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## What does the scholarly research say about the effect of gender transition on transgender well-being?



### Overview

We conducted a systematic literature review of all peer-reviewed articles published in English between 1991 and June 2017 that assess the effect of gender transition on transgender well-being. We identified 55 studies that consist of primary research on this topic, of which 51 (93%) found that gender transition improves the overall well-being of transgender people, while 4 (7%) report mixed or null findings. We found no studies concluding that gender transition causes overall harm. As an added resource, we separately include 17 additional studies that consist of literature reviews and practitioner guidelines.

### Bottom Line

This search found a robust international consensus in the peer-reviewed literature that gender transition, including medical treatments such as hormone therapy and surgeries, improves the overall well-being of transgender individuals. The literature also indicates that greater availability of medical and social support for gender transition contributes to better quality of life for those who identify as transgender.

**Below are the 8 findings of our review, and links to the 72 studies on which they are based. [Click here to view our methodology.](#) [Click here for a printer-friendly one-pager of this research analysis.](#)**

### Research Findings

1. The scholarly literature makes clear that gender transition is effective in treating gender dysphoria and can significantly improve the well-being of transgender individuals.
2. Among the positive outcomes of gender transition and related medical treatments for transgender individuals are improved quality of life, greater relationship satisfaction, higher self-esteem and confidence, and reductions in anxiety, depression, suicidality, and substance use.
3. The positive impact of gender transition on transgender well-being has grown considerably in recent years, as both surgical techniques and social support have improved.
4. Regrets following gender transition are extremely rare and have become even rarer as both surgical techniques and social support have improved. Pooling data from numerous studies demonstrates a regret rate ranging from .3 percent to 3.8 percent. Regrets are most likely to result from a lack of social support after transition or poor surgical outcomes using older techniques.
5. Factors that are predictive of success in the treatment of gender dysphoria include adequate preparation and mental health support prior to treatment, proper follow-up care from knowledgeable providers, consistent family and social support, and high-quality surgical outcomes (when surgery is involved).
6. Transgender individuals, particularly those who cannot access treatment for gender dysphoria or who encounter unsupportive social environments, are more likely than the general population to experience health challenges such as depression, anxiety, suicidality and minority stress. While gender transition can mitigate these challenges, the health and well-being of transgender people can be harmed by stigmatizing and discriminatory treatment.
7. An inherent limitation in the field of transgender health research is that it is difficult to conduct prospective studies or randomized control trials of treatments for gender dysphoria because of the individualized nature of treatment, the varying and unequal circumstances of population members, the small size of the known transgender population, and the ethical issues involved in withholding an effective treatment from those who need it.
8. Transgender outcomes research is still evolving and has been limited by the historical stigma against conducting research in this field. More research is needed to adequately characterize and address the needs of the transgender population.

**Below are 51 studies that found that gender transition improves the well-being of transgender people. [Click here](#) to jump to 4 studies that contain mixed or null findings on the effect of gender transition on transgender well-being. [Click here](#) to jump to 17 studies that consist of literature reviews or guidelines that help advance knowledge about the effect of gender transition on transgender well-being.**

Click on any thumbnail to view its abstract; click below each thumbnail to visit the source website.

- **Ainsworth and Spiegel, 2010**



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**Ainsworth, T., & Spiegel, J. (2010). Quality of life of individuals with and without facial feminization surgery or gender reassignment surgery. *Quality of Life Research, 19*(7), 1019-1024.**

Objectives: To determine the self-reported quality of life of male-to-female (MTF) transgendered individuals and how this quality of life is influenced by facial feminization and gender reassignment surgery. Methods: Facial Feminization Surgery outcomes evaluation survey and the SF-36v2 quality of life survey were administered to male-to-female transgender individuals via the Internet and on paper. A total of 247 MTF participants were enrolled in the study. Results: Mental health-related quality of life was statistically diminished ( $P < 0.05$ ) in transgendered women without surgical intervention compared to the general female population and transwomen who had gender reassignment surgery (GRS), facial feminization surgery (FFS), or both. There was no statistically significant difference in the mental health-related quality of life among transgendered women who had GRS, FFS, or both. Participants who had FFS scored statistically higher ( $P < 0.01$ ) than those who did not in the FFS outcomes evaluation. Conclusions: Transwomen have diminished mental health-related quality of life compared with the general female population. However, surgical treatments (e.g. FFS, GRS, or both) are associated with improved mental health-related quality of life.

- o Bailey, Ellis, & McNeil, 2014



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**Bailey, L., Ellis, S. J., & McNeil, J. (2014). Suicide risk in the UK trans population and the role of gender transition in decreasing suicidal ideation and suicide attempt. *The Mental Health Review, 19*(4), 209-220.**

Purpose: The purpose of this paper is to present findings from the Trans Mental Health Study (McNeil et al., 2012) – the largest survey of the UK trans population to date and the first to explore trans mental health and well-being within a UK context. Findings around suicidal ideation and suicide attempt are presented and the impact of gender dysphoria, minority stress and medical delay, in particular, are highlighted. Design/methodology/approach: This represents a narrative analysis of qualitative sections of a survey that utilised both open and closed questions. The study drew on a non-random sample ( $n = 889$ ), obtained via a range of UK-based support organisations and services. Findings: The study revealed high rates of suicidal ideation (84 per cent lifetime prevalence) and attempted suicide (48 per cent lifetime prevalence) within this sample. A supportive environment for social transition and timely access to gender reassignment, for those who required it, emerged as key protective factors. Subsequently, gender dysphoria, confusion/denial about gender, fears around transitioning, gender reassignment treatment delays and refusals, and social stigma increased suicide risk within this sample. Research limitations/implications: Due to the limitations of undertaking research with this population, the research is not demographically representative. Practical implications: The study found that trans people are most at risk prior to social and/or medical transition and that, in many cases, trans people who require access to hormones and surgery can be left unsupported for dangerously long periods of time. The paper highlights the devastating impact that delaying or denying gender reassignment treatment can have and urges commissioners and practitioners to prioritise timely intervention and support. Originality/value: The first exploration of suicidal ideation and suicide attempt within the UK trans population revealing key findings pertaining to social and medical transition, crucial for policy makers, commissioners and practitioners working across gender identity services, mental health services and suicide prevention.

- o Bar et al., 2016



[Visit Source Website](#)

**Bar, M. A., Jarus, T., Wada, M., Rechtman, L., & Noy, E. (2016). Male-to-female transitions: Implications for occupational performance, health, and life satisfaction. *The Canadian Journal of Occupational Therapy, 83*(2), 72-82.**

Background. People who undergo a gender transition process experience changes in different everyday occupations. These changes may impact their health and life satisfaction. Purpose. This study examined the difference in the occupational performance history scales (occupational identity, competence, and settings) between male-to-female transgender women and cisgender women and the relation of these scales to health and life satisfaction. Method. Twenty-two transgender women and 22 matched cisgender women completed a demographic questionnaire and three reliable measures in this cross-sectional study. Data were analyzed using a two-way analysis of variance and multiple linear regressions. Findings. The results indicate lower performance scores for the transgender women. In addition, occupational settings and group membership (transgender and cisgender groups) were found to be predictors of life satisfaction. Implications. The present study supports the role of occupational therapy in promoting occupational identity and competence of transgender women and giving special attention to their social and physical environment.

- **Bodlund and Kullgren, 1996**



[Visit Source Website](#)

**Bodlund, O., & Kullgren, G. (1996). Transsexualism—general outcome and prognostic factors: A five-year follow-up study of nineteen transsexuals in the process of changing sex. *Archives of Sexual Behavior, 25*(3), 303-316.**

Nineteen transsexuals, approved for sex reassignment, were followed-up after 5 years. Outcome was evaluated as changes in seven areas of social, psychological, and psychiatric functioning. At baseline the patients were evaluated according to axis I, II, V (DSM-III-R), SCID screen, SASB (Structural Analysis of Social Behavior), and DMT (Defense Mechanism Test). At follow-up all but 1 were treated with contrary sex hormones, 12 had completed sex reassignment surgery, and 3 females were waiting for phalloplasty. One male transsexual regretted the decision to change sex and had quit the process. Two transsexuals had still not had any surgery due to older age or ambivalence. Overall, 68% (n = 13) had improved in at least two areas of functioning. In 3 cases (16%) outcome were judged as unsatisfactory and one of those regarded sex change as a failure. Another 3 patients were mainly unchanged after 5 years. Female transsexuals had a slightly better outcome, especially concerning establishing and maintaining partnerships and improvement in socio-economic status compared to male transsexuals. Baseline factors associated with negative outcome (unchanged or worsened) were presence of a personality disorder and high number of fulfilled axis II criteria. SCID screen assessments had high prognostic power. Negative self-image, according to SASB, predicted a negative outcome, whereas DMT variables were not correlated to outcome.

- **Bouman et al., 2016**



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**Bouman, W. P., Claes, L., Marshall, E., Pinner, G. T., Longworth, J., et al. (2016). Sociodemographic variables, clinical features, and the role of preassessment cross-sex hormones in older trans people. *The Journal of Sexual Medicine, 13*(4), 711-719.**

Introduction: As referrals to gender identity clinics have increased dramatically over the last few years, no studies focusing on older trans people seeking treatment are available. Aims: The aim of this study was to investigate the sociodemographic and clinical characteristics of older trans people attending a national service and to investigate the influence of cross-sex hormones (CHT) on psychopathology. Methods: Individuals over the age of 50 years old referred to a national gender identity clinic during a 30-month period were invited to complete a battery of questionnaires to measure psychopathology and clinical characteristics. Individuals on cross-sex hormones prior to the assessment were compared with those not on treatment for different variables measuring psychopathology. Main Outcome Measures: Sociodemographic and clinical variables and measures of depression and anxiety (Hospital Anxiety and Depression Scale), self-esteem (Rosenberg Self-Esteem Scale), victimization (Experiences of Transphobia Scale), social support (Multidimensional Scale of Perceived Social Support), interpersonal functioning (Inventory of Interpersonal Problems), and nonsuicidal self-injury (Self-Injury Questionnaire). Results: The sex ratio of trans females aged 50 years and older compared to trans males was 23.7:1. Trans males were removed for the analysis due to their small number (n = 3). Participants included 71 trans females over the age of 50, of whom the vast majority were white, employed or retired, and divorced and had children. Trans females on CHT who came out as trans and transitioned at an earlier age were significantly less anxious, reported higher levels of self-esteem, and presented with fewer socialization problems. When controlling for socialization problems, differences in levels of anxiety but not self-esteem remained. Conclusion: The use of cross-sex hormones prior to seeking treatment is widespread among older trans females and appears to be associated with psychological benefits. Existing barriers to access CHT for older trans people may need to be re-examined.

