones; bind to testosterone receptors in the body.

Phyto-testosterone- identical molecularly to human testosterone

Stimulate T production in the body

Phyto-progesterones- help maintain hormone levels with less fluctuation. Increase breast tissue topically.

By increasing progesterone & testosterone naturally- you can increase masculine characteristics, including hair growth, lower voice, muscle build, but can't stop menstruation.

Hormone blockers-

testosterone production blockers-

- vitex, saw palmetto, chinese skullcap

androgen receptor blockers

- spearmint, licorice

estrogen removal blockers-

- helps breast growth
- grapefruit juice

estrogen blockers-

- nettle root and leaf
- maca
- Chrysin- flavonoid in passionflower, honey, propolis

Aromatase-Inhibitors-

- Aromatase- enzyme that under normal circumstances converts testosterone into estrogens
- inhibitors allow Testosterone to stay in the blood stream; does not convert to estrogens
- selenium, melatonin, zinc

- grape seed, green tea
- citrus flavonones- orange and grapefruit RINDS, tomato skins

Estrogen Elimination-

- probiotics- prevent glucuronic acid from unbinding estrogens
- fiber and lignans
- magnesium- methylation to excrete
- C-2 pathway- breakdown and elimination of estrogens from the body in a healthy way- fish oil, phytoestrogens, B vit, cruciferous vegetables→ DIM compound

Estrogen lowering foods-

- red wine, grapes, mushrooms, olive oil (converts cholesterol into testosterone), cruciferous vegetables
- maca, chia seeds, oats, wild oats, green tea

Adaptogens-

- Being under constant stress creates more adrenaline and cortisol, therefore suppressing androgen production and disrupting endocrine function
- Important to nourish the kidneys and adrenals, which produce 90% of all testosterone in the body.

Nervines- relax the nervous system to allow greater health overall and better endocrine functioning

Alteratives- cleanse the blood and increase pathways of elimination without decreasing effectiveness of synthetic hormones

Hepatics- metabolize testosterone and other steroidal hormones

We will discuss these herbs in more detail, including their phyto-hormone makeup...

Feminizing herbs: wild yam, black cohosh, partridge berry, fenugreek, dong quai, red clover, kudzu, alfalfa, Vitex, Saw Palmetto, Spearmint, Chinese skullcap, Raspberry leaf, Nettle, Comfrey, Bee Pollen, Marjoram, Fenugreek, fennel, hops, Anise, Sage, (Prescription for Nutritional Healing)

Over 300 plants with phytoestrogens-

Estrogenic foods:

All Legumes contain genistein, lignans and isoflavones- yellow and red lentils, black beans, lima beans, anasazi beans, kidney beans, black eyed peas, mung beans; grapefruit juice, flax seeds, sesame seeds (James Duke)

Moon connection/ cycles and rhythms- mugwort, nettle, raspberry leaf, pennyroyal, yarrow, motherwort

Progesteronic herbs (hormone balancer):

Vitex

Placenta

Phytoestrogens-

Protect the body from XENO-estrogens and excess ENDOGENOUS-estrogen

- contain genistein, lignans and isoflavones
- bind with estrogen receptor sites in the body- gentler than estrogens or xeno-estrogens
- increase SHBG levels which binds to free estrogens, protecting the body from excess estrogens
- decrease Aromatase enzyme- prevents testosterone from turning into estrogens; maintains more testosterone in the body
- promote C-2 pathway of elimination

Androgenic foods-

- increase progesterone and testosterone
- increase masculine secondary sex characteristics such as
~ hair growth, lower voice, build muscle, increase libido (won't stop menstruation)

Celery, cucumber, corn, kale, radishes, garlic, rosemary, parsley, thyme, oats, pine nuts, red meat (hormone free!), oysters, basil, pumpkin seeds, spirulina, oats, pomegranate juice

Androgenic Herbs: Sarsaparilla, Damiana, Ashwaganda, Ginseng, Tribulus, Wild Oats, Rosemary, Ho Shou Wu, Plantain, Gallium "ball builder", White Sage, Sassafras, Ginger, Star Anise, Garlic, Pine Pollen, Vitex, Prickly Ash, Yohimbe, Horny Goat Weed, Eleuthero, Astragalus, Kola Nut, Nettle root

Transmasculine spectrum Avoid-

- Beer- german beer purity act 1516, Hops
- Soy
- Plastic use, especially with food
- Xeno-estrogens- endocrine disruption, mimic estrogens with more toxicity, cause testosterone to convert to estradiol, interfere with production of testosterone by binding free, cancer causing

Mitigating Negative Effects of Synthetic Hormones-

Support organs of elimination

Support organs of metabolism and methylation- Liver and Kidneys

Support long term effects on organ systems

- testosterone affects CardioVascular system, PCOS repro/lymph system stagnation

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- estrogen affects increased risk of cancers

