Transgender

Southern Ontario
Fertility Technologies

Introduction

Gender identity refers to a person's internal sense of being male, female, or something else. **Gender Incongruence** (**GI**) refers to the discomfort felt because of ones own gender identity.

The term **transgender** is an adjective that has been widely adopted to describe people whose gender identity, gender expression, or behavior does not conform to what is socioculturally accepted as, and typically associated with, the sex to which they were assigned at birth and is used in the medical literature. **Trans** is an umbrella term for the same persons and is more uniformly used in the community and social service. The terminology that I employ in my medical records is transgender followed by brackets ( ) indicating male to female or female to male. The term **trans man** or the short form **FtM** refers to female-to-male trans person, and **trans woman** or short form **MtF** refers to male-to-female trans person.

Gender expression refers to the way a person communicates gender identity to others through behavior, clothing, hairstyles, voice, or body characteristics. Gender expression is highly influenced by a person's situation in life and their environment.

Sexual Orientation refers to an individual's sexual attraction. Trans does not imply any specific form of sexual orientation. Trans people have varied sexual orientations and can be attracted to the same sex, opposite sex, or other trans people as examples. A trans person's sexual orientation is described from their using the their internal sense of their own sex or gender identity. Therefore, a trans man who is sexually attracted to females is considered heterosexual.

Intersex people have genitalia or other physical sexual characteristics that do not conform to strict definitions of male or female. They have genital tissues or sexual organs, which are not developed as male, or female at birth and a decision is made to classify them as male or female.

A Little History

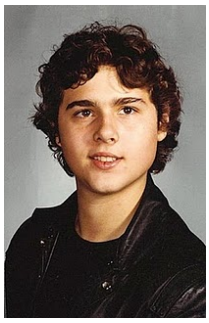
Harry Benjamin
1885-1986

Harry Benjamin was a German, Jewish physician who received his doctorate in medicine in 1912 after a dissertation on tuberculosis. Sexual medicine interested him, but was not part of his medical studies. In 1948, while visiting the USA, Benjamin was asked by Alfred Kinsey (most famous for publishing Sexual Behavior in the Human Male (1948) and Sexual Behavior in the Human Female (1953)) to see a male child who "wanted to become a girl". Psychiatrists involved in the case were not in agreement but because the child had a very supportive mother, Benjamin treated the child with estrogen (Premarin, which was first used clinically in 1941). Benjamin documented that the treatment had a "calming effect," and went on to help arrange sexual reassignment surgery.

Benjamin continued to develop his understanding of this condition and went on to treat several hundred patients with similar needs in a similar manner. These patients were referred because he had published many papers and lectured to professional audiences extensively about the topic. In 1966, he published, "**The Transsexual Phenomenon**", a book that was immensely

important as the first large work describing and explaining the affirmative treatment path (which would now be considered transitioning) he pioneered.

In 1979 the Harry Benjamin International Gender Dysphoria Association was formed, using Benjamin's name by permission. It has recently changed its name to The World Professional Association for Trans Health (**WPATH**) and is in the forefront in describing standards of care for treating trans patients.



David Reimer

David Reimer was born an identical twin boy in 1965. At the age of 8 months, as a complication of a circumcision, virtually David's entire penis was accidentally burned off. At the advice of psychologist (John Money), David's parents agreed to have him "sex reassigned" and made into a girl via surgical, hormonal, and psychological treatments.

Money used this case to bolster his approach to intersex; one that relies on the assumption that gender identity is all about nurture (upbringing), not nature (inborn traits), and that gender assignment is the key to treating all children with atypical sex anatomies. This approach to sexual assignment was proven very wrong when in his teen years; David reassumed the social identity of a boy. Reimer later went public with his story to discourage similar medical practices. He later committed suicide, owing to suffering years of severe depression, financial instability, and a troubled marriage. The story of David Reimer has been used to show that people know their gender at birth and people cannot change it.

A quick historical note on "curing" this condition! **CAMH** (The Centre for Addiction and Mental Health, CAMH) is a consortium of mental health clinics at several sites in Toronto, Ontario, Canada. Historically, two physicians at this institute pioneered work, which aimed to 'cure' trans people of their 'disorder'. Within the trans community, this mostly produced shock and outrage. Most medical practitioners and probably all trans people believe that gender incongruence or dysphorias are "incurable" as they are genetic and/or occur as a result of events occurring before birth and therefore are already "solidified" by the time of birth. Also as stated above, most of us do not consider these even medical disorders! CAMH no longer holds this philosophy. CAMH has improved greatly in their philosophies regarding trans health care and has become a leading Canadian institute in trans care and they are currently the only institution in Ontario that can approve patients for surgery covered under OHIP.

The **first trans patient** presented to my office at SOFT in 2000 requesting hormone treatment. Although I had been practicing medicine since 1977 and had received advanced training in reproductive endocrinology, I had no previous teaching on how to help this patient. As always in this situation, I consulted the medical literature. It was very sparse and expressed many divergent opinions. I proceeded to treat this patient using a combination of that sparse medical literature, my basic knowledge of reproductive endocrinology, and like many health care professionals before me, the knowledge shared with me from the patient.