- **Boza and Nicholson, 2014**





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**Boza, C., & Nicholson Perry, K. (2014). Gender-related victimization, perceived social support, and predictors of depression among transgender Australians. *International Journal Of Transgenderism, 15*(1), 35-52.**

This study examined mental health outcomes, gender-related victimization, perceived social support, and predictors of depression among 243 transgender Australians (n= 83 assigned female at birth, n= 160 assigned male at birth). Overall, 69% reported at least 1 instance of victimization, 59% endorsed depressive symptoms, and 44% reported a previous suicide attempt. Social support emerged as the most significant predictor of depressive symptoms (p>.05), whereby persons endorsing higher levels of overall perceived social support tended to endorse lower levels of depressive symptoms. Second to social support, persons who endorsed having had some form of gender affirmative surgery were significantly more likely to present with lower symptoms of depression. Contrary to expectations, victimization did not reach significance as an independent risk factor of depression (p=.053). The pervasiveness of victimization, depression, and attempted suicide represents a major health concern and highlights the need to facilitate culturally sensitive health care provision.

- o **Budge et al., 2013**



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**Budge, S. L., Katz-Wise, S. L., Tebbe, E. N., Howard, K. A. S., Schneider, C. L., et al. (2013). Transgender emotional and coping processes: Facilitative and avoidant coping throughout gender transitioning. *The Counseling Psychologist, 41*(4), 601-647.**

Eighteen transgender-identified individuals participated in semi-structured interviews regarding emotional and coping processes throughout their gender transition. The authors used grounded theory to conceptualize and analyze the data. There were three distinct phases through which the participants described emotional and coping experiences: (a) pretransition, (b) during the transition, and (c) posttransition. Five separate themes emerged, including descriptions of coping mechanisms, emotional hardship, lack of support, positive social support, and affirmative emotional experiences. The authors developed a model to describe the role of coping mechanisms and support experienced throughout the transition process. As participants continued through their transitions, emotional hardships lessened and they used facilitative coping mechanisms that in turn led to affirmative emotional experiences. The results of this study are indicative of the importance of guiding transgender individuals through facilitative coping experiences and providing social support throughout the transition process. Implications for counselors and for future research are discussed.

- o **Cardoso da Silva et al., 2016**



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**Cardoso da Silva, D., Schwarz, K., Fontanari, A.M.V., Costa, A.B., Massuda, R., et al. (2016). WHOQOL-100 Before and after sex reassignment surgery in Brazilian male-to-female transsexual individuals. *Journal of Sexual Medicine, 13*(6), 988-993.**

Introduction: The 100-item World Health Organization Quality of Life Assessment (WHOQOL-100) evaluates quality of life as a subjective and multidimensional construct. Currently, particularly in Brazil, there are controversies concerning quality of life after sex reassignment surgery (SRS). Aim: To assess the impact of surgical interventions on quality of life of 47 Brazilian male-to-female transsexual individuals using the WHOQOL-100. Methods: This was a prospective cohort study using the WHOQOL-100 and sociodemographic questions for individuals diagnosed with gender identity disorder according to criteria of the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition. The protocol was used when a transsexual person entered the ambulatory clinic and at least 12 months after SRS. Main Outcome Measures: Initially, improvement or worsening of quality of life was assessed using 6 domains and 24 facets. Subsequently, quality of life was assessed for individuals who underwent new surgical interventions and those who did not undergo



these procedures 1 year after SRS. Results: The participants showed significant improvement after SRS in domains II (psychological) and IV (social relationships) of the WHOQOL-100. In contrast, domains I (physical health) and III (level of independence) were significantly worse after SRS. Individuals who underwent additional surgery had a decrease in quality of life reflected in domains II and IV. During statistical analysis, all results were controlled for variations in demographic characteristics, without significant results. Conclusion: The WHOQOL-100 is an important instrument to evaluate the quality of life of male-to-female transsexuals during different stages of treatment. SRS promotes the improvement of psychological aspects and social relationships. However, even 1 year after SRS, male-to-female transsexuals continue to report problems in physical health and difficulty in recovering their independence.

(Due to a citation error, this study was initially listed twice.)

- **Castellano et al., 2015**

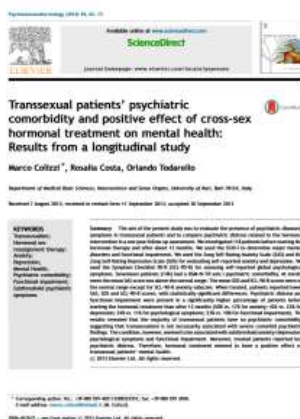


[Visit Source Website](#)

**Castellano, E., Crespi, C., Dell’Aquila, R., Rosato, C., Catalano, V., et al. (2015). Quality of life and hormones after sex reassignment surgery. *Journal of Endocrinological Investigation*, 38(12), 1373-1381.**

Background: Transpeople often look for sex reassignment surgery (SRS) to improve their quality of life (QoL). The hormonal therapy has many positive effects before and after SRS. There are no studies about correlation between hormonal status and QoL after SRS. Aim: To gather information on QoL, quality of sexual life and body image in transpeople at least 2 years after SRS, to compare these results with a control group and to evaluate the relations between the chosen items and hormonal status. Subjects and methods: Data from 60 transsexuals and from 60 healthy matched controls were collected. Testosterone, estradiol, LH and World Health Organization Quality of Life (WHOQOL-100) self-reported questionnaire were evaluated. Student’s t test was applied to compare transsexuals and controls. Multiple regression model was applied to evaluate WHOQOL’s chosen items and LH. Results: The QoL and the quality of body image scores in transpeople were not statistically different from the matched control groups’ ones. In the sexual life subscale, transwomen’s scores were similar to biological women’s ones, whereas transmen’s scores were statistically lower than biological men’s ones ( $P = 0.003$ ). The quality of sexual life scored statistically lower in transmen than in transwomen ( $P = 0.048$ ). A significant inverse relationship between LH and body image and between LH and quality of sexual life was found. Conclusions: This study highlights general satisfaction after SRS. In particular, transpeople’s QoL turns out to be similar to Italian matched controls. LH resulted inversely correlated to body image and sexual life scores.

- **Colizzi, Costa, & Todarello, 2014**



[Visit Source Website](#)

**Colizzi, M., Costa, R. & Todarello, O. (2014). Transsexual patients’ psychiatric comorbidity and positive effect of cross-sex hormonal treatment on mental health: Results from a longitudinal study. *Psychoneuroendocrinology*, 39, 65-73.**

The aim of the present study was to evaluate the presence of psychiatric diseases/symptoms in transsexual patients and to compare psychiatric distress related to the hormonal intervention in a one year follow-up assessment. We investigated 118 patients before starting the hormonal therapy and after about 12 months. We used the SCID-I to determine major mental disorders and functional impairment. We used the Zung Self-Rating Anxiety Scale (SAS) and the Zung Self-Rating Depression Scale (SDS) for evaluating self-reported anxiety and depression. We used the Symptom Checklist 90-R (SCL-90-R) for assessing self-reported global psychological symptoms. Seventeen patients (14%) had a DSM-IV-TR axis I psychiatric comorbidity. At enrollment the mean SAS score was above the normal range. The mean SDS and SCL-90-R scores were on the normal range except for SCL-90-R anxiety subscale. When treated, patients reported lower SAS, SDS and SCL-90-R scores, with statistically significant differences. Psychiatric distress and functional impairment were present in a significantly higher percentage of patients before starting the hormonal treatment than after 12 months (50% vs. 17% for anxiety; 42% vs. 23% for depression; 24% vs. 11% for psychological symptoms; 23% vs. 10% for functional impairment). The results revealed that the majority of transsexual patients have no psychiatric comorbidity, suggesting that transsexualism is not necessarily associated with severe comorbid psychiatric findings. The condition, however, seemed to be associated with subthreshold anxiety/depression, psychological symptoms and functional impairment. Moreover, treated patients reported less psychiatric distress. Therefore, hormonal treatment seemed to have a positive effect on transsexual patients’ mental health.

- **Colizzi et al., 2013**

**Hormonal Treatment Reduces Psychobiological Distress In Gender Identity Disorder, Independently of the Attachment Style**

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DOI: 10.1097/JSM.0b013e3182900000

**ABSTRACT**

**Introduction:** Gender identity disorder may be a stressful situation. Hormonal treatment seemed to improve the general health as it reduces psychological and social distress. The attachment style seemed to regulate distress in insecure individuals as they are more exposed to hypothalamic–pituitary–adrenal system dysregulation and subjective stress. **Aim:** The objectives of the study were to evaluate the presence of psychobiological distress and insecure attachment in transsexuals and to study their stress levels with reference to the hormonal treatment and the attachment pattern. **Methods:** We investigated 70 transsexual patients. We measured the cortisol levels and the perceived stress before starting the hormonal therapy and after about 12 months. We studied the representation of attachment in transsexuals. **Main Outcome Measures:** We used blood samples for assessing cortisol awakening response (CAR); we used the Perceived Stress Scale for evaluating self-reported perceived stress and the Adult Attachment Interview to determine attachment styles. **Results:** At enrollment, transsexuals reported elevated CAR; their values were out of normal. They expressed higher perceived stress and more attachment insecurity, with respect to normative sample data. When treated with hormone therapy, transsexuals reported significantly lower CAR ( $P < 0.001$ ), falling within the normal range for cortisol levels. Treated transsexuals showed also lower perceived stress ( $P < 0.001$ ), with levels similar to normative samples. The insecure attachment styles were associated with higher CAR and perceived stress in untreated transsexuals ( $P < 0.01$ ). Treated transsexuals did not expressed significant differences in CAR and perceived stress by attachment. **Conclusion:** Our results suggested that untreated patients suffer from a higher degree of stress and that attachment insecurity negatively impacts the stress management. Initiating the hormonal treatment seemed to have a positive effect in reducing stress levels, whatever the attachment style may be.

**Keywords:** transsexuals, hormonal treatment, cortisol awakening response (CAR), attachment style, perceived stress, hypothalamic–pituitary–adrenal system, psychological distress, social distress, gender identity disorder, attachment style  
**Introduction:** Gender identity disorder may be a stressful situation. Hormonal treatment seemed to improve the general health as it reduces psychological and social distress. The attachment style seemed to regulate distress in insecure individuals as they are more exposed to hypothalamic–pituitary–adrenal system dysregulation and subjective stress. **Aim:** The objectives of the study were to evaluate the presence of psychobiological distress and insecure attachment in transsexuals and to study their stress levels with reference to the hormonal treatment and the attachment pattern. **Methods:** We investigated 70 transsexual patients. We measured the cortisol levels and the perceived stress before starting the hormonal therapy and after about 12 months. We studied the representation of attachment in transsexuals. **Main Outcome Measures:** We used blood samples for assessing cortisol awakening response (CAR); we used the Perceived Stress Scale for evaluating self-reported perceived stress and the Adult Attachment Interview to determine attachment styles. **Results:** At enrollment, transsexuals reported elevated CAR; their values were out of normal. They expressed higher perceived stress and more attachment insecurity, with respect to normative sample data. When treated with hormone therapy, transsexuals reported significantly lower CAR ( $P < 0.001$ ), falling within the normal range for cortisol levels. Treated transsexuals showed also lower perceived stress ( $P < 0.001$ ), with levels similar to normative samples. The insecure attachment styles were associated with higher CAR and perceived stress in untreated transsexuals ( $P < 0.01$ ). Treated transsexuals did not expressed significant differences in CAR and perceived stress by attachment. **Conclusion:** Our results suggested that untreated patients suffer from a higher degree of stress and that attachment insecurity negatively impacts the stress management. Initiating the hormonal treatment seemed to have a positive effect in reducing stress levels, whatever the attachment style may be.