Self-care

Maintain immunity, lymph flow, hydration with electrolytes and good oils, building blocks for healthy hormone production with raw oils and fats

Injection wound site hygiene

Uterine Massage, lymph scrubs,

Bitters, Aromatics

Inspire regular gynecological check ups, blood work for hormone levels

Common Side Effects of HRT Testosterone use-

- body hair growth, voice deepens, muscle and bone build up, hair thins/hair loss, acne
- cessation of menses
- increased libido
- coarser skin, redistribution of fat and muscle mass
- clitoromegaly (enlargement of the clitoris)
- cardiovascular stress, increased risk of heart disease, hypertension
- higher blood cholesterol levels
- kidney and liver stress
- reproductive system stagnation- fibroids, cysts, PCOS, increased risk of ovarian and uterine cancer, bladder incontinence
- Polycythemia (high RBC)
- Slower wound healing
- Sleep apnea
- Inflammation (steroid)- tendonitis
- Emotionally first few months- adolescent boyhood and menopause at the same time
- Increased risk of osteoporosis (especially if oophorectomy)

“While these risks are important to be aware of and monitor, it is also essential that as a practitioner, you support the choices of your patient and understand that their mental health and well-being may depend on their gender presentation, and therefore is a healthy choice for them to take steroids. However, studies on the long-term side effects of HRT are not available, so I suggest using complementary herbs to both support the use of HRT and also to achieve masculinization, so patients can lower their doses.” (Midnight)

Physically “passing” may also be a safety factor to consider, literally life or death, or the ability to gain housing and employment.

Drug Interactions-

- Paxil
- -ozoles (anti-fungals)
- Tagamet- changes uptake and testosterone levels

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Better to inject testosterone. Harder on liver to use transdermal or oral/sublingual.

Common Side Effects of HRT Estradiol use-

- Skin softens, breast growth, fat and muscle redistribution,
- increased risk of estrogen-dependent cancers, including breast
- increased risk of BPH
- Osteoporosis
- Lowered libido
- Increased risk of stroke and DVT
- Increased risk of dementia
- Hepatic impairment
- Cautions if patient has impaired cardiovascular disease, hypertension, diabetes mellitus, smoker, hypertriglyceridemia, obesity, near surgery or prolonged immobilization, gallbladder disease, hypothyroidism, sensitive to fluid retention, hypocalcemia, migraine, chorea, seizure disorder, asthma, SLE, porphyria, hepatic hemangiomas, hereditary angioedema
- Pancreatitis
- Cholestatic jaundice
- Gallbladder disease
- Depression
- Migraine
- Anaphylaxis
- Ischemic colitis
- Edema
- Elevated BP
- Mood changes
- Candidiasis
- Glucose intolerance
- Weight changes
- Contact lens intolerance
- Vision changes
- Rash
- Alopecia
- Hirsutism

Drug Interactions-

- Contraindicated/Avoid- tranexamic acid, anastrozole, dabrafenib, exemestane, fenofibrate, gemfibrozil, letrozole, ursodiol
- long list of medications to monitor or advise caution with concomitant therapy

Easier to achieve desired effects from testosterone HRT than from estradiol HRT because the human form begins as female and can transition toward the masculine-spectrum with more visible and longer-term effects. Transman often have an easier time “passing” than transwomen.

RECIPES for Transmasculine spectrum individuals (Midnight)

TEST-O

I N G R E D I E N T S

3 cloves garlic
2 cups solidly packed fresh basil leaves (or 1 cup solidly packed basil leaves and 1 cup solidly packed parsley or spinach)
3/4 teaspoon coarse salt
freshly ground pepper
1/2 cup extra-virgin olive oil
1/3 cup pine nuts
3/4 cup Parmigiano Regiano (optional)

You can use a food processor or a large, sturdy mortar and pestle.

If using a blender, place all the ingredients (except the cheese). Blend to a smooth puree & put in a bowl, adding and beating in the cheese using a wooden spoon. Cover and set aside. At this point you can refrigerate the pesto and it will keep, refrigerated for at least a week.

Mortar & Pestle

Add the garlic and the salt and pound until smooth. Add the pine nuts and grind, then add half the basil and grind to a paste. Add the rest of the basil and grind till smooth. Now, whisk in the oil with a wire whisk. Transfer to a bowl, and the parmigiano and beat the cheese in using a wooden spoon....

ANDROGENIC GREEN DRINK

(adapted from Stephen Buhner's *The Natural Testosterone Plan*)

2 stalks of celery
1 c. corn kernels
½ cucumber
1 large fresh kale leaf and/or ½ c spinach (optional: radishes, ginger, beets...)

DAMIANA LOVE ELIXIR

(adapted from Rosemary Gladstar)

Ingredients

1 oz dried damiana leaves
2 c vodka or brandy
1/12 c water
1 c honey

vanilla extract
rose water (to taste)
chocolate (syrup, cocoa powder)
optional: cinnamon, cayenne, lemon grass etc...)