The first patient's treatment was very successful and many more trans patients began to present. As always, I have kept track of the results in all these patients (289 as of the end of 2013) and therefore have a great deal of data available. Last year (2013), to my delight, the first presentation on trans health occurred (to my knowledge) at the Canadian Fertility and Andrology Society (CFAS) annual meeting. I have been presenting clinical data at the CFAS annual meeting since 1993 (96 presentations – see "We Do Research"). Next year, I will submit my first

data for trans patients' hormone treatment, the preliminary results of which are presented in this information sheet.

Trans people meet a great deal of difficulty in receiving proper health care. This is well described in a 2009 article published in the Journal of the Association of Nurses in Health Care and a 2011 survey reported in BioMed Central Health Services Research. I hope in a small way, we at SOFT are helping to correct this situation.

Incidence and Prevalence

Formal epidemiological studies on GI in children, adolescents, and adults are still lacking and **no strong conclusion about its prevalence or incidence** can be drawn. Many current prevalence estimates are based upon data, which is over 20 years old, and recently many more individuals have been able to identify themselves and willing to present themselves as transgender. In Western Europe, between the 1960's and 1990's, at least a threefold increase (and as high as eightfold increase) in patients presenting to clinics has been documented. This could be due to increased awareness and seeking of transgender services. There is also a problem of whom to count. Individuals who undergo surgical sex reassignment are only an extreme end-point of a continuum of cross-gender identification. We are becoming more aware of individuals who identify as trans but do not undergo a transition.

Published data from Scotland, the Netherlands and Belgium estimates the prevalence of trans women undergoing **complete surgical transition** at about 1 in 12,000. This data is 10 years old. Therefore, the prevalence of transgender is probably higher and this has been our experience at SOFT. In fact, a 2007 paper out of Belgium estimated the prevalence rate at 1 in 1,000 to 2,000. The paper even speculated that the prevalence rate could be as high as 1 in 500.

In the past, it was assumed that there were **more trans women than trans men**. Older estimates have given ratios of 2.5 to 4.0 to one in favour of trans women. However, one study estimated a ratio of only 1.4:1 in favour of trans women requesting sex reassignment surgery and a ratio of 1:1) for those who proceeded. Trans PULSE, who surveyed 439 Trans people in Ontario found 1:1 ratio (only 46.5% of trans people MtF). (Trans PULSE is a Canadian Institute of Health Research-funded, community- based research project to understand and improve the health of trans people in Ontario. Our practice has a ratio of 1.9 to 1 (188 to 101 up until year end 2013) My impression is that the prevalence statistics will increase and the ratio will become more equal as information becomes more available and social acceptance improves. Trans people have been recognized and described in every culture in the world and have been described in many ancient cultures.

Identity Development

All people, including trans people go through a period of identity development, marked by increases in understanding of one's self-image, including sex and sexuality. My experience with now almost 300 trans individuals has been **very consistent**. Almost invariably the individual will remember preferring playmates and play activities opposite of their birth assigned sex from a very young age. The age is usually about **age 5** or the person will simply say, "as long as I can remember". Often these very young children will state that they want to be the other sex. Parents often confirm these observations. Little girls are often considered "tomboys" and little boys are often considered effeminate. There is often a history of dressing like the other sex in play activities as a very young child.

Often by **age 10 to 13** this general tendency to prefer friends and activities of the other sex have been refined into a feeling of discomfort with their birth assigned sex. Discomfort with birth assigned sex is called **gender incongruence or dysphoria** (GI). It is believed that not all trans people have the same intensity of GI and this will be discussed later in this information sheet. My belief is that GI is fairly consistent but how much a person wants to transition can vary. Trans people are **uniformly distressed by the changes occurring with puberty**. There is usually a history of cross-dressing as an adolescent.

Many of these children **experience rejection as a result of their differences and quickly attempt to repress them** in order to gain more acceptance. This may make people close to them unaware that they are unhappy as members of their assigned gender. Parents' reactions to a trans offspring vary from acceptance and support to an attitude of disbelief to outright denial. I have even had parents that try and forbid it! However, as demonstrated by a 2012 trans PULSE report prepared for the Children's Aid Society of Toronto, support and acceptance of the condition from parents is extremely important. Up to 50% of young trans persons have attempted suicide in the past. I believe that the widespread availability of information now; via Internet, television, radio, books and articles, helps many young trans people realize their condition, (The Jan. 20, 2014 cover story for Maclean's magazine was "What happens if you're your son tells you he's really a girl") In fact, most trans in our present environment have realized the nature of their condition as an early teenager. Many will discuss this with parents, siblings or good friends. Fortunately, physicians have become much more aware of this condition and are happy to start the referral process.

It is relatively common for gender dysphoric children to have coexisting anxiety and depression.