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[Visit Source Website](#)

**Colizzi, M., Costa, R., Pace, V., & Todarello, O. (2013). Hormonal treatment reduces psychobiological distress in gender identity disorder, independently of the attachment style. *The Journal of Sexual Medicine, 10*(12), 3049–3058.**

Introduction: Gender identity disorder may be a stressful situation. Hormonal treatment seemed to improve the general health as it reduces psychological and social distress. The attachment style seemed to regulate distress in insecure individuals as they are more exposed to hypothalamic–pituitary–adrenal system dysregulation and subjective stress. Aim: The objectives of the study were to evaluate the presence of psychobiological distress and insecure attachment in transsexuals and to study their stress levels with reference to the hormonal treatment and the attachment pattern. Methods: We investigated 70 transsexual patients. We measured the cortisol levels and the perceived stress before starting the hormonal therapy and after about 12 months. We studied the representation of attachment in transsexuals by a backward investigation in the relations between them and their caregivers. Main Outcome Measures: We used blood samples for assessing cortisol awakening response (CAR); we used the Perceived Stress Scale for evaluating self-reported perceived stress and the Adult Attachment Interview to determine attachment styles. Results: At enrollment, transsexuals reported elevated CAR; their values were out of normal. They expressed higher perceived stress and more attachment insecurity, with respect to normative sample data. When treated with hormone therapy, transsexuals reported significantly lower CAR ( $P < 0.001$ ), falling within the normal range for cortisol levels. Treated transsexuals showed also lower perceived stress ( $P < 0.001$ ), with levels similar to normative samples. The insecure attachment styles were associated with higher CAR and perceived stress in untreated transsexuals ( $P < 0.01$ ). Treated transsexuals did not expressed significant differences in CAR and perceived stress by attachment. Conclusion: Our results suggested that untreated patients suffer from a higher degree of stress and that attachment insecurity negatively impacts the stress management. Initiating the hormonal treatment seemed to have a positive effect in reducing stress levels, whatever the attachment style may be.

o Colton-Meier et al., 2011



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**Colton-Meier, S. L., Fitzgerald, K. M., Pardo, S. T., & Babcock, J. (2011). The effects of hormonal gender affirmation treatment on mental health in female-to-male transsexuals. *Journal of Gay & Lesbian Mental Health, 15*(3), 281-299.**

Hormonal interventions are an often-sought option for transgender individuals seeking to medically transition to an authentic gender. Current literature stresses that the effects and associated risks of hormone regimens should be monitored and well understood by health care providers (Feldman & Bockting, 2003). However, the positive psychological effects following hormone replacement therapy as a gender affirming treatment have not been adequately researched. This study examined the relationship of hormone replacement therapy, specifically testosterone, with various mental health outcomes in an Internet sample of more than 400 self-identified female-to-male transsexuals. Results of the study indicate that female-to-male transsexuals who receive testosterone have lower levels of depression, anxiety, and stress, and higher levels of social support and health related quality of life. Testosterone use was not related to problems with drugs, alcohol, or suicidality. Overall findings provide clear evidence that HRT is associated with improved mental health outcomes in female-to-male transsexuals.

o Costantino et al., 2013



[Visit Source Website](#)

**Costantino, A., Cerpolini, S., Alvisi, S., Morselli, P. G., Venturoli, S., & Merigiola, M. C. (2013). A prospective study on sexual function and mood in female-to-male transsexuals during testosterone administration and after sex reassignment surgery. *Journal of Sex & Marital Therapy, 39*(4), 321-335.**

Testosterone administration in female-to-male transsexual subjects aims to develop and maintain the characteristics of the desired sex. Very little data exists on its effects on sexuality of female-to-male transsexuals. The aim of this study was to evaluate sexual function and mood of female-to-male transsexuals from their first visit, throughout testosterone administration and after sex reassignment surgery. Participants were 50 female-to-male transsexual subjects who completed questionnaires assessing sexual parameters and mood. The authors measured reproductive hormones and hematological parameters. The results suggest a positive effect of testosterone treatment on sexual function and mood in female-to-male transsexual subjects.

- **Davis and Meier, 2014**



[Visit Source Website](#)

**Davis, S. A. & Meier, S. C. (2014). Effects of testosterone treatment and chest reconstruction surgery on mental health and sexuality in female-to-male transgender people. *International Journal of Sexual Health, 26(2), 113-128.***

**Objectives:** This study examined the effects of testosterone treatment with or without chest reconstruction surgery (CRS) on mental health in female-to-male transgender people (FTMs). **Methods:** More than 200 FTMs completed a written survey including quantitative scales to measure symptoms of anxiety and depression, feelings of anger, and body dissatisfaction, as well as qualitative questions assessing shifts in sexuality after the initiation of testosterone. Fifty-seven percent of participants were taking testosterone and 40% had undergone CRS. **Results:** Cross-sectional analysis using a between-subjects multivariate analysis of variance showed that participants who were receiving testosterone endorsed fewer symptoms of anxiety and depression as well as less anger than the untreated group. Participants who had CRS in addition to testosterone reported less body dissatisfaction than both the testosterone-only or the untreated groups. Furthermore, participants who were injecting testosterone on a weekly basis showed significantly less anger compared with those injecting every other week. In qualitative reports, more than 50% of participants described increased sexual attraction to nontransgender men after taking testosterone. **Conclusions:** Results indicate that testosterone treatment in FTMs is associated with a positive effect on mental health on measures of depression, anxiety, and anger, while CRS appears to be more important for the alleviation of body dissatisfaction. The findings have particular relevance for counselors and health care providers serving FTM and gender-variant people considering medical gender transition.

- **De Cuypere et al., 2006**



[Visit Source Website](#)

**De Cuypere, G., Elaut, E., Heylens, G., Maele, G. V., Selvaggi, G., et al. (2006). Long-term follow-up: Psychosocial outcome of Belgian transsexuals after sex reassignment surgery. *Sexologies, 15(2), 126-133.***

**Background:** To establish the benefit of sex reassignment surgery (SRS) for persons with a gender identity disorder, follow-up studies comprising large numbers of operated transsexuals are still needed. **Aims:** The authors wanted to assess how the transsexuals who had been treated by the Ghent multidisciplinary gender team since 1985, were functioning psychologically, socially and professionally after a longer period. They also explored some prognostic factors with a view to refining the procedure. **Method:** From 107 Dutch-speaking transsexuals who had undergone SRS between 1986 and 2001, 62 (35 male-to-females and 27 female-to-males) completed various questionnaires and were personally interviewed by researchers, who had not been involved in the subjects' initial assessment or treatment. **Results:** On the GAF (DSM-IV) scale the female-to-male transsexuals scored significantly higher than the male-to-females (85.2 versus 76.2). While no difference in psychological functioning (SCL-90) was observed between the study group and a normal population, subjects with a pre-existing psychopathology were found to have retained more psychological symptoms. The subjects proclaimed an overall positive change in their family and social life. None of them showed any regrets about the SRS. A homosexual orientation, a younger age when applying for SRS, and an attractive physical appearance were positive prognostic factors. **Conclusion:** While sex reassignment treatment is an effective therapy for transsexuals, also in the long term, the postoperative transsexual remains a fragile person in some respects.

- **Dhejne et al., 2014**





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**Dhejne, C., Öberg, K., Arver, S., & Landén, M. (2014). An analysis of all applications for sex reassignment surgery in Sweden, 1960-2010: Prevalence, incidence, and regrets. *Archives of Sexual Behavior, 43*(8), 1535-1545.**

Incidence and prevalence of applications in Sweden for legal and surgical sex reassignment were examined over a 50-year period (1960-2010), including the legal and surgical reversal applications. A total of 767 people (289 natal females and 478 natal males) applied for legal and surgical sex reassignment. Out of these, 89 % (252 female-to-males [FM] and 429 male-to-females [MF]) received a new legal gender and underwent sex reassignment surgery (SRS). A total of 25 individuals (7 natal females and 18 natal males), equaling 3.3 %, were denied a new legal gender and SRS. The remaining withdrew their application, were on a waiting list for surgery, or were granted partial treatment. The incidence of applications was calculated and stratified over four periods between 1972 and 2010. The incidence increased significantly from 0.16 to 0.42/100,000/year (FM) and from 0.23 to 0.73/100,000/year (MF). The most pronounced increase occurred after 2000. The proportion of FM individuals 30 years or older at the time of application remained stable around 30 %. In contrast, the proportion of MF individuals 30 years or older increased from 37 % in the first decade to 60 % in the latter three decades. The point prevalence at December 2010 for individuals who applied for a new legal gender was for FM 1:13,120 and for MF 1:7,750. The FM:MF sex ratio fluctuated but was 1:1.66 for the whole study period. There were 15 (5 MF and 10 MF) regret applications corresponding to a 2.2 % regret rate for both sexes. There was a significant decline of regrets over the time period.

- Eldh, Berg, & Gustafsson, 1997

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**Eldh, J., Berg, A., Gustafsson, M. (1997). Long-term follow up after sex reassignment surgery. *Scandinavian Journal of Plastic and Reconstructive Surgery and Hand Surgery, 27*(1), 39-45.**

A long-term follow up of 136 patients operated on for sex reassignment was done to evaluate the surgical outcome. Social and psychological adjustments were also investigated by a questionnaire in 90 of these 136 patients. Optimal results of the operation are essential for a successful outcome. Personal and social instability before operation, unsuitable body build, and age over 30 years at operation correlated with unsatisfactory results. Adequate family and social support is important for postoperative functioning. Sex reassignment had no influence on the person's ability to work.

