

# Dental Care of Transgenders on Long-Termhormone Therapy

## Abstract

Recent studies in the United States have noted that there are over a million individuals who identify as transgenders and have begun the process of hormone therapy. Such therapy regiments allow the individual to transform from the birth gender to the desired gender. The time frame of the hormone therapy extends over a lifetime and can have some health consequences for the individual. It is therefore paramount to the dentist's understanding what the health risks of a transgender on hormonal therapy can be in order to make appropriate decisions in these patients's dental treatment.

## Introduction

In the Hippocratic Oath at Dental School Graduation, we swear to "first do no harm" to our patients. It follows that we shall not discriminate regardless of race, sex or gender. It is incumbent upon us to continuously learn about our patients so that we shall always treat them safely and provide them with compassionate care. In the Lesbian, Gay, Bisexual & Transgender (LGBT) community, the Transgenders are perhaps the group that requires significant review of their medical history when they present for dental treatment. In the event of hormone therapy in transgender individuals, there are a number of issues that require consideration.

1.4 million people in the United States identify themselves as Transgender in a study done in 2016. It is noted in the literature that a large number of these individuals experience discrimination that lead to barriers for access to healthcare [1]. By definition, transgender is defined as an individual who identifies with the opposite sex to which they were assigned at birth. A transgender male (also known as transmen, female to male or FTM) is an individual who is assigned to the female sex at birth but desires to be identified as a male. A transgender female (also known as transwoman, male to female or MTF) is an individual who is assigned the male sex at birth but desires to be identified as a female. Over the past decades, some of these individuals have taken over the counter hormones to transform themselves to the opposite sex [2]. In more recent years,

safely monitored hormone therapies are utilized by physicians to assist transgenders, clinical guidelines have been established by the Endocrine Society. Some transgender individuals will complete the transformation with sex reassignment surgery which would be completed in multiple steps [3].

The American Psychiatry Association has ruled that individuals who identify as transgenders do not have a pathological illness! This misunderstood population often experiences discrimination on many levels [4]. This may lead them to unemployment and subsequently no healthcare insurance. Additionally, education of health care professionals regarding the care of transgenders is minimal [5]. This is especially true in today's dental schools. While local laws do not always protect transgenders from discrimination [6,7], it is incumbent upon us as dentists to learn more about this group of human beings in order to be a part of the solution not the problem (Table 1) [8].

## Hormone Therapy in Male to Female (Transgender female)

Transgender females undergo hormone therapy utilizing a combination of exogenous estrogen and anti-androgen therapy. The combination will stimulate a decrease in male pattern hair growth, change body fat distribution and induce breast tissue formation. In addition, the hormone combination will decrease testicular size and erectile function. There is an interval of 18-24 months of time on hormone therapy for transgender females to experience the

**Table 1:** Simple fixes to become a gender sensitive practice.

1) Change your Medical History to obtain the correct gender identity	Gender Options can be
	A) Male
	B) Female
2) You can follow up with a question like:	C) Other _____
	Do you identify as a Transgender?
	A. Yes
3) In patients that identify as Transgenders: (Medical history forms are available online that ask specifics that may be relevant to dental treatment.)	B. No
	Are you
	A. Male to female
	B. Female to male
4) Ask the person, what are your pronouns? (He and She are typical male/female pronouns.)	Gender non-conforming
	Use of They/Them/Theirs or Ze/Hir/Zir/Hirs/Zirs/Hirself/Zirself is common in the LGBTQ community.
5) Creating a Gender neutral restroom	Signage that indicates it the restroom can be used by all genders



Geraldine Weinstein\*

Division of General Dentistry, University of Connecticut School of Dental Medicine, USA

**\*Address for Correspondence**

Geraldine Weinstein, Division of General Dentistry, 263 Farmington Ave, Suite LM031, Farmington, CT USA 06030-3811, USA, E-mail: gweinstein@uchc.edu

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**Table 2:** Hormone therapy for Male to Female (Transwomen) [9,12].

<b>Estrogen</b>	
Oral Estradiol	Highest rate of thrombotic events
Transdermal estradiol patch	Preferred route
Parenteral estradiol valerate or cypionate	Preferred route
<b>Anti-Androgens</b>	
Spironolactone	Can cause hyperkalemia
Finasteride	Can cause liver toxicity
GnRH agonist (leuprolide)	Expensive option
Progestin	Long-term use is a theoretical cancer risk.

**Table 3:** Hormone Therapy for Female to Male (Transmen) [9,12].

Testosterone Parenteral- Enanthate or cypionate	Subcutaneous or Intramuscular
Transdermal testosterone gel or patch	Testosterone doses are tittered over the first few months of initiating hormone therapy.
Testopel Implant	Often utilized after maintenance dose of testosterone is established for the patient.

maximum amount of change [9]. While the literature reports that hormone therapy is safe when monitored closely, long-term use may pose certain risks. In the transgender female, venous thrombosis is a concern that may be related to estrogen hormone therapy, specifically ethinyl estradiol which is recommended not to be used in transgender care [10]. In the 2012 study by Wierckx et al. transgender females on estrogen hormones for 11+ years had a 6% incidence of venous thromboembolism (VTE) [11]. Routes of administration of estrogens include oral, transdermal and parental (subcutaneous, intramuscular). Formulations of estrogen via transdermal patch or parenteral route are preferred to decrease the risk of thrombotic events [10,12].