1. Create your love intention. (Suggested: Light a candle, masturbate, hold the intention in your mind)
2. Soak the damiana leaves in vodka or brandy for 5 days. Strain and reserve the liquid. You can shake it up daily thinking of your love intention.
3. Soak the alcohol drenched leaves in the water for 3 days. Strain and reserve the liquid.
4. Over low heat, gently warm the water extract and dissolve the honey in it. At this point you can get creative and add chocolate, cinnamon, ginger or cayenne- whatever you are called to add!) Remove from the pan and add the alcohol and stir well. Pour into a bottle and add rose water, vanilla. You can let it mellow for a month or so, as it gets smoother with age.
5. Drink it up and feel the love.

NETTLE BEER

Adapted from Susun Weed's recipe

Ingredients

1 lb raw sugar
2 lemons
1 oz cream of tartar
5 qt water
2 lbs nettle tops
1 oz live yeast

Place sugar, lemon peel (no white), lemon juice, and cream of tartar in large crock. Cook nettles in water for 15 minutes (careful! Wear gloves or use tongs or get stung). Strain into crock and stir well. When this cools to blood warm, dissolve yeast in a little water and add to your crock. Cover with several folds of cloth and let brew for three days. Strain out sediment and bottle. Ready to drink in eight days.

BREAKFAST FACE

Oaty face wash for hormonally excitable skin

2 c white clay
1 c oats
¼ c almonds
anything like:
1/8 c each of any or all of these:
lavender
poppy seeds
calendula

roses

bladderwrack (a kind of seaweed)

Grind the oats, almonds and herbs in a coffee grinder til fine, as fine you like. Blend with the clay. You can store this in a jar and then add honey weekly to another little jar to make a paste. Use as a mask or a face wash, patting it on gently. Rinse with warm water, checking your hair, neck, and pubes for tiny pieces of Breakfast Face.

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The following people contributed to these protocols: Angela Davidson, RN Jim Franicevich, FNP Mark Freeman, FNP Royce Lin, MD Linette Martinez, MD Mary Monihan, RN Maria Porch, LCSW Lysa Samuel PA Robyn Stukalin, LCSW Jody Vormohr, MD Barry Zevin, MD

Transgendered Clinics in San Francisco Bay Area

Tom Waddell Health Center, SF
Kaiser Permanente, San Leandro
Lyon Martin Health Clinic, SF
Trans-Thrive, SF
St. James Infirmary, SF

Presenter Biography

Kara Sigler, RH (AHG) is a Western Clinical Herbalist located in the Bay Area of California. She supports and educates her clients on integrating herbs and healthy life choices and has since 2006. Kara co-taught a three year clinical herbal program at the Ohlone Herbal Center from 2006-2014. Kara currently teaches at the California School of Herbal Studies in Sonoma County, CA, as well as leads herb walks, wildcrafting trips, and workshops at multiple herb shops around the Bay Area. Kara makes individualized herb formulas for clients in her apothecary, and has a line of herbal products *Herban Elixirs*. Kara incorporates Ayurvedic pulse and tongue assessment into her sessions with clients, as well as bodywork, nutritional consulting, and emotional/energetic counseling.

Kara's interests have focused on women, queer and trans health. Kara first began teaching Trans Health topics at the Philadelphia Trans Health Conference in 2008. She found that her community was in need of safe access to health services and more knowledge about the healing power of plants. Kara's practice affirms that life transitions are hard for humans and that plants are amazing allies along the way. Please visit Kara's website www.sfherbalist.com.

APPENDIX A

Tom Waddell Clinic excerpt from

Protocols for Hormonal Reassignment of Gender

At the point at which an individual begins to live their gender identity more fully and begin transition, they are often doing so with the understanding that this may lead to the loss of significant relationships, societal status, employment, financial security and stable housing. When seeing patients for the first time at our clinic often they are both very happy to finally be pursuing medical care to support their transition, but at the same time grieving these multiple losses

Treatment Modalities for Gender Transitioning

Hormones such as estrogen, progesterone and testosterone are steroids produced by the following endocrine glands: ovaries, testes and adrenals, under the direction of the hypothalamus/pituitary system in the brain. During pubescence these increasing hormone levels circulate in the bloodstream and attach to receptor sites on target cells of tissue/organs. All three of these sex hormones are present in men

and women in varying level. If target cells are activated by these increased hormone levels secondary sexual characteristics are expressed such as beard growth and breast development. Tissue that is not activated remains latent. The basis of transgender hormone therapy is the manipulation of these hormones to create the desired body effect by activating target cells of latent yet responsive tissue/organs resulting in feminization or masculinization of the individual. In addition to the female hormones estrogen and progesterone (which in very high doses possess anti-androgen [anti-testosterone effect]), anti-androgen therapy is often added to the feminizing medical regimen to reduce the need/risks of such high doses of female hormone. Anti-androgen therapy will decrease testosterone to normal or lower than normal female levels. Testosterone is the agent for masculinizing hormonal transition.

