



Prosthodontic Considerations for Transgender Patients: Clinical, Esthetic and Psychosocial Perspectives

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ABSTRACT :

Background: Transgender and gender-diverse (TGD) people have unique oral health needs that intersect with hormone therapy, surgical interventions, and psychosocial determinants. Prosthodontists are increasingly called upon to provide restorative and esthetic solutions that support gender affirmation.¹

Objective: To synthesise evidence and provide practical guidance on prosthodontic care for transgender patients, covering biological influences, implant and denture planning, esthetic choices (including tooth shade and tooth selection), speech and occlusion, psychosocial and ethical considerations, and clinical workflow recommendations.²

Methods: A narrative synthesis of peer-reviewed literature, clinical guidelines and reviews from 2000–2025 was undertaken.³

Results & Conclusion: Hormone therapy and facial surgeries affect bone, soft tissue, and masticatory dynamics. Prosthetic planning should integrate individualized esthetic goals, functional demands, and trauma-informed communication. Interdisciplinary coordination and targeted research (implant outcomes under hormone therapy, PROMs for gender-affirming dental care) are priorities for improving care quality.⁴

Keywords: Transgender; Gender-affirming care; Prosthodontics; Oral health; Esthetics; Implants.

1. Introduction

Gender-affirming care recognises an individual's right to align physical characteristics with their gender identity. Prosthodontics contributes directly to facial and dental appearance—critical domains of social perception and self-identity—so it is an important element of holistic gender-affirming healthcare.¹ However, transgender patients often encounter barriers to dental services (discrimination, provider knowledge gaps, and insurance limitations), resulting in greater unmet oral-rehabilitation needs than in cisgender populations.²

This review summarises prosthodontic considerations specific to transgender patients, emphasising practical clinical recommendations for integrating biological, esthetic, and psychosocial dimensions into everyday practice.³

2. Oral Health and Access Issues Relevant to Prosthodontics

Transgender patients report higher rates of dental avoidance, untreated caries, and periodontal concerns—driven by prior negative experiences, social determinants, and limited access to culturally competent care.⁴ Psychological comorbidities (anxiety, depression) further influence oral hygiene behaviour and attendance for prosthetic follow-up.⁵ For prosthodontists this means expanding the initial assessment to capture social context, mental health support needs, and detailed medical histories (including gender-affirming hormone therapy [GAHT] and surgical history).⁶

A welcoming clinic environment (affirming signage, gender-neutral intake forms, staff training) measurably reduces anxiety and improves treatment uptake—practical first steps for clinics offering prosthodontic services.⁷

3. Biological Effects of Gender-Affirming Therapies with Prosthodontic Relevance

3.1 GAHT and Bone Physiology

GAHT commonly involves estrogen (+/- antiandrogens) for transfeminine patients and testosterone for transmasculine patients. These hormones affect systemic bone turnover and may alter cortical thickness and trabecular structure in craniofacial bones.⁸ Testosterone is associated with increased cortical bone mass and masticatory muscle hypertrophy in some patients; estrogen can influence bone turnover rates and mucosal vascularity.⁹ These hormonal influences can have direct implications for implant primary stability, marginal bone maintenance, and long-term osseointegration.¹⁰ Given heterogeneous evidence, clinicians should use targeted imaging (CBCT) and consider endocrinology consultation for complex cases or when bone health is uncertain.¹¹

3.2 Mucosa, Saliva and Healing

Sex steroids modulate salivary flow and mucosal resilience. Many TGD patients report xerostomia or mucosal sensitivity—symptoms that may be medication-related or stress-related—affecting denture retention, comfort, and prosthesis tolerance.¹² Impression materials, border molding techniques, and choice of denture base liners should be adapted to reduce irritation; resilient liners and careful occlusal adjustment often improve tolerance.¹³

3.3 Surgical Remodeling and Timing

Facial feminization or masculinization surgeries (mandibular contouring, rhinoplasty, rhinoplasty-adjunct procedures, genioplasty) change skeletal relationships and soft-tissue drape, affecting lip support, incisal display, and occlusal vertical dimension.¹⁴ Close coordination with surgeons is essential: provisional prostheses are often useful during healing, while definitive prosthetic work should usually be deferred until soft tissues and occlusion stabilize.¹⁵

4. Implant Therapy: Planning and Precautions

Implant therapy is a cornerstone of modern prosthodontics but raises special considerations in patients undergoing GAHT. Evidence regarding GAHT's direct effect on implant survival is limited and mixed, yet because GAHT influences bone metabolism clinicians should proceed with careful planning: preoperative CBCT for site assessment, conservative loading protocols where bone quality is questionable, and multidisciplinary discussion (endocrinology/medicine) for patients with systemic bone conditions.¹⁶ Peri-operative antibiotic and analgesic choices should consider drug interactions and the patient's overall medical regimen.¹⁷ Where bisphosphonate therapy or other bone-modifying agents are present, risk assessment and referral to specialists is essential prior to implant surgery.¹⁸