Some literature on development of trans individuals will stress **changing of gender identity as a child develops** and especially goes through puberty. An important difference between gender dysphoric children and adolescents is in the proportion for which dysphoria persists into adulthood. Gender dysphoria during childhood does not inevitably continue into adulthood. In contrast, **the persistence of gender dysphoria into adulthood appears to be much higher for adolescents** with one study demonstrating 100% persistence. This has been my experience! I have not had a lot of experience with children but by the teenage years, feelings of being the wrong sex stay very consistent.

The literature also stresses different intensities of being trans. This has not been my experience. Although individuals seek different intensities of treatment, all seem to recognize the same incorrectness of their assigned sex but have different needs in how much they need to do about it. For some individuals, part-time expression of their preferred sex may be enough while others seek all medical and surgical treatment available to change completely.

The **goal of all treatment** should be to have these individuals feel comfortable with their external appearance and accept their genuine identity. This process is referred to as **trans congruence** and as stated above can involve different end goals for each transgender person.

Cause

Several studies have concentrated on whether **sexually dimorphic brain structures** in trans people are more similar to their preferred sex or to their birth sex. Many studies provide evidence that trans is associated with a distinct cerebral functional anatomy pattern, which supports the assumption that brain anatomy plays a role in gender identity.

Genetic studies have also demonstrated that trans women were more likely than non-

trans males to have a longer version of a receptor gene for the sex hormone androgen or testosterone.

More recently, studies of **brain chemistry** have demonstrated differences. These again are hard to interpret and further studies are required. One observation we have made at SOFT is that many trans people appear to have less anxiety, depression and behavioral disorders once they begin hormone treatment. Logically, you would think this would be opposite as the transitioning process itself is stressful.

A quote from one of SOFT's patients, included with permission demonstrates this well:

"Well its been one year on Hormone Replacement Therapy. All I have to say is wow. I remember taking my first set of pills the evening of Feb 1 2013. A few days later I felt much better. Mentally, Physically, and emotionally. As the days and weeks went by things started to change. I was a bit calmer too. As a couple of months went by I noticed a couple of tender developments on my chest. My skin was slowly becoming softer and more blended tone. The hair on my head started to fill back in. I was amazed at a couple of new hairs popping out of my now shirking widows peak. The loss of hair else where on my body. Today I am different than I was a year ago. Hair is still coming back in and thickening. Skin is soft and smooth. My breasts are starting to round out. But most of all I am liking the person I see in the mirror more than I used to. Its the emotional and mental effects that are much better. Physically though I am not as strong as I once was. I can't fend off my partner's never ending quest for tickles and pokes as I once did. But more than that I can talk and communicate more than I used to. I can talking about my feelings and emotions. There is no question for me that this was the right move now"

Treatment Options

Treatment options include the following:

1) Changes in gender expression and role, which may involve living part time or full time in the other gender role.
2) Hormone therapy to feminize or masculinize the body.
3) Surgery to change primary and/or secondary sex characteristics.
4) Psychotherapy or counseling.

Treatment of trans is still in its infancy but has come a long way. Most professionals refer to a publication produced by WPATH called **"Standards of Care for the Health of Transsexual, Transgender, and Gender- Nonconforming People"** which was produced in 2012 and is available online. This document makes a strong statement in the first two sections that the guidelines are to be used as "Flexible Clinical Guidelines" and not rules. Variance from the guideline may occur because of a patient's personal choice, the health professional's clinical experience or the country in which the treatment occurs. Despite this generous allowance of leeway, the guidelines have received a great deal of disagreement. This is still an area of medicine in its infancy and as such has many divergent opinions.

Treatment of Adolescents

Before any physical interventions are considered for adolescents, extensive exploration of psychological, family, and social issues should be undertaken.

Puberty suppression, to buy a child time to come to a gender identity resolution, is becoming a standard of care for adolescents with gender incongruence. In order for adolescents to receive puberty-suppressing hormones, the following criteria should be present:

1) The adolescent has demonstrated long-lasting and intense gender dysphoria.
2) Gender dysphoria **worsened** with puberty.
3) Coexisting psychological, medical, or social problems that could interfere with treatment have been addressed.
4) The adolescent is able to and has given **informed consent**.

For **puberty suppression**, adolescents should be treated with GnRH analogues, which stop luteinizing hormone secretion and therefore testosterone, or estrogen and progesterone secretion. The position of the WPATH, American Psychiatric Association (APA), and the American Academy of Child and Adolescent Psychiatry is that therapy with a gender atypical child should allow their gender identity to unfold without trying to influence the outcome one way or the other. Puberty suppression has become the standard of care but like everything else in trans care, is controversial. It is **considered a fully reversible intervention**. However, the long-term effects have not yet been fully investigated.

Neither puberty suppression nor allowing puberty to occur is a neutral act. Functioning later in life can be compromised by the development of irreversible secondary sex characteristics during puberty (beard growth, voice deepening and breast development) and by years spent experiencing intense gender dysphoria. My experience is that amazingly successful transitions can occur with the proactive suppression of puberty. However, there are concerns about negative physical side effects of GnRH analogue use on bone development and height. Long-term studies have not been completed and careful monitoring while using this approach is warranted.