More is not necessarily better and may lead to complications. Most of our patients reach maximum possible feminization or masculinization without recourse to maximum doses of medications.

Feminizing Hormonal Therapy

May include either one or combination of anti-androgen and female hormonal therapy. Antiandrogen Therapy:

- antiandrogen drugs,
- GnRN (gonadotropin-releasing hormone) agonists,
- bilateral orchiectomy.

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Antiandrogen Drugs

		Dose	Adverse Effects	Contraindications	Interactions	Notes
Spironolactone		Starting: 25-50mg BID Typical: 50mg BID Max: 200mg BID	Mild diuretic Hyperkalemia Excretion of Na, Ca, Cl	Renal insuff K > 5.5	Digoxin ACEi ARB K-sparing diuretics	Baseline labs: Lytes, BUN, SCr Follow up labs 2 mo. after starting dose or increasing dose, every 6mo when stable: Lytes, BUN, SCr Testosterone level not routinely

					checked, but may be appropriate if not showing expected demasculinization Avoid after orchiectomy
Finasteride	Low: 1mg daily High: 5-10mg daily				Prescribe if pt. unable to take spironolactone Can use in combo w spironolactone for rare patients not achieving gender-related effects May be appropriate after orchiectomy if continued hirsutism, male pattern baldness progression.
GnRH Agonists • Nafarelin • Goserelin • Leunrorelin	See reference for dosing (Hembree et al., 2009)				Fully reversible in adolescents No thromboembolic risk

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Spironolactone

Spironolactone is our treatment of choice due to safety and availability.

Dosing

- Typical spironolactone starting dose: 25mg-50mg twice a day
- Typical spironolactone dose: 50mg twice a day

- • Maximum dose spironolactone: 200mg twice a day

Gender-Related Effects

- • Suppression of testosterone production/activity
- • Decreased facial and body hair growth
- • Decreased progression of male pattern baldness
- • Decreased libido
- • Decreased erections
- • Mild breast growth
- • Decreased BPH

Contraindications

- • Renal insufficiency
- • Serum potassium greater than 5.5 meq/L

Adverse Effects

Adverse effects have been very rare in our experience.

- • Mild diuretic
- • Hyperkalemia
- • Increased excretion of sodium, calcium, chloride
- • Impotence/decreased libido

Drug Interactions

Avoid using concomitantly with digoxin, ACE inhibitors, potassium-sparing diuretics, AT II receptor antagonists.

Monitoring Labs

Baseline: Electrolytes, BUN, and creatinine

Follow up: 2 months after starting or increasing dose, and every 6 months after establishing stable dose. Testosterone level Optional 6 mo. after starting if not showing expected demasculinization

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Finasteride

Finasteride is an agent which inhibits the intracellular enzyme responsible for converting testosterone to its potent form DHT (5 alpha-dihydrotestosterone). It may be used alone or in combination with spironolactone. In larger doses (Proscar

5-10 mg) we use this drug as a second line therapy for patients intolerant to spironolactone. In smaller doses (Propecia 1mg), finasteride is used for improving male pattern baldness.

Finasteride is used to treat BPH by causing the prostate to reduce in size, and because of this it can reduce PSA levels by 50% even if there is underlying prostate cancer. It is therefore very important to monitor with biopsy and/or not use this agent if underlying cancer is suspected.

Other Agents

Other anti-androgen drugs include cyproterone acetate (Androcur) and flutamide. Cyproterone is widely used in Europe but is not available in the United States. Flutamide appears to have more toxicity and is useful only in selected clinical situations.

GnRH Agonists

GnRH agonists include nafarelin acetate, goserelin acetate, and leunrorelin acetate. These agents reduce gonadal androgen production by desensitizing the pituitary with GnRH. The principal advantage with these agents is that they are generally fully reversible in their effect in adolescents (making them useful where there is desire to stall changes of puberty), and they do not carry risk of thromboembolic disease.

Bilateral Orchiectomy

Bilateral orchiectomy might be beneficial for those intolerant of other anti-androgen therapy. Advantages include a much-reduced need for anti-androgen therapy since approximately 90% of testosterone comes from testicular source. Disadvantages include: irreversibility and potential scarring of scrotal tissue, which could pose problems for the SRS surgeon since scrotal tissue is used to create labia and give depth to the neovagina.

There are differences of opinion whether anti-androgen drugs (including spironolactone and other above agents) should be used after bilateral orchiectomy and/or male to female SRS. Adrenal androgens, about 10% of total testosterone, left postop may be needed for normal body function. After orchiectomy or SRS, usually a maintenance dose of estrogen is needed for maintenance of feminization and, in particular, to prevent osteoporosis.