- Fisher et al., 2014

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**Fisher, A. D., Castellini, G., Bandini, E., Casale, H., Fanni, E., et al. (2014). Cross-sex hormonal treatment and body uneasiness in individuals with gender dysphoria. *The Journal of Sexual Medicine, 11*(3), 709-719.**

Introduction: Cross-sex hormonal treatment (CHT) used for gender dysphoria (GD) could by itself affect well-being without the use of genital surgery; however, to date, there is a paucity of studies investigating the effects of CHT alone. Aims: This study aimed to assess differences in body uneasiness and psychiatric symptoms between GD clients taking CHT and those not taking hormones (no CHT). A second aim was to assess whether length of CHT treatment and daily dose provided an explanation for levels of body uneasiness and psychiatric symptoms. Methods: A consecutive series of 125 subjects meeting the criteria for GD who not had genital reassignment surgery were considered. Main Outcome Measures: Subjects were asked to complete the Body Uneasiness Test (BUT) to explore different areas of body-related psychopathology and the Symptom Checklist-90 Revised (SCL-90-R) to measure psychological state. In addition, data on daily hormone dose and length of hormonal treatment (androgens, estrogens, and/or antiandrogens) were collected through an analysis of medical records. Results: Among the male-to-female (MtF) individuals, those using CHT reported less body uneasiness compared with individuals in the no-CHT group. No significant differences were observed between CHT and no-CHT groups in the female-to-male (FtM) sample.

Also, no significant differences in SCL score were observed with regard to gender (MtF vs. FtM), hormone treatment (CHT vs. no-CHT), or the interaction of these two variables. Moreover, a two-step hierarchical regression showed that cumulative dose of estradiol (daily dose of estradiol times days of treatment) and cumulative dose of androgen blockers (daily dose of androgen blockers times days of treatment) predicted BUT score even after controlling for age, gender role, cosmetic surgery, and BMI. Conclusions: The differences observed between MtF and FtM individuals suggest that body-related uneasiness associated with GD may be effectively diminished with the administration of CHT even without the use of genital surgery for MtF clients. A discussion is provided on the importance of controlling both length and daily dose of treatment for the most effective impact on body uneasiness.

- Glynn et al., 2016

[Visit Source Website](#)

**Glynn, T. R., Gamarel, K. E., Kahler, C. W., Iwamoto, M., Operario, D., & Nemoto, T. (2016). The role of gender affirmation in psychological well-being among transgender women. *Psychology Of Sexual Orientation And Gender Diversity, 3(3)*, 336-344.**

High prevalence of psychological distress, including greater depression, lower self-esteem, and suicidal ideation, has been documented across numerous samples of transgender women and has been attributed to high rates of discrimination and violence. According to the gender affirmation framework (Sevelius, 2013), access to sources of gender-affirmative support can offset such negative psychological effects of social oppression. However, critical questions remain unanswered in regards to how and which aspects of gender affirmation are related to psychological well-being. The aims of this study were to investigate the associations among 3 discrete areas of gender affirmation (psychological, medical, and social) and participants' reports of psychological well-being. A community sample of 573 transgender women with a history of sex work completed a 1-time self-report survey that assessed demographic characteristics, gender affirmation, and mental health outcomes. In multivariate models, we found that social, psychological, and medical gender affirmation were significant predictors of lower depression and higher self-esteem whereas no domains of affirmation were significantly associated with suicidal ideation. Findings support the need for accessible and affordable transitioning resources for transgender women to promote better quality of life among an already vulnerable population. However, transgender individuals should not be portrayed simplistically as objects of vulnerability, and research identifying mechanisms to promote wellness and thriving is necessary for future intervention development. As the gender affirmation framework posits, the personal experience of feeling affirmed as a transgender person results from individuals' subjective perceptions of need along multiple dimensions of gender affirmation. Thus, personalized assessment of gender affirmation may be a useful component of counseling and service provision for transgender women.

- Gomez-Gil et al., 2012

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**Gomez-Gil, E., Zubiaurre-Elorz, L., Esteva, I., Guillamon, A., Godas, T., Cruz Almaraz, M., Halperin, I., Salamero, M. (2012). Hormone-treated transsexuals report less social distress, anxiety and depression. *Psychoneuroendocrinology, 37(5)*, 662-670.**

Introduction: The aim of the present study was to evaluate the presence of symptoms of current social distress, anxiety and depression in transsexuals. Methods: We investigated a group of 187 transsexual patients attending a gender identity unit; 120 had undergone hormonal sex-reassignment (SR) treatment and 67 had not. We used the Social Anxiety and Distress Scale (SADS) for assessing social anxiety and the Hospital Anxiety and Depression Scale (HADS) for evaluating current depression and anxiety. Results: The mean SADS and HADS scores were in the normal range except for the HAD-Anxiety subscale (HAD-A) on the non-treated transsexual group. SADS, HAD-A, and HAD-Depression (HAD-D) mean scores were significantly higher among patients who had not begun cross-sex hormonal treatment compared with patients in hormonal treatment ( $F = 4.362, p = .038$ ;  $F = 14.589, p = .001$ ;  $F = 9.523, p = .002$  respectively). Similarly, current symptoms of anxiety and depression were present in a significantly higher percentage of untreated patients than in treated patients (61% vs. 33% and 31% vs. 8% respectively). Conclusions: The results suggest that most transsexual patients attending a gender identity unit reported subclinical levels of social distress, anxiety, and depression. Moreover, patients under cross-sex hormonal treatment displayed a lower prevalence of these symptoms than patients who had not initiated hormonal therapy. Although the findings do not conclusively demonstrate a direct positive effect of hormone treatment in transsexuals, initiating this treatment may be associated with better mental health of these patients.

- Gomez-Gil et al., 2014

[Visit Source Website](#)

**Gómez-Gil, E., Zubiaurre-Elorza, L., de Antonio, E. D., Guillamon, A., & Salamero, M. (2014). Determinants of quality of life in Spanish transsexuals attending a gender unit before genital sex reassignment surgery. *Quality of Life Research*, 23(2), 669-676.**

Purpose: To evaluate the self-reported perceived quality of life (QoL) in transsexuals attending a Spanish gender identity unit before genital sex reassignment surgery, and to identify possible determinants that likely contribute to their QoL. Methods: A sample of 119 male-to-female (MF) and 74 female-to-male (FM) transsexuals were included in the study. The WHOQOL-BREF scale was used to evaluate self-reported QoL. Possible determinants included age, sex, education, employment, partnership status, undergoing cross-sex hormonal therapy, receiving at least one non-genital sex reassignment surgery, and family support (assessed with the family APGAR questionnaire). Results: Mean scores of all QoL domains ranged from 55.44 to 63.51. Linear regression analyses revealed that undergoing cross-sex hormonal treatment, having family support, and having an occupation were associated with a better QoL for all transsexuals. FM transsexuals have higher social domain QoL scores than MF transsexuals. The model accounts for 20.6 % of the variance in the physical, 32.5 % in the psychological, 21.9 % in the social, and 20.1 % in the environment domains, and 22.9 % in the global QoL factor. Conclusions: Cross-sex hormonal treatment, family support, and working or studying are linked to a better self-reported QoL in transsexuals. Healthcare providers should consider these factors when planning interventions to promote the health-related QoL of transsexuals.

◦ **Gorin-Lazard et al., 2012**

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**Gorin-Lazard, A., Baumstarck, K., Boyer, L., Maquigneau, A., Gebleux, S., Penochet, J., Pringuey, D., Albarel, F., Morange, I., Loundou, A., Berbis, J., Auquier, P., Lançon, C. and Bonierbale, M. (2012). Is hormonal therapy associated with better quality of life in transsexuals? A cross-sectional study. *The Journal of Sexual Medicine*, 9(2), 531–541.**

Introduction: Although the impact of sex reassignment surgery on the self-reported outcomes of transsexuals has been largely described, the data available regarding the impact of hormone therapy on the daily lives of these individuals are scarce. Aims: The objectives of this study were to assess the relationship between hormonal therapy and the self-reported quality of life (QoL) in transsexuals while taking into account the key confounding factors and to compare the QoL levels between transsexuals who have, vs. those who have not, undergone cross-sex hormone therapy as well as between transsexuals and the general population (French age- and sex-matched controls). Methods: This study incorporated a cross-sectional design that was conducted in three psychiatric departments of public university teaching hospitals in France. The inclusion criteria were as follows: 18 years or older, diagnosis of gender identity disorder (302.85) according to the Diagnostic and Statistical Manual, fourth edition text revision (DSM-IV TR), inclusion in a standardized sex reassignment procedure following the agreement of a multidisciplinary team, and pre-sex reassignment surgery. Main Outcome Measure. QoL was assessed using the Short Form 36 (SF-36). Results: The mean age of the total sample was 34.7 years, and the sex ratio was 1:1. Forty-four (72.1%) of the participants received hormonal therapy. Hormonal therapy and depression were independent predictive factors of the SF-36 mental composite score. Hormonal therapy was significantly associated with a higher QoL, while depression was significantly associated with a lower QoL. Transsexuals' QoL, independently of hormonal status, did not differ from the French age- and sex-matched controls except for two subscales of the SF-36 questionnaire: role physical (lower scores in transsexuals) and general health (lower scores in controls). Conclusion: The present study suggests a positive effect of hormone therapy on transsexuals' QoL after accounting for confounding factors. These results will be useful for healthcare providers of transgender persons but should be confirmed with larger samples using a prospective study design.

◦ **Gorin-Lazard et al., 2013**

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**Gorin-Lazard, A., Baumstarck, K., Boyer, L., Maquigneau, A., Penochet, J. C., et al. (2013). Hormonal therapy is associated with better self-esteem, mood, and quality of life in transsexuals. *Journal of Nervous and Mental Disease*, 201(11), 996–1000.**

Few studies have assessed the role of cross-sex hormones on psychological outcomes during the period of hormonal therapy preceding sex reassignment surgery in transsexuals. The objective of this study was to assess the relationship between hormonal therapy, self-esteem, depression, quality of life (QoL), and global functioning. This study incorporated a cross-sectional design. The inclusion criteria were diagnosis of gender identity disorder (Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition, Text Revision) and inclusion in a standardized sex reassignment procedure. The outcome measures were self-esteem (Social Self-Esteem Inventory), mood (Beck Depression Inventory), QoL (Subjective Quality of Life Analysis), and global functioning (Global Assessment of Functioning). Sixty-seven consecutive individuals agreed to participate. Seventy-three percent received hormonal therapy. Hormonal therapy was an independent factor in greater self-esteem, less severe depression symptoms, and greater “psychological-like” dimensions of QoL. These findings should provide pertinent information for health care providers who consider this period as a crucial part of the global sex reassignment procedure.