DepoLupron is an ideal treatment as it produces profound suppression and very long acting versions are available. Puberty suppression can be considered from the early signs of puberty until up to age 16. Our experience at SOFT has been for a maximum of 2 years. By that time most of the adolescents friends are beginning to develop and the adolescent is very ready for hormone treatment.

One additional issue should be identified when considering puberty suppression. The child is prevented from developing in their biological sex. Therefore, **they will not develop reproductive function** (mature eggs or sperm) and having genetic offspring will not be available. At this time there is no technique for preserving function from the gonads of these individuals while suppressing puberty.

Cross-gender hormone treatment is much more controversial for adolescents but is usually the next step if GID persists and the patient requests it after a course of puberty suppression. Requests become stronger as the adolescent's peers begin their sexual development.

Treatment of Adults

There is also a recognition that **every trans person will not and need not choose to have every possible medical treatment**. Some trans people will choose to live as the other gender without taking hormones or having surgery. Some will use hormonal treatment but not surgery. These choices may stem out of concerns about medication and/or surgery effects, a desire to maintain reproductive function, personal medical history or risk factors, cost of treatments, or other individual reasons. The role of the treatment provider is to be knowledgeable about available treatments, to provide education and informed consent about risks and benefits, and to help the patient access care when needed.

Treatment of trans people usually involves the process of **transition**. Transitioning is the process of ceasing to live in one gender role and starting to live in another. Transitioning can involve name changes, wearing clothing seen as gender appropriate or the use of make-up, and generally "coming out of the closet". It may involve but does not have to involve some kind of medical sex reassignment therapy and in the form of hormone replacement therapy (HRT) and/or sex reassignment surgery.

Counseling and Psychological Assessment

In London, at SOFT, we use the Informed Consent Model of Care. Informed Consent is a standard of care that is acknowledged by medical providers around the world. More information is found at icath.org (Informed Consent for Access to Trans Health). Transgender, intersex and gender non-conforming people are not required to attend therapy to receive desired gender confirming health care. No one should have to go to therapy to prove their true gender, or to get permission to change their bodies. Trans, transgender, intersex and gender non-conforming people are able to decide what is best for themselves and their bodies, and when. Therapy is an option, not a requirement, for accessing gender confirming health care. The informed consent model is not the same as "hormones on demand" and all patients go through an extensive examination process.

Most progressive health professionals do not consider being trans a disease but do recognize that being trans is difficult. Trans individuals may benefit by talking through their feelings in depth with someone who will listen attentively and discuss their alternatives knowledgably. However a cautionary approach should be taken when there is no sign of distress in the individual. Introducing therapy as a preventative measure will not likely benefit the individual.

However, research on gender identity is relatively new to psychology and scientific understanding. Trans issues are both new in the scientific field and affect relatively few people, so many mental healthcare providers know little about trans issues. Trans people seeking help from these professionals often end up educating the professional in the process of or instead of receiving help. Fortunately, we have a few councilors and psychiatrists in our area who have taken a special interest in this issue.

At SOFT, we always **offer a referral for counseling to new trans people presenting to the practice**. Being trans is difficult as it may involve complicated treatments and could complicate relationships with others and society. However, the referral for counseling should be considered because of these difficulties and any existing gender identity dysphoria that will often precipitate a **depression and or anxiety** and not simply because of being trans. An older study demonstrated rates of depression were 62% in trans women and 55% in trans men. Recent statistics from the trans PULSE project (an Ontario-wide, community based project) demonstrate similar numbers (66.4% FtM and 61.4% in MtF). Higher rates of **suicide** attempts and being the victim of **violence** have also been found in the trans populations. Many trans people are **under-employed**, in part due to employers discomfort with the condition. They also face discrimination in many other aspects of their lives.

A great deal of counseling and support for trans comes from **community support** groups. In London we are very fortunate to have excellent support groups. There are Alphabet Community Centre, Pflag, LTSCS, Pride Western, Spectrum Fanshawe, Metropolitan United Church, and GSA's at most of the schools are available for a wide spectrum of organized support and social events. For information on the local community refer to Alphabet's website at www.acclondon.ca.

At SOFT, we always ask about support in the initial interview. The vast majority of these patients have been involved with the local support groups. There is also support **online** and most have also been involved with this.

Being trans is not considered a disease by most forward thinking health care professionals. In 2010, France became the first country in the world to remove trans identity from the list of mental diseases. Since then, many other countries have followed suit and many

more if not all will eventually.

The solution for GI is whatever will alleviate suffering and restore functionality. Often, but not always, this consists of undergoing supportive psychotherapy and gender reassignment. World Professional Association for Trans Health (WPATH) has published the most up to date standards for trans health care. The 7th version was published in 2012.

Hormone Treatment

The main contribution to the trans community from SOFT has been prescribing and monitoring hormone treatment.

Hormone treatment is **initiated after a psychosocial assessment** has been conducted and **informed consent** has been obtained. The criteria for hormone therapy should include; persistent gender dysphoria, the ability to make a fully informed decision and to consent for treatment and control and treatment of any significant medical or mental health concerns.