Estrogen Therapy

Estrogens are the primary hormones used for feminization. Adverse effects from estrogen therapy including increased risk of death are well-documented, and patients should be fully informed of possible risk. Nevertheless, these drugs are extremely useful and have been used with relative safety. Despite our high-risk

population, we have rarely seen severe adverse effects. Numerous classes of estrogens have been used for gender reassignment. There is a thriving illicit market for these drugs and many patients have been taking them on the streets without medical monitoring. Patients frequently take estrogens from several classes and have a misconception that “more is better.” Education is essential to avoid adverse outcomes and optimize effect.

Common prescribed estrogens we use for reassignment of gender include:

- estradiol valerate tablets (Estradiol)

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- • estrogen transdermal (Estroderm, Climara, Alora, Vivelle)
- • estradiol valerate injection (Delestrogen)
- • conjugated equine estrogens (Premarin)

General Concepts when Prescribing Estrogens

- • All estrogens increase the risk of thromboembolism and prolactinoma. These risks are dependent on the form of estrogen and are dose-dependent, controlling for other risk factors.
- • All estrogens work on the same receptors and should have similar effects at equipotent doses. Nevertheless, there are patient-specific variations and preferences in response to dose and type of estrogen.
- • Non-oral forms, including sublingual, transdermal and injectable, have the advantage of avoiding first pass through liver metabolism and may be the preferred form for all especially patients who are older, have underlying liver disease or have elevated lipids.
- • Oral preparations have the advantage of being easy to titrate or stop in case of adverse effects; injectable forms may stay present in the body for four weeks or longer.
- • Ethinyl estradiol is no longer considered a safe medication for feminizing hormone therapy
- • Response to treatment is extremely variable. Younger age and less body hair are predictable factors of a more satisfactory outcome.
- • Estrogen doses can be reduced to a lower dose after Gender Reassignment Surgery (GRS) or after maximum feminization is evident, which is usually after two years of high-dose treatment.
- • Stop all estrogens two weeks (4 weeks for estradiol valerate injection) prior to any major surgery or other immobilizing event, and resume one week after or upon resumption of mobility.
- • Add aspirin 81-325 mg for all patients at risk of thromboembolism (cigarette smoker, age greater than 40, obese, highly sedentary, cardiac risk factors) and consider aspirin for all patients without contraindication.

Estrogens all in one place table

			Dose	Adverse Effects	Contraindications	Interactions
Estradiol	Starting: 2-3mg daily Typical: 4mg daily Max: 8mg daily	Common ↑weight, emotional changes, increased risk of deep vein thrombosis and pulmonary embolism (especially in those over age 40, cigarette smokers, highly sedentary, obese, and those with underlying thrombophyllic disorders, and those using oral estrogens especially ethinyl estradiol), adverse changes in lipid levels, increased insulin resistance, increase in prolactin levels, decrease in sexually stimulated erections, nausea / vomiting, migraine / headache, melasma (skin darkening), skin irritation from estradiol patches Less Common increased risk of cardiovascular events in those		Absolute Estrogen-dependent cancer Precautions: H/o thromboembolism CAD, HLD, DM Cigarette smoking Highly sedentary life style Migraine Seizure d/o Retinopathy CHF, valvular heart dz Thrombosis risk for any reason Family h/o estrogen dependent tumor	CYP 3A4, 1A2 inhibitors/inducers	
Estradiol valerate (Progynova)	Starting: 2-3mg daily Typical: 4mg daily Max: 8mg daily					
Estradiol SL (estradiol micronized, Estrace)	Starting: 0.5-1mg Typical: 2mg daily Max: 4mg daily					
Estradiol valerate (Delestrogen)	Starting: 20-40mg IM Q2wk Average: 40mg IM Q2wk Max: 40-80mg IM Q2wk					
Estradiol cypionate (Depo-estradiol)	Starting: 20-40mg IM Q2wk Average: 40mg IM Q2wk Max: 40-80mg IM Q2wk					
Estradiol patch (Climara, Estraderm, Alora, Vivelle-dot)	Starting: 0.1mg/24hr Average: 0.2mg/24hr Max: 0.4mg/24hr					
Estradiol gel (Divigel, Elestrin, Estrasorb, Estrogel)	Dosing unclear from anecdotal reports					
Conjugated equine estrogens (Premarin)	Starting: 1.25-2.5mg daily Typical: 5mg daily					

	<p>Max: 10mg daily</p> <p>This is less preferred In our clinic due to ethical concerns regarding the source of raw materials and theoretical concerns that this medication may be more thrombogenic than other options</p>	<p>over age 50 with other cardiovascular risk factors (especially those taking progesterones in addition to estrogens), increase in triglyceride to high levels in users of oral estrogens (increasing risk of pancreatitis and cardiovascular disease), transient liver enzyme abnormalities, increasing risk of gallbladder stones, increased risk of diabetes mellitus (particularly in those with family history or other risk factors), increase in blood pressure (note spironolactone reduces blood pressure), hyperkalemia (in spironolactone users)</p> <p>rare or plausible but have not been observed</p> <p>liver damage, prolactinoma, increased risk of breast cancer (compared to men never exposed to</p>		
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		estrogen)		
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Estrogens: Contraindications