- Hess et al., 2014

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**Hess, J., Neto, R. R., Panic, L., Rübben, H., & Senf, W. (2014). Satisfaction with male-to-female gender reassignment surgery: Results of a retrospective analysis. *Deutsches Ärzteblatt International*, 111(47), 795–801.**

Background: The frequency of gender identity disorder is hard to determine; the number of gender reassignment operations and of court proceedings in accordance with the German Law on Transsexuality almost certainly do not fully reflect the underlying reality. There have been only a few studies on patient satisfaction with male-to-female gender reassignment surgery. Methods: 254 consecutive patients who had undergone male-to-female gender reassignment surgery at Essen University Hospital's Department of Urology retrospectively filled out a questionnaire about their subjective postoperative satisfaction. Results: 119 (46.9%) of the patients filled out and returned the questionnaires, at a mean of 5.05 years after surgery (standard deviation 1.61 years, range 1–7 years). 90.2% said their expectations for life as a woman were fulfilled postoperatively. 85.4% saw themselves as women. 61.2% were satisfied, and 26.2% very satisfied, with their outward appearance as a woman; 37.6% were satisfied, and 34.4% very satisfied, with the functional outcome. 65.7% said they were satisfied with their life as it is now. Conclusion: The very high rates of subjective satisfaction and the surgical outcomes indicate that gender reassignment surgery is beneficial. These findings must be interpreted with caution, however, because fewer than half of the questionnaires were returned.

- Heylens et al., 2014

[Visit Source Website](#)

**Heylens, G., Verroken, C., De Cock, S., T'Sjoen, G., & De Cuypere, G. (2014). Effects of different steps in gender reassignment therapy on psychopathology: a prospective study of persons with a gender identity disorder. *The Journal of Sexual Medicine*, 11(1), 119–126.**

Introduction: At the start of gender reassignment therapy, persons with a gender identity disorder (GID) may deal with various forms of psychopathology. Until now, a limited number of publications focus on the effect of the different phases of treatment on this comorbidity and other psychosocial factors. Aims: The aim of this study was to investigate how gender reassignment therapy affects psychopathology and other psychosocial factors. Methods: This is a prospective study that assessed 57 individuals with GID by using the Symptom Checklist-90 (SCL-90) at three different points of time: at presentation, after the start of hormonal treatment, and after sex reassignment surgery (SRS). Questionnaires on psychosocial variables were used to evaluate the evolution between the presentation and the postoperative period. The data were statistically analyzed by using SPSS 19.0, with significance levels set at  $P < 0.05$ . Main Outcome Measures: The psychopathological parameters include overall psychoneurotic distress, anxiety, agoraphobia, depression, somatization, paranoid ideation/psychoticism, interpersonal sensitivity, hostility, and sleeping problems. The psychosocial parameters consist of relationship, living situation, employment, sexual contacts, social contacts, substance abuse, and suicide attempt. Results: A difference in SCL-90 overall psychoneurotic distress was observed at the different points of assessments ( $P = 0.003$ ), with the most prominent decrease occurring after the initiation of hormone therapy ( $P < 0.001$ ). Significant decreases were found in the subscales such as anxiety, depression, interpersonal sensitivity, and hostility. Furthermore, the SCL-90 scores resembled those of a general population after hormone therapy was initiated. Analysis of the psychosocial variables showed no significant differences between pre- and postoperative assessments. Conclusions: A marked reduction in psychopathology occurs during the process of sex reassignment therapy, especially after the initiation of hormone therapy.

- Imbimbo et al., 2009

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**Imbimbo, C., Verze, P., Palmieri, A., Longo, N., Fusco, F., Arcaniolo, D., & Mirone, V. (2009). A report from a single institute's 14-year experience in treatment of male-to-female transsexuals. *The Journal of Sexual Medicine*, 6(10), 2736–2745.**

Introduction: Gender identity disorder or transsexualism is a complex clinical condition, and prevailing social context strongly impacts the form of its manifestations. Sex reassignment surgery (SRS) is the crucial step of a long and complex therapeutic process starting with preliminary psychiatric evaluation and culminating in definitive gender identity conversion. Aim: The aim of our study is to arrive at a clinical and psychosocial profile of male-to-female transsexuals in Italy through analysis of their personal and clinical experience and evaluation of their postsurgical satisfaction levels SRS. Methods: From January 1992 to September 2006, 163 male patients who had undergone gender-transforming surgery at our institution were requested to complete a patient satisfaction questionnaire. Main Outcome Measures: The questionnaire consisted of 38 questions covering nine main topics: general data, employment status, family status, personal relationships, social and cultural aspects, presurgical preparation, surgical procedure, and postsurgical sex life and overall satisfaction. Results: Average age was 31 years old. Seventy-two percent had a high educational level, and 63% were steadily employed. Half of the patients had contemplated suicide at some time in their lives before surgery and 4% had actually attempted suicide. Family and colleague emotional support levels were satisfactory. All patients had been adequately informed of surgical procedure beforehand. Eighty-nine percent engaged in postsurgical sexual activities. Seventy-five percent had a more satisfactory sex life after SRS, with main complications being pain during intercourse and lack of lubrication. Seventy-eight percent were satisfied with their neovagina's esthetic appearance, whereas only 56% were satisfied with depth. Almost all of the patients were satisfied with their new sexual status and expressed no regrets. Conclusions: Our patients' high level of satisfaction was due to a combination of a well-conducted preoperative preparation program, competent surgical skills, and consistent postoperative follow-up.

◦ **Johansson et al., 2010**

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**Johansson, A., Sundbom, E., Höjerback, T., & Bodlund, O. (2010). A five-year follow-up study of Swedish adults with gender identity disorder. *Archives of Sexual Behavior*, 39(6), 1429-1437.**

This follow-up study evaluated the outcome of sex reassignment as viewed by both clinicians and patients, with an additional focus on the outcome based on sex and subgroups. Of a total of 60 patients approved for sex reassignment, 42 (25 male-to-female [MF] and 17 female-to-male [FM]) transsexuals completed a follow-up assessment after 5 or more years in the process or 2 or more years after completed sex reassignment surgery. Twenty-six (62%) patients had an early onset and 16 (38%) patients had a late onset; 29 (69%) patients had a homosexual sexual orientation and 13 (31%) patients had a non-homosexual sexual orientation (relative to biological sex). At index and follow-up, a semi-structured interview was conducted. At follow-up, 32 patients had completed sex reassignment surgery, five were still in process, and five—following their own decision—had abstained from genital surgery. No one regretted their reassignment. The clinicians rated the global outcome as favorable in 62% of the cases, compared to 95% according to the patients themselves, with no differences between the subgroups. Based on the follow-up interview, more than 90% were stable or improved as regards work situation, partner relations, and sex life, but 5–15% were dissatisfied with the hormonal treatment, results of surgery, total sex reassignment procedure, or their present general health. Most outcome measures were rated positive and substantially equal for MF and FM. Late-onset transsexuals differed from those with early onset in some respects: these were mainly MF (88 vs. 42%), older when applying for sex reassignment (42 vs. 28 years), and non-homosexually oriented (56 vs. 15%). In conclusion, almost all patients were satisfied with the sex reassignment; 86% were assessed by clinicians at follow-up as stable or improved in global functioning.

◦ **Keo-Meier et al., 2015**

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**Keo-Meier, C. L., Herman, L. I., Reisner, S. L., Pardo, S. T., Sharp, C., & Babcock, J. C. (2015). Testosterone treatment and MMPI-2 improvement in transgender men: A prospective controlled study. *Journal of Consulting and Clinical Psychology, 83*, 143-156.**

Objective: Most transgender men desire to receive testosterone treatment in order to masculinize their bodies. In this study, we aimed to investigate the short-term effects of testosterone treatment on psychological functioning in transgender men. This is the 1st controlled prospective follow-up study to examine such effects. Method: We examined a sample of transgender men (n = 48) and nontransgender male (n = 53) and female (n = 62) matched controls (mean age = 26.6 years; 74% White). We asked participants to complete the Minnesota Multiphasic Personality Inventory (2nd ed., or MMPI-2; Butcher, Graham, Tellegen, Dahlstrom, & Kaemmer, 2001) to assess psychological functioning at baseline and at the acute posttreatment follow-up (3 months after testosterone initiation). Regression models tested (a) Gender × Time interaction effects comparing divergent mean response profiles across measurements by gender identity; (b) changes in psychological functioning scores for acute postintervention measurements, adjusting for baseline measures, comparing transgender men with their matched nontransgender male and female controls and adjusting for baseline scores; and (c) changes in meeting clinical psychopathological thresholds. Results: Statistically significant changes in MMPI-2 scale scores were found at 3-month follow-up after initiating testosterone treatment relative to baseline for transgender men compared with female controls (female template): reductions in Hypochondria (p < .05), Depression (p < .05), Hysteria (p < .05), and Paranoia (p < .01); and increases in Masculinity-Femininity scores (p < .01). Gender × Time interaction effects were found for Hysteria (p < .05) and Paranoia (p < .01) relative to female controls (female template) and for Hypochondria (p < .05), Depression (p < .01), Hysteria (p < .01), Psychopathic Deviate (p < .05), Paranoia (p < .01), Psychasthenia (p < .01), and Schizophrenia (p < .01) compared with male controls (male template). In addition, the proportion of transgender men presenting with co-occurring psychopathology significantly decreased from baseline compared with 3-month follow-up relative to controls (p < .05). Conclusions: Findings suggest that testosterone treatment resulted in increased levels of psychological functioning on multiple domains in transgender men relative to nontransgender controls. These findings differed in comparisons of transgender men with female controls using the female template and with male controls using the male template. No iatrogenic effects of testosterone were found. These findings suggest a direct positive effect of 3 months of testosterone treatment on psychological functioning in transgender men.

◦ **Kraemer et al., 2008**

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**Kraemer, B., Delsignore, A., Schnyder, U., & Hepp, U. (2008). Body image and transsexualism. *Psychopathology, 41*(2), 96-100.**

Background: To achieve a detailed view of the body image of transsexual patients, an assessment of perception, attitudes and experiences about one's own body is necessary. To date, research on the body image of transsexual patients has mostly covered body dissatisfaction with respect to body perception. Sampling and Methods: We investigated 23 preoperative (16 male-to-female and 7 female-to-male transsexual patients) and 22 postoperative (14 male-to-female and 8 female-to-male) transsexual patients using a validated psychological measure for body image variables. Results: We found that preoperative transsexual patients were insecure and felt unattractive because of concerns about their body image. However, postoperative transsexual patients scored high on attractiveness and self-confidence. Furthermore, postoperative transsexual patients showed low scores for insecurity and concerns about their body. Conclusions: Our results indicate an improvement of body image concerns for transsexual patients following standards of care for gender identity disorder. Follow-up studies are recommended to confirm the assumed positive outcome of standards of care on body image.