The initial consultation at SOFT involves a detailed history of the development of the transgender condition. This almost invariably **demonstrates long-term gender incongruence and dysphoria**. I have been amazed at the consistency of this history.

During the interview the **ability to make informed consent is evaluated** and other medical issues are explored and evaluated. To give informed consent the patient must understand the risks and benefits of the procedure. Hormone treatment is considered **a partially reversible intervention**.

It is quite common for trans people to have been diagnosed with other psychological conditions before beginning transition. These have often been treated prior to the evaluation for being trans. Counseling has occurred in 191/289 or 66 % of transgenders prior to being evaluated at SOFT. Many times, this counseling is re-started or continued. All non-counseled or not currently counseled patients are offered a referral for counseling but the initiation of hormone treatment is not withheld if this evaluation is declined.

Trans patients present for medical care at many different ages. Fortunately, we have seen a trend to **younger ages in more recent years**. As we age, we tend to get more physical illnesses that may be of concern when considering hormone treatment. These physical illnesses are evaluated using a detailed medical history, directed physical examination if necessary. We will often request copies of previous counseling or medical illness. Many physicians perform blood testing or other lab tests with this initial visit. Although I did this in the past, I did not find it helpful. Liver and kidney function tests are usually performed with the hormone profile in the second visit to ensure that the medications are having no ill effects. To date, no ill effects have been found.

Hormone therapy must be individualized based on a patient's goals, the risk/benefit ratio of medications, the presence of other medical conditions, and consideration of social and economic issues. Hormone therapy can provide significant comfort to patients who do or do not wish to make a social gender role transition or undergo surgery, or who are unable to do so.

FtM patients will experience deepened voice, clitoral enlargement (variable), growth in facial and body hair, cessation of menses, atrophy of breast tissue, and decreased percentage of body fat compared to muscle mass. Of these changes, the deepening of the voice and growth of hair and balding will probably not revert to normal if the hormones are discontinued. Possible risks of masculinizing hormone treatment include acne, male pattern alopecia or balding, weight gain, sleep apnea and polycythemia. Very unlikely but possible risks include elevated liver enzymes, hyperlipidemia, increased blood pressure, type 2 diabetes and cardiovascular disease.

MtF patients will experience breast growth, decreased erectile function, decreased testicular size, and increased percentage of body fat compared to muscle mass. Of these changes, breast growth is probably not fully reversible. Possible risks of feminizing hormones include venous thrombotic disease, gallstones, elevated liver enzymes, weight gain, hypertriglyceridemia, and cardiovascular disease.

Future reproduction should always be considered before beginning hormone treatment. For MtF patients this can be as simple as **freezing sperm** before commencing treatment. For FtM patients the situation is more complex. For those in a stable relationship, eggs can be stimulated, retrieved, fertilized and **embryos frozen**. For those not in a relationship, egg freezing is possible. It will still involve stimulation of eggs, retrieval of the eggs and **freezing the eggs**. Both these technologies are available but expensive.

MtF Hormone Treatment - Regimens

There are no absolute contraindications to feminizing therapy but absolute contraindications exist for the different feminizing agents, particularly **estrogen**. These include previous venous thrombotic events (VTE) related to an underlying hypercoagulable condition, history of estrogen-sensitive neoplasm, and end-stage chronic liver disease.

Other medical conditions, such as gallstones, hypertriglyceridemia, hypertension, hyperprolactinaemia, and diabetes can be exacerbated by estrogen or androgen blockade, and therefore should be evaluated and reasonably well controlled prior to starting hormone therapy.

To date, no controlled clinical trials of any feminizing/masculinizing hormone regimen have been conducted to evaluate safety or efficacy in producing physical transition. As a result, wide variation in doses and types of hormones have been published in the medical literature.

Use of **oral estrogen**, and specifically ethinyl estradiol, appears to increase the risk of VTE. Typical transgender estrogens were two to three times as high as the recommended doses for hormone replacement therapy (HRT) in postmenopausal women. Because of this safety concern, ethinyl estradiol is not recommended for feminizing hormone therapy. Transdermal estrogen is recommended for those patients with risks factors for VTE. Oral estrogen, in the form of Estrace ® is usually used at SOFT. The usual starting dose is 2 mg twice a day. This is about twice what is usually prescribed for a woman in early menopause with fairly severe symptoms. It is still much lower than the estrogen usually available in an oral contraceptive pill. The original dose is often adjusted by testing hormone levels on subsequent visits and changing the dose to develop an estradiol level equal to the midrange of a cycling female. (usually between 70-600 pmol/L). Early on we prefer levels higher in the range to promote breast development.

A combination of estrogen and **"anti-androgens"** is the most commonly studied regimen for feminization. Androgen-reducing medications, from a variety of classes of drugs, have the effect of reducing either endogenous testosterone levels or testosterone activity, and thus diminishing masculine characteristics such as body hair.