- Presence of estrogen-dependent cancer Estrogens: Precautions

History of thromboembolism or severe thrombophlebitis, Hyperlipidemia, diabetes, cigarette smoking, hepatitis, alcoholic liver disease, renal insufficiency, migraine, seizure disorder, retinopathy, obesity, coronary artery disease, valvular heart disease, congestive heart failure or other cardiac dysfunction, any condition causing tendency to thrombosis, strong family history of breast cancer or other estrogen dependent tumor.

Note: Attempt to control all above conditions prior to starting estrogen therapy. Starting hormone therapy may be strong incentive for patients to stabilize their medical condition. In many cases we start at lower doses for these patients and increase contingent on medical conditions stabilizing.

Estrogens: Expected Gender-Related Effects

- • Breast development
- • Redistribution of body fat
- • Softening of skin
- • Suppression of testosterone production
- • Possible improved mood/improved impulse control
- • Shrinkage of testes/testicular atrophy
- • Decreased libido

Estrogens: Adverse Effects

See table above

Estrogens: Drug Interactions

Theoretical interactions with CYP 3A4, 1A2 inhibitors / inducers. No dangerous interactions have been noted between estradiol and other medications.

See Section VI.

Estrogens: Lab Monitoring

Baseline: lipid profile, prolactin level*, glucose.

Follow up: lipid profile, glucose 3 mo. after starting or increasing dose, 1 year after starting or increasing dose. Prolactin* optional 1 year after starting. LFT's optional 1 year after starting if pt. has high risks for liver disease (e.g. excessive wt. gain, risk behaviors for acquiring viral hepatitis, heavy alcohol use)

* Prolactin levels: Baseline prolactin is obtained for patients with previous unmonitored estrogen 15

use, previously elevated prolactin level, previous or current exposure to phenothiazines. Follow up prolactin is done 1 year after starting hormones for patients on high dose estrogen, pts. suspected of taking doses above prescribed amount, and for patients also on phenothiazine. Serum prolactin level correlates well with pituitary activity and prolactin is likely to be significantly increased for a long period (greater than 1 year) prior to an adenoma enlarging. Elevated prolactin levels frequently decrease spontaneously. Therefore:

- If prolactin is less than 25, continue to monitor per protocol.
- If prolactin is 25-40, ask patient about outside sources of extra estrogen (usually

injections) and encourage patient to cease these. Continue to monitor per protocol.

- If prolactin is greater than 40, decrease estrogen dose by 1/2 or ask patient to stop** estrogens, recheck 6-8 weeks.
- If prolactin is greater than 100, stop** all estrogens and retest in 6-8 weeks.
- If continues high consider MRI of pituitary. If prolactin level is falling, restart estrogen

at lower dose and monitor every 6-8 weeks.

- Be aware that typical and atypical antipsychotics can increase prolactin levels.

**When stopping estrogens it is always advisable to taper over several weeks when medically possible to avoid emotional effects.

Testosterone level: used selectively and rarely but may be appropriate for patient not showing expected demasculinization after 6-12 months on maximum anti-androgen.

Estrogen levels have not been useful in our setting

Estrogens: Other Clinical Monitoring/Considerations

- • Nicotine/cigarettes increase degradation of estrogens and increase DVT risks.
- • Some HIV protease inhibitors increase metabolism of ethinyl estradiol.
- • Many other drugs increase or decrease metabolism of ethinyl estradiol.
- • Breast symptoms and breast exam every 6 months; BSE education.
- • Prostate exam as in the general population. PSA may not be reliable for cancer screening. Prostate gland is not removed with SRS.
- • Check for signs and symptoms of DVT at each follow up visit Review history and teach warning signs of DVT/PE.

Progesterone Therapy

Medroxyprogesterone has a demonstrated anti-androgen effect at high doses but has no advantage over spironolactone. Its physiological effect is primarily on the uterus and effects on feminization are unclear. Some patients report a potentiating effect on breast growth or fat redistribution. There are also reports of androgenic effect in some patients and an adverse effect on mood (PMS-like effect) in some patients. There is concern for increased cardiovascular risk.

Medroxyprogesterone is not a routine part of our hormonal reassignment regimen but may be used in the following situations:

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- • As adjunct for patients on maximum estrogen doses with unsatisfactory effects.
- • In patients intolerant of other drugs.

Dosing

- • Typical starting doses: 2.5mg/day
- • Typical dose: 5-10mg/day
- • Maximum dose: 20mg/day

Other oral and injectable forms of progesterone are available

Consider cycling progesterone (i.e. 1st 10 days of the month)—patients seem to like this approach and it reduces the amount of progesterone prescribed.