Anti-androgen therapy in transgender females used in conjunction with estrogen have their own implications of medical risks. Hyperkalemia is associated with use of spironolactone, the most common anti-androgen prescribed. Severely hyperkalemic patients may present with palpitations, muscle pain, muscle weakness or numbness. Other options like finasteride (5 $\alpha$ -reductase inhibitors) can be associated with liver toxicity [3].

In studies by Wierckx et al. (2013) transgender adults on hormone therapy have exhibited increased incidence of type 2 diabetes [13]. Similarly, Gooren et al. (2008), noted fasting insulin in transgender women to be elevated [14]. In the largest reported cohort study of Transgenders, Nota et al. followed transwomen on estrogen (non ethinylestradiol) and anti- androgens for an average of twenty two years. Transwomen compared to men and women who are not on hormone replacement have a higher incidence of stroke, myocardial infarction and venous thromboembolism (Table 2) [19].

### Hormone Therapy in Female to Male (Transgender Male)

Transgender males undergo testosterone regimens to transition from female sex assigned at birth to male. Testosterone replacement therapy will allow for lowering of the voice, male pattern hair growth, atrophy of the ovaries and muscle and fat redistribution and clitoral enlargement [10]. Some undesirable effects that have been observed have been increased systolic blood pressure, decreased HDL cholesterol and increased triglycerides [20]. In a study by Nota et al. 1358 transgender men have been observed to have increased risk of Myocardial Infarction compared to women who are not on hormone therapy [19]. It is assumed that this is a result of the effect of hormone

therapy on cardiovascular risk factors. Confounding factors such as smoking and psychosocial stressors were not included in the study.

The transgender male has been found in general to have increased incidence for type 2 diabetes [13]. The mechanism of the effect of hormone replacement on glycemic control and/or insulin resistance is not fully understood in the transgender population.

A baseline bone mineral density is recommended in Transgender men on testosterone [21]. Osteoporosis screening is the standard of care in transgender men ten years after initiation of hormone therapy [21]. The levels of estrogen in transgender men are lower than female controls which leads to Osteopenia [11]. In transmen that are non-compliant with their estrogen therapy, a decrease in bone mass was noted (Table 3) [22].

### Summary: Dental Implications for Transgender Care

As in patients with underlying medical conditions, the transgender patient should have regular follow up with the physician and be in good metabolic control [23]. The physician should monitor hormonal levels, check complete blood counts, liver function test, lipid panel and hemoglobin HbA1C on a regular basis. In patients that have a predisposition to thrombosis (including those that have had a history of thrombosis), these patients may be on an anticoagulant [15]. In such patients, it may be prudent to have a conversation with the patient’s physician when planning surgical or invasive dental work especially if the patient is on multiple antithrombotic/antiplatelet medications [16]. Transgender patients that smoke and/or have hypertension are at increased rate of thrombosis [13,24].

Screening for diabetes is essential in high risk patients like transgenders. For years the existence of periodontal disease has been known to have a direct relationship with Diabetes [17]. Severity of Chronic Periodontal disease complicates metabolic control and ultimately Diabetes Mellitus [18]. The ability of the patient to heal may be compromised after procedures involving the soft tissues and extensive oral surgery. For example, implant placement in a poorly controlled diabetic has been shown to have a higher rate of failure [25]. In patients that have already been diagnosed with Diabetes, monitoring of their Hemoglobin A1c to levels below 7.0 % is essential prior to invasive dental procedures [26]. In patients that smoke and have Diabetes, the risk for severe chronic periodontitis is greater. Smoking cessation counseling should be enforced.

In some transgender individuals, unusual sexual practices and behavior may put them at high risk for sexually transmitted disease [12]. Careful examination of the oral cavity is essential to screen for signs and symptoms of sexually transmitted disease [16]. A number of these lesions may be viral like Herpes Simplex Virus 1 & 2 or Human Papilloma Virus (HPV) [27]. In adolescents to young adults, discussion of the HPV vaccine is essential as it has shown efficacy in preventing oral and pharyngeal cancers caused by HPV [28]. In patients that have been diagnosed with HIV/AIDS, opportunistic infections can manifest in the oral cavity. In such cases, systemic treatment should be coordinated with the patient's physician [29].

The number of transgender individuals in the United States may continue its upward trend in the future. Dentists in all types of practices should be prepared to do due diligence by asking the questions and get a clear understanding of the transgender patient's medical history. Such clarity will allow us to provide safe and timely dental treatment to patients who have experienced many of life's battles.

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