Further, without the use of anti-androgens, adequate and desirable demasculinization will likely be greatly curtailed. One should realize that the bulk of these preparations used in trans medicine are comprised of drugs that produce an anti-androgenic effect incidental to their designed purpose.

Spironolactone, an antihypertensive agent, directly inhibits testosterone secretion and androgen binding to the androgen receptor. It is the most widely used antiestrogen.

Cyproterone acetate is a progestational compound with anti-androgenic properties and is occasionally used in this situation.

Finasteride, a 5-alpha reductase inhibitor, blocks the conversion of testosterone to the more active agent, 5-alpha-dihydrotestosterone.

GnRH agonists are medications that block the gonadtropin-releasing hormone receptor, thus blocking the release of follicle stimulating hormone and luteinizing hormone. This leads to highly effective gonadal blockade. Depo-Lupron has become the agent of choice for adolescent trans because of its profound suppression and convenient dosing formulations.

We, at SOFT, have chosen **Suprafact nasal spray ®** for most of our trans people. The nasal spray format is usually preferred to a daily subcutaneous injection, and it is probably the least expensive of the GNRH agonists and usually the suppression is not as profound as other formats (and the amount of suppression can be modified by varying the number of sprays). The goal should not be to eliminate all original hormone (testosterone) production. Biological females produce some testosterone and biological males produce some estrogen. I have also chosen this agent because it forms a "central blockage", actually changing the whole body chemistry, including the brain chemistry. It seems illogical to consider a GNRH agonist appropriate for the suppression of puberty and not to consider it appropriate for adults. We, at SOFT, have chosen Suprafact nasal spray because in general, its suppression is not as profound as DepoLupron, it is less expensive and its dosage format can be modified to effect the exact amount of suppression which is desired,

Inclusion of progestin in feminizing hormone therapy is controversial. Many clinicians believe that these agents are necessary for full breast development and this has been my experience. **Micronized progesterone** (Prometrium ®) is better tolerated and more natural than medroxyprogesterone (Provera ®). It may also have a more favorable impact on the lipid profile. Inclusion of progesterone just makes sense to me, as that is what biological females have and it is known to effect breast development in biological females. Although direct comparisons are not possible, my impression is that breast development is faster and more complete with this regime. We usually start with Prometrium 100 mg twice a day but often reduce this to once a day after full breast development has occurred.

MtF Hormone Treatment - Results

Most physical changes in MtF trans people are reported to occur over the course of two years with usual treatments. The amount of physical change and the exact timeline of effects can be highly variable. However, breast development will typically be less than what is experienced in the genetic female population. Under most circumstances, breast development exceeding a B cup is rare. Development will take at least 2 years to reach maximum size. The table below indicates the expected changes and timelines with the most widespread treatment, which employs estrogen with spironolactone (± progesterone).

Effect	Onset	Full change
Body fat redistribution	3-6 m	2-5 y
Decreased strength	3-6 m	1-2 y
Skin changes (softness, oil)	3-6 m	?
Libido	1-3 m	1-2 y
Erections	1-3 m	3-6 m
Breast growth	3-6 m	2-3 y
Decreased facial hair	6-12 m	3 y

Decreased body hair	6-12 m	3 y
Male pattern baldness	1-3 m	1-2 y
Happiness	?	?
Comfort in own skin	?	?

Our experience at SOFT has been similar but I believe more rapid and perhaps more complete. I have continued to use Suprafact nasal spray ® as my blocker of choice as I believe it changes the whole body chemistry in a more natural way. The usual estrogen is Estrace ® 2 mg twice a day and Prometrium ® 100 mg twice a day. I have tabulated our results in 108 MtF trans people who have been treated by SOFT for at least 2 years. Those results are listed in the table below.

Effect	Onset	Full change
Body fat redistribution	1-3 m	2 y
Decreased strength	3-4 m	1 y
Skin changes (softness, oil)	1-3 m	6 m
Libido	1-3 m	6 m
Erections	1-3 m	Immediate – 1 m
Breast growth	3 m	1 y
Decreased facial hair	6 m	1 y
Decreased body hair	4 m	1 y
Male pattern baldness	?	?
Happiness	Immediate	Continues
Comfort in own skin	Immediate – 3 m	Continues

The usual repeat visit at SOFT is at **6 months**. By that time, almost all (106/108) report change in body shape and decreased strength. All patients (108/108) reported improved skin softness. Most (86/108=79.6%) reported decreased libido and decreased spontaneous erections. Most (106/108) had breast growth (55/108=50.9% breast buds), (51/108=47.2% A cup), (2/108=1.9% B cup). Most reported decreased facial hair (77/108=70.3%) and decreased body hair (90/108=83.3%). All (108/108) reported increased happiness and increased comfort in their own skin. Three (3/108=2.8%) began to experience improvement in their male pattern baldness. All three had a family history that most males were bald at a young age.

Many (48/108=44%) had psychological conditions requiring medication prior to starting hormones. Over half (26/48=54%) were able to stop or significantly decrease their psychotropic medications after starting hormone treatment.