◦ **Landen et al., 1998**

[Visit Source Website](#)

**Landén, M., Wälinder, J., Hambert, G., & Lundström, B. (1998). Factors predictive of regret in sex reassignment. *Acta Psychiatrica Scandinavica, 97*(4), 284-289.**

The objective of this study was to evaluate the features and calculate the frequency of sex-reassigned subjects who had applied for reversal to their biological sex, and to compare these with non-regretful subjects. An inception cohort was retrospectively identified consisting of all subjects with gender identity disorder who were approved for sex reassignment in Sweden during the period 1972-1992. The period of time that elapsed between the application and this evaluation ranged from 4 to 24 years. The total cohort consisted of 218 subjects. The results showed that 3.8% of the patients who were sex reassigned during 1972-1992 regretted the measures taken. The cohort was subdivided according to the presence or absence of regret of sex reassignment, and the two groups were compared. The results of logistic regression analysis indicated that two factors predicted regret of sex reassignment, namely lack of support from the patient's family, and the patient belonging to the non-core group of transsexuals. In conclusion, the results show that the outcome of sex reassignment has improved over the years. However, the identified risk factors indicate the need for substantial efforts to support the families and close friends of candidates for sex reassignment.

◦ **Lawrence, 2003**



[Visit Source Website](#)

**Lawrence, A. A. (2003). Factors associated with satisfaction or regret following male-to-female sex reassignment surgery. *Archives of Sexual Behavior*, 32(4), 299-315.**

This study examined factors associated with satisfaction or regret following sex reassignment surgery (SRS) in 232 male-to-female transsexuals operated on between 1994 and 2000 by one surgeon using a consistent technique. Participants, all of whom were at least 1-year postoperative, completed a written questionnaire concerning their experiences and attitudes. Participants reported overwhelmingly that they were happy with their SRS results and that SRS had greatly improved the quality of their lives. None reported outright regret and only a few expressed even occasional regret. Dissatisfaction was most strongly associated with unsatisfactory physical and functional results of surgery. Most indicators of transsexual typology, such as age at surgery, previous marriage or parenthood, and sexual orientation, were not significantly associated with subjective outcomes. Compliance with minimum eligibility requirements for SRS specified by the Harry Benjamin International Gender Dysphoria Association was not associated with more favorable subjective outcomes. The physical results of SRS may be more important than preoperative factors such as transsexual typology or compliance with established treatment regimens in predicting postoperative satisfaction or regret.

◦ Lawrence, 2006

[Visit Source Website](#)

**Lawrence, A. A. (2006). Patient-reported complications and functional outcomes of male-to-female sex reassignment surgery. *Archives of Sexual Behavior*, 35(6), 717-727.**

This study examined preoperative preparations, complications, and physical and functional outcomes of male-to-female sex reassignment surgery (SRS), based on reports by 232 patients, all of whom underwent penile-inversion vaginoplasty and sensate clitoroplasty, performed by one surgeon using a consistent technique. Nearly all patients discontinued hormone therapy before SRS and most reported that doing so created no difficulties. Preoperative electrolysis to remove genital hair, undergone by most patients, was not associated with less serious vaginal hair problems. No patients reported rectal-vaginal fistula or deep-vein thrombosis and reports of other significant surgical complications were uncommon. One third of patients, however, reported urinary stream problems. No single complication was significantly associated with regretting SRS. Satisfaction with most physical and functional outcomes of SRS was high; participants were least satisfied with vaginal lubrication, vaginal touch sensation, and vaginal erotic sensation. Frequency of achieving orgasm after SRS was not significantly associated with most general measures of satisfaction. Later years of surgery, reflecting greater surgeon experience, were not associated with lower prevalence rates for most complications or with better ratings for most physical and functional outcomes of SRS.

◦ Lobato et al., 2006

[Visit Source Website](#)

**Lobato M. I., Koff, W. J., Manenti, C., da Fonseca Seger, D., Salvador, J., et al. (2006). Follow-up of sex reassignment surgery in transsexuals: a Brazilian cohort. *Archives of Sexual Behavior*, 35(6), 711–715.**

This study examined the impact of sex reassignment surgery on the satisfaction with sexual experience, partnerships, and relationship with family members in a cohort of Brazilian transsexual patients. A group of 19 patients who received sex reassignment between 2000 and 2004 (18 male-to-female, 1 female-to-male) after a two-year evaluation by a multidisciplinary team, and who agreed to participate in the study, completed a written questionnaire. Mean age at entry into the program was  $31.21 \pm 8.57$  years and mean schooling was  $9.2 \pm 1.4$  years. None of the patients reported regret for having undergone the surgery. Sexual experience was considered to have improved by 83.3% of the patients, and became more frequent for 64.7% of the patients. For 83.3% of the patients, sex was considered to be pleasurable with the neovagina/neopenis. In addition, 64.7% reported that initiating and maintaining a relationship had become

easier. The number of patients with a partner increased from 52.6% to 73.7%. Family relationships improved in 26.3% of the cases, whereas 73.7% of the patients did not report a difference. None of the patients reported worse relationships

- **Manieri et al., 2014**

[Visit Source Website](#)

**Manieri, C., Castellano, E., Crespi, C., Di Bisceglie, C., Dell'Aquila, C., et al. (2014). Medical treatment of subjects with gender identity disorder: The experience in an Italian public health center. *International Journal Of Transgenderism*, 15(2), 53-65.**

Hormonal treatment is the main element during the transition program for transpeople. The aim of this paper is to describe the care and treatment of subjects, highlighting both the endocrine-metabolic effects of the hormonal therapy and the quality of life during the first year of cross-sex therapy in an Italian gender team. We studied 83 subjects (56 male-to-female [MtF], 27 female-to-male [FtM]) with hematological and hormonal evaluations every 3 months during the first year of hormonal therapy. MtF persons were treated with 17 $\beta$ estradiol and antiandrogens (cyproterone acetate, spironolactone, dutasteride); FtM persons were treated with transdermal or intramuscular testosterone. The WHO Quality of Life questionnaire was administered at the beginning and 1 year later. Hormonal changes paralleled phenotype modifications with wide variability. Most of both MtF and FtM subjects reported a statistically significant improvement in body image ( $p < 0.05$ ). In particular, MtF subjects reported a statistically significant improvement in the quality of their sexual life and in the general quality of life ( $p < 0.05$ ) 1 year after treatment initiation. Cross-sex therapy seems to be free of major risks in healthy subjects under clinical supervision during the first year. Selected subjects show an optimal adaptation to hormone-induced neuropsychological modifications and satisfaction regarding general and sexual life.

- **Megeri and Khoosal, 2007**

[Visit Source Website](#)

**Megeri, D., & Khoosal, D. (2007). Anxiety and depression in males experiencing gender dysphoria. *Sexual & Relationship Therapy*, 22(1), 77-81.**

Objective: The aim of the study was to compare anxiety and depression scores for the first 40 male to female people experiencing gender dysphoria attending the Leicester Gender Identity Clinic using the same sample as control pre and post gender realignment surgery. Hypothesis: There is an improvement in the scores of anxiety and depression following gender realignment surgery among people with gender dysphoria (male to female – transwomen). Results: There was no significant change in anxiety and depression scores in people with gender dysphoria (male to female) pre- and post-operatively.

- **Nelson, Whallett, & McGregor, 2009**

[Visit Source Website](#)

**Nelson, L., Whallett, E., & McGregor, J. (2009). Transgender patient satisfaction following reduction mammoplasty. *Journal of Plastic, Reconstructive & Aesthetic Surgery*, 62(3), 331-334.**

Aim: To evaluate the outcome of reduction mammoplasty in female-to-male transgender patients. Method: A 5-year retrospective review was conducted on all female-to-male transgender patients who underwent reduction mammoplasty. A postal questionnaire was devised to assess patient satisfaction, surgical outcome and psychological morbidity. Results: Seventeen patients were identified. The senior author performed bilateral reduction mammoplasties and free nipple grafts in 16 patients and one patient had a Benelli technique reduction. Complications included two haematomas, one wound infection, one wound dehiscence and three patients had hypertrophic scars. Secondary surgery was performed in seven patients and included scar revision, nipple

reduction/realignment, dog-ear correction and nipple tattooing. The mean follow-up period after surgery was 10 months (range 2–23 months). Twelve postal questionnaires were completed (response rate 70%). All respondents expressed satisfaction with their result and no regret. Seven patients had nipple sensation and nine patients were satisfied with nipple position. All patients thought their scars were reasonable and felt that surgery had improved their self-confidence and social interactions. Conclusion: Reduction mammoplasty for female-to-male gender reassignment is associated with high patient satisfaction and a positive impact on the lives of these patients.

- Newfield et al., 2006

[Visit Source Website](#)

**Newfield, E., Hart, S., Dibble, S., & Kohler, L. (2006). Female-to-male transgender quality of life. *Quality of Life Research*, 15(9), 1447-1457.**

Objectives: We evaluated health-related quality of life in female-to-male (FTM) transgender individuals, using the Short-Form 36-Question Health Survey version 2 (SF-36v2). Methods: Using email, Internet bulletin boards, and postcards, we recruited individuals to an Internet site (<http://www.transurvey.org>), which contained a demographic survey and the SF36v2. We enrolled 446 FTM transgender and FTM transsexual participants, of which 384 were from the US. Results: Analysis of quality of life health concepts demonstrated statistically significant ( $p < 0.05$ ) diminished quality of life among the FTM transgender participants as compared to the US male and female population, particularly in regard to mental health. FTM transgender participants who received testosterone (67%) reported statistically significant higher quality of life scores ( $p < 0.01$ ) than those who had not received hormone therapy. Conclusions: FTM transgender participants reported significantly reduced mental health-related quality of life and

- Padula, Heru, & Campbell, 2016

[Visit Source Website](#)

**Padula, W. V., Heru, S. & Campbell, J. D. (2016). Societal implications of health insurance coverage for medically necessary services in the U.S. transgender population: A cost-effectiveness analysis. *Journal of General Internal Medicine*, 31(4), 394-401.**

Background: Recently, the Massachusetts Group Insurance Commission (GIC) prioritized research on the implications of a clause expressly prohibiting the denial of health insurance coverage for transgender-related services. These medically necessary services include primary and preventive care as well as transitional therapy. Objective: To analyze the cost-effectiveness of insurance coverage for medically necessary transgender-related services. Design: Markov model with 5- and 10-year time horizons from a U.S. societal perspective, discounted at 3 % (USD 2013). Data on outcomes were abstracted from the 2011 National Transgender Discrimination Survey (NTDS). Patients: U.S. transgender population starting before transitional therapy. Interventions: No health benefits compared to health insurance coverage for medically necessary services. This coverage can lead to hormone replacement therapy, sex reassignment surgery, or both. Main Measures: Cost per quality-adjusted life year (QALY) for successful transition or negative outcomes (e.g. HIV, depression, suicidality, drug abuse, mortality) dependent on insurance coverage or no health benefit at a willingness-to-pay threshold of \$100,000/QALY. Budget impact interpreted as the U.S. per-member-per-month cost. Key Results: Compared to no health benefits for transgender patients (\$23,619; 6.49 QALYs), insurance coverage for medically necessary services came at a greater cost and effectiveness (\$31,816; 7.37 QALYs), with an incremental cost-effectiveness ratio (ICER) of \$9314/QALY. The budget impact of this coverage is approximately \$0.016 per member per month. Although the cost for transitions is \$10,000–22,000 and the cost of provider coverage is \$2175/year, these additional expenses hold good value for reducing the risk of negative endpoints —HIV, depression, suicidality, and drug abuse. Results were robust to uncertainty. The probabilistic sensitivity analysis showed that provider coverage was cost-effective in 85 % of simulations. Conclusions: Health insurance coverage for the U.S. transgender population is affordable and cost-effective, and has a low budget impact on U.S. society. Organizations such as the GIC should consider these results when examining policies regarding coverage exclusions.