5. Esthetic Prosthodontics — Tooth Shade, Tooth Selection and Smile Design

5.1 Tooth Shade & Tooth Selection

Tooth shade and morphology have powerful effects on perceived age and gender. Traditional esthetic conventions—softer contours and lighter shades often perceived as feminine; squarer forms and stronger chroma perceived as masculine—are useful starting points, but patient preference and individual facial characteristics must guide final choices.¹⁹

Tooth shade selection: discuss how shade influences perception (lighter shades may be associated with femininity and youth; slightly darker or warmer shades can read more masculine). Use validated shade guides and digital previews; ensure expectations are realistic, especially when bleaching or restorations are constrained by existing tooth structure.²⁰

Tooth selection (shape & size): choose tooth molds and proportions that align with the patient's affirmed identity and facial proportions—round-incisal forms and fuller embrasures for feminine aesthetics; squarer, broader teeth for masculine aesthetics. For non-binary patients blend features as desired. Trial sets and digital mockups help patients visualise outcomes before definitive fabrication.²¹

5.2 Digital Smile Design and Facial Integration

Digital Smile Design (DSD) with facial scanning enables simulation of tooth shade, shape, and incisal display within the context of the patient's face, allowing iterative co-planning. Use DSD not to impose binary norms but to allow patients to explore a range of expressions that support their identity.²²

6. Removable Prostheses, Denture Fit and Comfort

Removable prosthesis success depends on mucosal health, salivary flow, and patient comfort. In the presence of xerostomia or mucosal sensitivity, choose biocompatible materials, consider soft liners temporarily, and optimise border extension to avoid trigger points for dysphoria.²³ For complete dentures, careful VDO determination and tooth set-up can subtly modify lower-face projection and contribute to gender-affirming facial change.²⁴

7. Functional Aspects: Occlusion, Mastication and Speech

7.1 Occlusal Schemes and Masticatory Load

Testosterone-related increases in musculature may increase bite force in some patients, necessitating occlusal schemes that distribute load evenly and the use of durable restorative materials. Balanced occlusion or mutually protected occlusion can protect implants and prostheses from overload.²⁵

7.2 Speech, Palatal Contouring and Voice Goals

Prosthesis palatal thickness and contour impact resonance and articulation. Many transgender patients pursue voice therapy or modification; prosthodontists should coordinate with speech-language pathologists to avoid unintended effects on resonance and sibilants. Trial prostheses and speech

assessments during try-in allow functional optimisation.²⁶

8. Psychosocial, Communication and Ethical Practice

Creating a gender-affirming and trauma-informed clinical environment is as important as technical skill. Simple measures—using the patient's affirmed name and pronouns, inclusive intake forms, staff education, and visible nondiscrimination statements—reduce anxiety and improve trust.²⁷ Trauma-informed consent (clear stepwise explanation, offering pauses, mirror control during try-ins) is especially useful for patients with dysphoria.²⁸ Ethically, prosthodontists must treat gender-affirming procedures as valid health interventions, document GAHT and surgical histories confidentially, and ensure patients understand staged treatment plans and realistic outcomes.²⁹

9. Interdisciplinary Care Pathways

Optimal gender-affirming prosthodontic care is interdisciplinary. Key collaborators include endocrinologists (bone/hormone management), oral/maxillofacial surgeons (surgical sequencing), speech therapists (voice and resonance), and mental-health professionals (support during lengthy or identity-salient treatment). Shared digital records (intraoral scans, CBCT, facial scans) facilitate communication and coordinated timing.³⁰

10. Practical clinical checklist

1. **Reception & intake:** record affirmed name/pronouns; ensure privacy and staff training.
2. **Medical history:** document GAHT regimen, duration, surgical history, psychiatric meds, anticoagulants, bisphosphonates.
3. **Imaging & planning:** CBCT for implant planning; consider DEXA/endocrine consult if bone health is uncertain.
4. **Esthetic briefing:** use DSD and trial tooth set-ups to align shade and tooth selection with gender-affirming goals.
5. **Material & occlusion:** choose materials and occlusal schemes adapted to functional loads and mucosal tolerance.
6. **Speech coordination:** involve speech therapy for voice/resonance goals; trial prostheses during speech tasks.
7. **Follow-up & PROMs:** document patient-reported outcomes (comfort, esthetic satisfaction, psychological impact).

11. Research priorities and education

High-priority research includes longitudinal studies on implant survival and marginal bone loss in patients on chronic GAHT, development of non-binary morphometric datasets for DSD, and validated PROMs that capture identity-related benefits of prosthodontic care. Dental curricula should include transgender oral-health modules and communication training to close access gaps.

12. Conclusion

Prosthodontic care for transgender patients integrates biology, esthetics and psychosocial care. Thoughtful assessment of GAHT effects, collaborative surgical planning, person-centred esthetic choices (including tooth shade and tooth selection), functional optimisation and trauma-informed communication form the pillars of gender-affirming prosthodontics. As demand grows, research, guideline development and education will be essential to deliver equitable, competent and compassionate prosthodontic services to transgender and gender-diverse communities.

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