FtM Hormone Therapy - Regimens

Testosterone generally can be given by mouth, transdermal, or parenteral (IM). Oral testosterone undecanoate (Androcur ®), results in lower serum testosterone levels and less profound changes. Historically, I have not found it beneficial in promoting increased libido for women in the past. A minority (2/78=2.6%) requested transdermal treatment and have therefore been treated with 3-6% testosterone cream compounded by a pharmacist.

There is evidence that transdermal and intramuscular testosterone achieve similar masculinizing results, although the timeframe may be somewhat slower with transdermal preparations. This has been my experience. Most frequently we employ **Delatestryl ®**. It contains 200 mg / ml and therefore requires a smaller injection. **Depo-Testosterone ®** is the alternative and contains 100mg /ml. Our usual starting dose is milliliter intramuscular ever 2

weeks. This usually develops a testosterone be blood level higher than normal males. This allows a very rapid transition. Once transition has occurred, we often suggest decreasing the dose and aim for a testosterone level usually found in biological males (300- 700 nmol/L).

Progestin, most commonly medroxyprogesterone, can be used for a short period of time to assist with menstrual cessation. This has not been employed at SOFT.

Although it has been acknowledged in MtF trans people that **blockers** are very important, there has been very little interest in this for FtM trans people. Reasonable blockers do exist. Letrozole, clomiphene or tamoxofene would be candidates but no reports have been published documenting trials.

At SOFT, we developed a protocol, which **mirrors our experience with MtF trans treatment**. We usually employ an injectable testosterone and add a GNRH agonist, **Suprafact nasal spray ®**. The choice of suprafact in this situation is similar to its choice in MtF trans people. I believe that blocking the production of estrogen and progesterone allows the testosterone to have the strongest effect. I also believe that using a central blocker allows the whole body chemistry (including brain chemistry) to change in the correct direction. Our results have been remarkable. Also, menstruation stops almost immediately. There is usually a menstruation with the beginning of treatment very few continue menstruating. The details are listed below.

FtM Hormone Therapy - Results

For FtM trans reported in the literature, most physical changes, occur over the course of two years. The amount of physical change and the exact timeline of effects can be highly variable. Typical results are tabulated below:

Effect	Onset	Max
Skin (oil, acne)	1-6 m	1-2 y
Facial hair	3-6 m	3-5 y
Body hair	3-6 m	3-5 y
Scalp hair loss	>12 m	?
Increase muscle, strength	6-12 m	2-5 y
Body fat distribution	3-6 m	2-5 y
Cessation of menses	2-6 m	?
Clitoral enlargement	3-6 m	1-2 y
Vaginal atrophy	3-6 m	1-2 y
Deepening of voice	3-12 m	1-2 y

Typical results at SOFT have been more rapid and more importantly more profound. This is demonstrated in the table below. Addition of a blocker seems to be a "no-brainer" and appears to make our FtM program much more rapid and successful.

Effect	Onset	Max
Skin (oil, acne)	Immediate -1 m	1-2 y
Facial hair	1 - 4 m	1 - 2 y
Body hair	1 - 4 m	1 - 2 y
Scalp hair loss	6 m	2 y
Increase muscle, strength	1 – 6 m	1 y
Body fat distribution	1 -6 m	1 y
Cessation of menses	1-3 m	1 – 3 months

Clitoral enlargement	3-6 m	1 y
Vaginal atrophy	?	?
Deepening of voice	Immediate -12 m	1 y

The usual repeat visit at SOFT is 6 months and most changes seem to occur sooner and to a greater extent more rapidly.

Skin oiliness usually is reported almost immediately. This can be problematic, as in a few (6/78=7.7%) patients this has precipitated severe acne. All six of these patients amazed me by more-or-less taking this acne in stride. All of them had sought medical treatment for the acne but none had considered abandoning the hormone treatment. Almost all patients had increased body hair (73/78=94%) and increased facial hair (69/78=88.5%). Two patients (2/78=2.6%) began to experience male pattern baldness but both accepted it as part of there transition. All patients reported increased strength and change in body shape. All patients stopped menstruating within the 4 months. Moreover, many patients only had one (51/78=65.4%) or two (24/78=30.8%) or three (1/78=1.3%) menstrual cycles after starting hormones. All experienced deepening of their voice, some patient reported the onset within 3 weeks.

Additional categories that were not included in this table from the literature were happiness and comfort in own skin. Most of our patients (61/78=78%) experienced increased happiness and all felt more comfortable in their own skin. One common question, which I ask in subsequent visits, is "Do you have any regrets?" The answer is usually: "Only one – that I didn't start this earlier".

Voice Therapy

Changes in the voice appear to be a one-way street. MtF trans people get very little benefit from hormone therapy as far as changes in their voice. FtM trans people, on the other had experience almost immediate changes in the pitch of their voice.

Voice therapy can be helpful in teaching MtF trans PEOPLE to feminize their voice. Pitch can be raised through persistent vocal practice. Inflection and manner of speech are also very important and can benefit from training.