- Parola et al., 2010



[Visit Source Website](#)

**Parola, N., Bonierbale, M., Lemaire, A., Aghababian, V., Michel, A., & Lançon, C. (2010). Study of quality of life for transsexuals after hormonal and surgical reassignment. *Sexologies, 19*(1), 24-28.**

Aim: The main objective of this work is to provide a more detailed assessment of the impact of surgical reassignment on the most important aspects of daily life for these patients. Our secondary objective was to establish the influence of various factors likely to have an impact on the quality of life (QoL), such as biological gender and the subject's personality. Methods: A personality study was conducted using Eysenck Personality Inventory (EPI) so as to analyze two aspects of the personality (extraversion and neuroticism). Thirty-eight subjects who had undergone hormonal surgical reassignment were included in the study. Results: The results show that gender reassignment surgery improves the QoL for transsexuals in several different important areas: most are satisfied of their sexual reassignment (28/30), their social (21/30) and sexual QoL (25/30) are improved. However, there are differences between male-to-female (MtF) and female-to-male (FtM) transsexuals in terms of QoL: FtM have a better social, professional, friendly lifestyles than MtF. Finally, the results of this study did not evidence any influence by certain aspects of the personality, such as extraversion and neuroticism, on the QoL for reassigned subjects.

- **Pfäfflin, 1993**

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**Pfäfflin, F. (1993). Regrets after sex reassignment surgery. *Journal of Psychology & Human Sexuality, 5*(4), 69-85.**

Using data drawn from the follow-up literature covering the last 30 years, and the author's clinical data on 295 men and women after SRS, an estimation of the number of patients who regretted the operations is made. Among female-to-male transsexuals after SRS, i.e., in men, no regrets were reported in the author's sample, and in the literature they amount to less than 1%. Among male-to-female transsexuals after SRS, i.e., in women, regrets are reported in 1-1.5%. Poor differential diagnosis, failure to carry out the real-life-test, and poor surgical results seem to be the main reasons behind the regrets reported in the literature. According to three cases observed by the author in addition to personality traits the lack of proper care in treating the patients played a major role.

- **Pimenoff and Pfäfflin, 2011**

[Visit Source Website](#)

**Pimenoff, V., & Pfäfflin, F. (2011). Transsexualism: Treatment outcome of compliant and noncompliant patients. *International Journal Of Transgenderism, 13*(1), 37-44.**

The objective of the study was a follow-up of the treatment outcome of Finnish transsexuals who sought sex reassignment during the period 1970–2002 and a comparison of the results and duration of treatment of compliant and noncompliant patients. Fifteen male-to-female transsexuals and 17 female-to-male transsexuals who had undergone hormone and surgical treatment and legal sex reassignment in Finland completed a questionnaire on psychosocial data and on their experience with the different phases of clinical assessment and treatment. The changes in their vocational functioning and social and psychic adjustment were used as outcome indicators. The results and duration of the treatment of compliant and noncompliant patients were compared. The patients benefited significantly from treatment. The noncompliant patients achieved equally good results as the compliant ones, and did so in a shorter time. A good treatment outcome could be achieved even when the patient had told the assessing psychiatrist a falsified story of his life and sought hormone therapy, genital surgery, or legal sex reassignment on his own initiative without a recommendation from the psychiatrist. Based on these findings, it is recommended that the doctor-patient relationship be reconsidered and founded on frank cooperation.

- **Rakic et al., 1996**

[Visit Source Website](#)

**Rakic, Z., Starcevic, V., Maric, J., & Kelin, K. (1996). The outcome of sex reassignment surgery in Belgrade: 32 patients of both sexes. *Archives of Sexual Behavior*, 25(5), 515-525.**

Several aspects of the quality of life after sex reassignment surgery in 32 transsexuals of both sexes (22 men, 10 women) were examined. The Belgrade Team for Gender Identity Disorders designed a standardized questionnaire for this purpose. The follow-up period after operation was from 6 months to 4 years, and four aspects of the quality of life were examined: attitude towards the patients' own body, relationships with other people, sexual activity, and occupational functioning. In most transsexuals, the quality of life was improved after surgery inasmuch as these four aspects are concerned. Only a few transsexuals were not satisfied with their life after surgery.

- **Rehman et al., 1999**

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**Rehman, J., Lazer, S., Benet, A. E., Schaefer, L. C., & Melman, A. (1999). The reported sex and surgery satisfactions of 28 postoperative male-to-female transsexual patients. *Archives of Sexual Behavior*, 28(1), 71-89.**

From 1980 to July 1997 sixty-one male-to-female gender transformation surgeries were performed at our university center by one author (A.M.). Data were collected from patients who had surgery up to 1994 (n = 47) to obtain a minimum follow-up of 3 years; 28 patients were contacted. A mail questionnaire was supplemented by personal interviews with 11 patients and telephone interviews with remaining patients to obtain and clarify additional information. Physical and functional results of surgery were judged to be good, with few patients requiring additional corrective surgery. General satisfaction was expressed over the quality of cosmetic (normal appearing genitalia) and functional (ability to perceive orgasm) results. Follow-up showed satisfied who believed they had normal appearing genitalia and the ability to experience orgasm. Most patients were able to return to their jobs and live a more satisfactory social and personal life. One significant outcome was the importance of proper preparation of patients for surgery and especially the need for additional postoperative psychotherapy. None of the patients regretted having had surgery. However, some were, to a degree, disappointed because of difficulties experienced post operatively in adjusting satisfactorily as women both in their relationships with men and in living their lives generally as women. Findings of this study make a strong case for making a change in the Harry Benjamin Standards of Care to include a period of postoperative psychotherapy.

- **Rotondi et al., 2011**

[Visit Source Website](#)

**Rotondi, N. K., Bauer, G. R., Scanlon, K., Kaay, M., Travers, R., & Travers, A. (2011). Prevalence of and risk and protective factors for depression in female-to-male transgender Ontarians: Trans PULSE Project. *Canadian Journal Of Community Mental Health*, 30(2), 135-155.**

Although depression is understudied in transgender and transsexual communities, high prevalences have been reported. This paper presents original research from the Trans PULSE Project, an Ontario-wide, community-based initiative that surveyed 433 participants using respondent-driven sampling. The purpose of this analysis was to determine the prevalence of, and risk and protective factors for, depression among female-to-male (FTM) Ontarians (n = 207). We estimate that 66.4% of FTMs have symptomatology consistent with depression. In multivariable analyses, sexual satisfaction was a strong protective factor. Conversely, experiencing transphobia and being at the stage of planning but not having begun a medical transition (hormones and/or surgery) adversely affected mental health in FTMs.

- **Rupp and Pfäfflin, 2015**

[Visit Source Website](#)

**Ruppin, U., & Pfäfflin, F. (2015). Long-term follow-up of adults with gender identity disorder. *Archives of Sexual Behavior*, 44(5), 1321-1329.**

The aim of this study was to re-examine individuals with gender identity disorder after as long a period of time as possible. To meet the inclusion criterion, the legal recognition of participants' gender change via a legal name change had to date back at least 10 years. The sample comprised 71 participants (35 MtF and 36 FtM). The follow-up period was 10–24 years with a mean of 13.8 years (SD = 2.78). Instruments included a combination of qualitative and quantitative methods: Clinical interviews were conducted with the participants, and they completed a follow-up questionnaire as well as several standardized questionnaires they had already filled in when they first made contact with the clinic. Positive and desired changes were determined by all of the instruments: Participants reported high degrees of well-being and a good social integration. Very few participants were unemployed, most of them had a steady relationship, and they were also satisfied with their relationships with family and friends. Their overall evaluation of the treatment process for sex reassignment and its effectiveness in reducing gender dysphoria was positive. Regarding the results of the standardized questionnaires, participants showed significantly fewer psychological problems and interpersonal difficulties as well as a strongly increased life satisfaction at follow-up than at the time of the initial consultation. Despite these positive results, the treatment of transsexualism is far from being perfect.

- **Smith et al., 2005**

[Visit Source Website](#)

**Smith, Y. L. S., Van Goozen, S. H. M., Kuiper, A. J., & Cohen-Kettenis, P. (2005). Sex reassignment: Outcomes and predictors of treatment for adolescent and adult transsexuals. *Psychological Medicine*, 35(1), 89-99.**

Background: We prospectively studied outcomes of sex reassignment, potential differences between subgroups of transsexuals, and predictors of treatment course and outcome. Method: Altogether 325 consecutive adolescent and adult applicants for sex reassignment participated: 222 started hormone treatment, 103 did not; 188 completed and 34 dropped out of treatment. Only data of the 162 adults were used to evaluate treatment. Results between subgroups were compared to determine post-operative differences. Adults and adolescents were included to study predictors of treatment course and outcome. Results were statistically analysed with logistic regression and multiple linear regression analyses. Results: After treatment the group was no longer gender dysphoric. The vast majority functioned quite well psychologically, socially and sexually. Two non-homosexual male-to-female transsexuals expressed regrets. Post-operatively, female-to-male and homosexual transsexuals functioned better in many respects than male-to-female and non-homosexual transsexuals. Eligibility for treatment was largely based upon gender dysphoria, psychological stability, and physical appearance. Male-to-female transsexuals with more psychopathology and cross-gender symptoms in childhood, yet less gender dysphoria at application, were more likely to drop out prematurely. Non-homosexual applicants with much psychopathology and body dissatisfaction reported the worst post-operative outcomes. Conclusions: The results substantiate previous conclusions that sex reassignment is effective. Still, clinicians need to be alert for non-homosexual male-to-females with unfavourable psychological functioning and physical appearance and inconsistent gender dysphoria reports, as these are risk factors for dropping out and poor post-operative results. If they are considered eligible, they may require additional therapeutic guidance during or even after treatment.