Progesterone: Contraindications

Same as estrogens.

Progesterone: Precautions

Same as estrogens. Carefully review use in any patient with underlying psychiatric or cardiovascular disorders.

Progesterone: Expected Gender-Related Effects

Enhanced estrogen feminization effects.

Progesterone: Adverse Effects

Lipid abnormalities, weight gain, edema, mood disorders
depression/irritability, facial and body hair growth and coarsening.

Progesterone: Drug Interactions

Unknown.

Progesterone: Lab Monitoring

Same as estrogens.

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Lab Monitoring for Patients on Feminizing Hormone Therapy

(these are in addition to labs appropriate for pts. age and medical conditions)

	CB C	Fastin g glucose	Fastin g lipids	Testosterone level	LFT's	Prolactin	BUN / SCr	Lytes
On estrogen		Baseli ne 3mo after startin g or dose increa se 1 year after	Baseli ne 3mo after startin g or dose increa se 1 year after	Optional 6 mo. after starting if not showing expected demasculiniza tion	Optiona l 1 year after starting if pt. has risks for liver disease (e.g. excessi ve wt. gain,	Baseline for patients with prev. unmonitore d estrogen therapy, previous elevated prolactin level, previous or current exposure to		

		starting or dose increase	starting or dose increase		risk behaviors for acquiring viral hepatitis, heavy alcohol use)	phenothiazines Optional after 1 year (patients on high dose estrogen, pts. suspected of taking doses above prescribed, pt. also on phenothiazine)		
On Spironolactone				Optional 6 mo. after starting if not showing expected demasculinization			Baseline 2 mo. after starting or increasing dose every 6 mo. when on stable dose	Baseline 2 mo. after starting or increasing dose every 6 mo. when on stable dose

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Bone Health

Endogenous estrogens and androgens protect against osteoporosis. Patients who are not at physiological levels or stop hormonal therapy are at risk of osteoporosis. Consider BMD study for these patients, for post orchiectomy patients not on hormones and in all patients with other risk factors.

Mammograms

Mammograms for transwomen have no clear evidence of benefits; there is no evidence that transwomen on estrogen are at high risk for breast cancer.

Mammographic changes are dependent on time of estrogen exposure. We follow standard guidelines for woman for our transwomen patients and begin screening with mammograms for patients over age 40 or 50 who have been on estrogen for 20 years or more, or earlier if abnormal findings or family history of breast cancer.

Masculinizing Treatment Protocol

The main available masculinizing hormone therapy are androgens, which usually produce satisfactory masculinizing results. The entire process of masculinization can take years to complete. However, in many patients, changes in voice pitch, muscle mass, and hair growth become apparent after just a few months of a regular hormonal treatment regimen.

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Testosterone all in one place table

		Dose	Adverse Effects	Contraindications	Interactions
Testosterone cypionate Testosterone enanthate * Cypionate in cottonseed oil; enanthate in sesame oil		Starting: 50-100mg Q2wk or 25-50mg/wk Typical: 200mg Q2wk or 100mg/wk Max: 400mg Q2wk or 200mg/wk	Common ↑weight, oily skin, acne, vaginal atrophy, male pattern baldness, emotional changes, ↓ HDL cholesterol level, skin irritation with patch, risk of exposing partners	Absolute Pregnancy h/o testosterone responsive cancers Precautions:	
Testosterone propionate		Typical: 100-200mg IM 1-2x/wk Max: 200mg IM 2x/wk	or children to testosterone with topicals Less Common	Erythrocytosis Cardiac, hepatic, renal, or vascular disease with edema or risk of edema Sleep apnea or high risk of sleep apnea due to obesity or chronic lung disease dyslipidemia HLD	Warfarin Cyclosporine Insulin
Testosterone patch (available strengths 2mg, 2.5mg, 4mg, and 5mg patches)		Starting: 2-2.5mg/24hr Typical 5mg/d Max 7.5mg/d	peripheral edema ↑blood pressure, erythrocytosis, transiently abnormal hepatic transaminases, dyslipidemia, obstructive sleep apnea, increased		
Testosterone gel (Testim 1%)		Starting: 2.5mg every morning			

	Typical 5mg every morning Max 10mg every morning	aggressiveness, skin irritation with gels, skin ulceration with patch rare or plausible but have not been observed HTN, liver dysfunction, ↑risk of cardiovascular disease, ↑risk of breast cancer, ↑risk of endometrial hyperplasia, ↑risk of ovarian cancer		
Testosterone gel (AndroGel 1%)	Starting: 2.5mg every morning Typical 5mg every morning Max 10mg every morning			
Testosterone gel (AndroGel 1.62%)	No published or anecdotal experience with this preparation			
Testosterone solution (Axiron axillary solution)	No published or anecdotal experience with this preparation			
Compounded Testosterone ointment, cream gel or DHT cream			Available in various strengths from compounding pharmacies	

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Available Forms of Testosterone and Dosing

Intramuscular Route

- testosterone cypionate: 100-400 mg IM every 2 weeks (range every 1-4 weeks)
- testosterone enanthate: 100-400 mg IM every 2 weeks (range every 1-4 weeks)
- testosterone propionate: 100-200 mg IM 1-2 times/wk.