Advice is also commonly given through the transgender community and is also very helpful. Some trans people will undergo voice feminization surgery. We have no experience with this at SOFT.

Surgery

Surgery is often the last and the most considered step in the treatment process for gender dysphoria. While many trans people find comfort with their changed gender identity without surgery, for many others surgery is essential to alleviate their gender dysphoria. Surgery is considered a **non-reversible treatment**. However, follow-up studies have shown an undeniable beneficial effect of sex reassignment surgery on postoperative outcomes such as subjective well-being and sexual function.

In our practice at SOFT, we cannot offer surgery but we have had 6 MtF trans undergo genital surgery and 2 undergo breast augmentation and 9 FtM transgenders have undergone subcutaneous or open mastectomy and 11 have undergone a hysterectomy and removal of their ovaries. All trans patients who had surgery (which included removal of gonads - testicles or ovaries) stopped Suprefact. Although reports in the literature discuss continuing blockers in MtF transgenders to obtain additional demasculinization, we have not found this necessary at SOFT.

WPATH considers the referral for surgery very important. Ideally, two physicians should

make the referral for genital surgery. In Ontario, a formal assessment at CAMH is necessary for OHIP funded sexual reassignment surgery.

MtF surgical procedures may include augmentation mammoplasty (implants/lipofilling), penectomy, orchiectomy, vaginoplasty, clitoroplasty, vulvoplasty, facial feminization surgery, liposuction, lipofilling, voice surgery, thyroid cartilage reduction, gluteal augmentation (implants/lipofilling), hair reconstruction, and various aesthetic procedures.

FtM surgical procedures may include subcutaneous or open mastectomy, creation of a male chest, hysterectomy/salpingo-oophorectomy, reconstruction of the fixed part of the urethra, which can be combined with a metoidioplasty or with a phalloplasty (employing a pedicled or free vascularized flap), vaginectomy, scrotoplasty, and implantation of erection and/or testicular prostheses, voice surgery, liposuction, lipofilling, pectoral implants, and various aesthetic procedures.

Although not an explicit criterion, it is recommended that MtF patients undergo feminizing hormone therapy (minimum 12 months) prior to breast augmentation surgery. The purpose is to maximize breast growth in order to obtain better surgical (aesthetic) results.

Trans and Society

In Canada, a private members bill protecting the rights of freedom of gender expression and gender identity passed in the Ontario Legislature on February 9, 2011. It amends the Ontario Human Rights code to help protect gender-diverse people from discrimination by including gender identity and expression in the list of prohibited grounds for discrimination, as well as including gender identity and expression in the description of an identifiable group, so that offences deliberately against gender-variant people can be punished to a similar extent as a racially-based crime.

Trans people are very prone to self-treatment. A 2013 study demonstrated that 10% take unprescribed hormones and over 1% have attempted self-surgeries. This may be caused by a perceived or real bias of the medical community. Hopefully, this will improve as “trans-friendly” medical services become more available.

In Conclusion

I hope this overview is useful for both trans patients and their significant others. I hope also, that others will read it to understand this situation. Especially, that it should not be considered a medical or psychological illness. Being trans is difficult. Most trans people would just prefer to be their felt gender. We have come a long way but trans people are probably from a society point-of-view where gays and lesbians were 30 years ago.

My hope for the future would be that our scientific knowledge of trans people improves and that access to medical care, including surgeries, improves. Also, that social acceptance and awareness of transgender improves. Beginning transition at a younger age seems to benefit most. Being accepted as part of the community including the expectation of no prejudice or violence and being appropriately and fully employed is everybody’s right.

Resources

The Lesbian, Gay, Bi & Trans Youthline offers free peer support for youth aged 26 and under (1-800-268-9688).

Parents, Friends of Lesbians and Gays (PFLAG) – **PFLAG** (www.pflagcanada.ca) is a resource for LGBT people and their families. **The LGBTQ Parenting Connection Resource**

Database is a central access point for reliable and up-to-date information and resources on lesbian, gay, bisexual and trans (LGBTQ) parenting. **OK2beme** (ok2beme.ca) is a set support services for children and teens in the Waterloo area.

Alphabet Community Centre is a not for profit agency dedicated to the support of Trans* people in the City of London and surrounding area. Alphabet provides group therapy, individual counseling, and 24/7 crisis support through the crisis line. Alphabet is the first line contact for individuals "coming out" as trans or exploring their feelings. Our facilitators have all faced systemic oppression themselves and go through rigorous training on anti-oppression, harm reduction and client support. We also operate the patient advocacy office, where we accompany people to appointments where they are uncomfortable or feel they may be unsafe. We work closely with SOFT, schools, doctors, therapists and support agencies in London to ensure each client receives competent, qualified care in a respectful and compassionate manner. Our goal at Alphabet is to bring each client back to a healthy, happy state where they can contribute back to the community and to themselves.

Many trans individuals may have found other resources that have been helpful to them. The most complete list of resources which I have found is on the Trans Pulse website (transpulseproject.ca). This is by no means a complete list of resources. We at SOFT would welcome additional suggestions for inclusion in this section.

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