IM testosterone is released slowly from the muscle. There are variations in the plasma concentration through injection cycles, causing symptoms that may require dose or frequency changes.

Transdermal System

- • Androderm patch: This is a non-scrotal patch. It has the advantage of avoiding peak ups and downs in testosterone levels, thus delivering a constant dose of hormone. This form can be an effective alternative in patients who are more sensitive to variable testosterone levels.
- • Androgel, Testim: Needs to be used with caution at the possibility of exposing partners.
- • Testosterone ointment in petrolatum base 2-4%. (available from compounding pharmacies) Used as an adjuvant to increase concentration in local areas (face, clitoral area). Mixed results in terms of effectiveness.

Oral Preparations

(Methyl/testosterone; Oxandrolone) These are not used in our clinic. PO preparations undergo extensive liver metabolism, increasing the possibility of liver complications.

Testosterone: Contraindications

pregnancy, breast cancer

Testosterone: Precautions

Erythrocytosis, Cardiac, hepatic, renal, or vascular disease with edema or risk of edema, Sleep apnea or high risk of sleep apnea due to obesity or chronic lung disease, dyslipidemia

Testosterone: Expected Gender-Related Effects

- • Cessation of menses
- • Voice change to a male range
- • Increased hair growth on face, chest, and extremities
- • Increased muscular mass and strength
- • Redistribution of body fat to an android (apple) shape
- • Clitoral enlargement

Testosterone: Other Effects

- Protection against osteoporosis

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- • Increased libido
- • Increased physical energy

Note: Changes in voice range, hair follicles, and clitoral size are permanent. Other effects are reversible at the cessation of hormonal therapy.

Testosterone: Possible Adverse Effects

See table above

Testosterone: Drug Interactions

- • Potentiation of warfarin
- • In diabetic patients, blood sugar decreases, requiring adjustments in dose of

hypoglycemic agents

Testosterone: Lab Monitoring

Baseline: CBC, lipids, urine HCG if pregnancy is a possibility. Glucose, LFTs optional if PCOS is suspected

Follow up: CBC, lipids 3 mo. after starting or dose increase and 1 year after starting or dose increase. LFTs optional 1 year after starting if pt has risks for liver disease (e.g. excessive wt gain, risk behaviors for acquiring viral hepatitis, heavy alcohol use) Testosterone level optional 3- 6 mo. after starting or dose increase. May be particularly appropriate if not showing expected masculinization, showing signs of adverse effects.

Testosterone: Special Considerations

There is no evidence that screening with ultrasound will decrease mortality or morbidity of endometrial cancer. Patients at increased risk tend to present with symptoms at an early stage, therefore it is important for the patient to be educated and report the early symptoms (vaginal bleeding, or thin clear discharge, pelvic pain, dyspareunia).

Obtain pregnancy test before starting therapy if there is any possibility of pregnancy. Patients will be ovulating at the initiation of treatment and possibly at other times throughout treatment. Stress the use of contraception if sexually active with biological men.

Smoking cessation should be strongly encouraged to decrease cardiac risk factors.

Breast exams and mammograms are essential. Any post-surgical residual axillary breast tissue requires regular examination as well.

Pap smears are still important follow-up in patients with a cervix.

Assess for hypersexual behavior and safe sex practices. Risky sexual behavior

has been found to be common in FTM patients. Addressing safe practices and screening for HIV and STD is necessary.

Bone Health

Endogenous estrogens and androgens protect against osteoporosis. Patients who are not at physiological levels or stop hormonal therapy are at risk of osteoporosis. Consider BMD study for these patients, for post oophorectomy patients not on hormones and in all patients with other risk factors.

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Lab Monitoring for Patients on Masculinizing Hormone Therapy (these are in addition to labs appropriate for pts. age and medical conditions)

	CBC	Fasting glucose	Fasting lipids	Testosterone level	LFT's	Urine HCG
On testosterone	Baseline 3mo after starting or dose increase 1 year after starting or dose increase	Baseline if PCOS is suspected	Baseline 3mo after starting or dose increase 1 year after starting or dose increase	Optional 3-6 mo. after starting or dose increase	Baseline if PCOS is suspected Optional 1 year after starting if pt. has risks for liver disease (e.g. excessive wt. gain, risk behaviors for acquiring viral hepatitis, heavy alcohol use)	Baseline if pregnancy is a possibility