- **van de Grift et al., 2017**

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**van de Grift, T. C., Elaut, E., Cerwenka, S. C., Cohen-Kettenis, P. T., Cuyper, G. D., Richter-Appelt, H., & Kreukels, B. P. (2017). Effects of medical interventions on gender dysphoria and body image. *Psychosomatic Medicine*, 79(7), 815-823.**

Objective: The aim of this study from the European Network for the Investigation of Gender Incongruence is to investigate the status of all individuals who had applied for gender confirming interventions from 2007 to 2009, irrespective of whether they received treatment. The current article describes the study protocol, the effect of medical treatment on gender dysphoria and body image, and the predictive value of (pre)treatment factors on posttreatment outcomes. Methods: Data were collected on medical interventions, transition status, gender dysphoria (Utrecht Gender Dysphoria Scale), and body image (Body Image Scale for transsexuals). In total, 201 people participated in the study (37% of the original cohort). Results: At follow-up, 29 participants (14%) did not receive medical interventions, 36 hormones only (18%), and 136 hormones and surgery (68%). Most transwomen had undergone genital surgery, and most transmen chest surgery. Overall, the levels of gender dysphoria and body dissatisfaction were significantly lower at follow-up compared with clinical entry. Satisfaction with therapy responsive and unresponsive body characteristics both improved. High dissatisfaction at admission and lower psychological functioning at follow-up were associated with persistent body dissatisfaction. Conclusions: Hormone-based interventions and surgery were followed by improvements in body satisfaction. The level of psychological symptoms and the degree of body satisfaction at baseline were significantly associated with body satisfaction at follow-up.

◦ van de Grift et al., 2017

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**van de Grift, T. C., Elaut, E., Cerwenka, S. C., Cohen-Kettenis, P. T., & Kreukels, B. P. (2017). Surgical satisfaction, quality of life, and their association after gender-affirming surgery: A follow-up study. *Journal of Sex & Marital Therapy, 44*(2), 138-148.**

We assessed the outcomes of gender-affirming surgery (GAS, or sex-reassignment surgery) 4 to 6 years after first clinical contact, and the associations between postoperative (dis)satisfaction and quality of life (QoL). Our multicenter, cross-sectional follow-up study involved persons diagnosed with gender dysphoria (DSM-IV-TR) who applied for medical interventions from 2007 until 2009. Of 546 eligible persons, 201 (37%) responded, of whom 136 had undergone GAS (genital, chest, facial, vocal cord and/or thyroid cartilage surgery). Main outcome measures were procedure performed, self-reported complications, and satisfaction with surgical outcomes (standardized questionnaires), QoL (Satisfaction With Life Scale, Subjective Happiness Scale, Cantril Ladder), gender dysphoria (Utrecht Gender Dysphoria Scale), and psychological symptoms (Symptom Checklist-90). Postoperative satisfaction was 94% to 100%, depending on the type of surgery performed. Eight (6%) of the participants reported dissatisfaction and/or regret, which was associated with preoperative psychological symptoms or self-reported surgical complications (OR= 6.07). Satisfied respondents' QoL scores were similar to reference values; dissatisfied or regretful respondents' scores were lower. Therefore, dissatisfaction after GAS may be viewed as indicator of unfavorable psychological and QoL outcomes.

◦ Vujovic et al., 2009

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**Vujovic, S., Popovic, S., Sbutega-Milosevic, G., Djordjevic, M., & Gooren, L. (2009). Transsexualism in Serbia: A twenty-year follow-up study. *The Journal of Sexual Medicine, 6*(4), 1018-1023.**

Introduction: Gender dysphoria occurs in all societies and cultures. The prevailing social context has a strong impact on its manifestations as well as on applications by individuals with the condition for sex reassignment treatment. Aim: To describe a transsexual population seeking sex reassignment treatment in Serbia, part of former Yugoslavia. Methods: Data, collated over a period of 20 years, from subjects applying for sex reassignment to the only center in Serbia, were analyzed retrospectively. Main Outcome Measures: Age at the time of application, demographic data, family background, sex ratio, the prevalence of polycystic ovarian syndrome (PCOS) among female-to-male (FTM) transsexuals, and readiness to undergo surgical sex reassignment were tabulated. Results: Applicants for sex reassignment in Serbia are relatively young. The sex ratio is close to 1:1. They often come from single-child families. More than 10% do not wish to undergo surgical sex reassignment. The prevalence of PCOS among FTM transsexuals was higher than in the general population but considerably lower than that reported in the literature from other populations. Of those who had undergone sex reassignment, none expressed regret for their decision. Conclusions: Although transsexualism is a universal phenomenon, the relatively young age of those applying for sex reassignment and the sex ratio of 1:1 distinguish the population in Serbia from others reported in the literature.

◦ Weigert et al., 2013



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**Weigert, R., Frison, E., Sessiecq, Q., Al Mutairi, K., & Casoli, V. (2013). Patient satisfaction with breasts and psychosocial, sexual, and physical well-being after breast augmentation in male-to-female transsexuals. *Plastic and Reconstructive Surgery*, 132(6), 1421-1429.**

Background: Satisfaction with breasts, sexual well-being, psychosocial well-being, and physical well-being are essential outcome factors following breast augmentation surgery in male-to-female transsexual patients. The aim of this study was to measure change in patient satisfaction with breasts and sexual, physical, and psychosocial well-being after breast augmentation in male-to-female transsexual patients. Methods: All consecutive male-to-female transsexual patients who underwent breast augmentation between 2008 and 2012 were asked to complete the BREAST-Q Augmentation module questionnaire before surgery, at 4 months, and later after surgery. A prospective cohort study was designed and postoperative scores were compared with baseline scores. Satisfaction with breasts and sexual, physical, and psychosocial outcomes assessment was based on the BREAST-Q. Results: Thirty-five male-to-female transsexual patients completed the questionnaires. BREAST-Q subscale median scores (satisfaction with breasts, +59 points; sexual well-being, +34 points; and psychosocial well-being, +48 points) improved significantly ( $p < 0.05$ ) at 4 months postoperatively and later. No significant change was observed in physical well-being. Conclusions: In this prospective, noncomparative, cohort study, the current results suggest that the gains in breast satisfaction, psychosocial well-being, and sexual well-being after male-to-female transsexual patients undergo breast augmentation are statistically significant and clinically meaningful to the patient at 4 months after surgery and in the long term.

◦ **Weyers et al., 2009**

[Visit Source Website](#)

**Weyers, S., Elaut, E., De Sutter, P., Gerris, J., T'Sjoen, G., et al. (2009). Long-term assessment of the physical, mental, and sexual health among transsexual women. *The Journal of Sexual Medicine*, 6(3), 752-760.**

Introduction: Transsexualism is the most extreme form of gender identity disorder and most transsexuals eventually pursue sex reassignment surgery (SRS). In transsexual women, this comprises removal of the male reproductive organs, creation of a neovagina and clitoris, and often implantation of breast prostheses. Studies have shown good sexual satisfaction after transition. However, long-term follow-up data on physical, mental and sexual functioning are lacking. Aim: To gather information on physical, mental, and sexual well-being, health-promoting behavior and satisfaction with gender-related body features of transsexual women who had undergone SRS. Methods: Fifty transsexual women who had undergone SRS  $\geq 6$  months earlier were recruited. Main Outcome Measures: Self-reported physical and mental health using the Dutch version of the Short-Form-36 (SF-36) Health Survey; sexual functioning using the Dutch version of the Female Sexual Function Index (FSFI). Satisfaction with gender-related bodily features as well as with perceived female appearance; importance of sex, relationship quality, necessity and advisability of gynecological exams, as well as health concerns and feelings of regret concerning transition were scored. Results: Compared with reference populations, transsexual women scored good on physical and mental level (SF-36). Gender-related bodily features were shown to be of high value. Appreciation of their appearance as perceived by others, as well as their own satisfaction with their self-image as women obtained a good score (8 and 9, respectively). However, sexual functioning as assessed through FSFI was suboptimal when compared with biological women, especially the sublevels concerning arousal, lubrication, and pain. Superior scores concerning sexual function were obtained in those transsexual women who were in a relationship and in heterosexuals. Conclusions: Transsexual women function well on a physical, emotional, psychological and social level. With respect to sexuality, they suffer from specific difficulties, especially concerning arousal, lubrication, and pain.

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**Below are 4 studies that contain mixed or null findings on the effect of gender transition on transgender well-being. [Click here](#) to jump to the 17 studies that consist of literature reviews or guidelines that help advance knowledge about the effect of gender transition on transgender well-being. [Click here](#) to jump to the 51 studies that found that gender transition improves the well-being of transgender people.**

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◦ **Barrett, 1998**

[Visit Source Website](#)

**Barrett J. (1998). Psychological and social function before and after phalloplasty. *The International Journal of Transgenderism*, 2(1), 1-8.**

There are no quantitative assessments of the benefits of phalloplasty in a female transsexual population. The study addresses this question, comparing transsexuals accepted for such surgery with transsexuals after such surgery has been performed. A population of 23 transsexuals accepted for phalloplasty was compared to a population of 40 who had undergone such surgery between six and one hundred and sixty months previously. The General Health Questionnaire (GHQ), Symptom Checklist 90 (SCL-90), Bem Sex Role Inventory and Social Role Performance Schedule (SRPS) were employed. Additionally, a questionnaire assessing satisfaction with cosmetic appearance, sexual function, relationship and urinary function was used, along with a semi-structured interview quantifying alcohol, cigarette and drug usage, and current sexual practice. There were significant differences between the populations. The post operative group showed higher depression ratings on the depression subscale of the GHQ. The masculine pre-operative Bem scores were neutral post-operatively as feminine sub-scores increased. There was improved satisfaction with genital appearance post-operatively, but satisfaction with relationships fell, although to a non-significant extent. Most other changes were in the expected direction but did not achieve significance. Transsexuals accepted for phalloplasty have very good psychological health. Tendency to further improvement is the case after phalloplasty. Depression is commoner, however, and quality of relationships declines somewhat, perhaps in consequence. Surgeons might advise partners as well as patients of realistic expectations from such surgery.

- Lindqvist et al., 2017

[Visit Source Website](#)

**Lindqvist, E. K., Sigurjonsson, H., Möllermark, C., Rinder, J., Farnebo, F., et al. (2017). Quality of life improves early after gender reassignment surgery in transgender women. *European Journal of Plastic Surgery*, 40(3), 223-226.**

Background: Few studies have examined the long-term quality of life (QoL) of individuals with gender dysphoria, or how it is affected by treatment. Our aim was to examine the QoL of transgender women undergoing gender reassignment surgery (GRS). Methods: We performed a prospective cohort study on 190 patients undergoing male-to-female GRS at Karolinska University Hospital between 2003 and 2015. We used the Swedish version of the Short Form-36 Health Survey (SF-36), which measures QoL across eight domains. The questionnaire was distributed to patients pre-operatively, as well as 1, 3, and 5 years post-operatively. The results were compared between the different measure points, as well as between the study group and the general population. Results: On most dimensions of the SF-36 questionnaire, transgender women reported a lower QoL than the general population. The scores of SF-36 showed a non-significant trend to be lower 5 years post-GRS compared to pre-operatively, a decline consistent with that of the general population. Self-perceived health compared to 1 year previously rose in the first post-operative year, after which it declined. Conclusions: To our knowledge, this is the largest prospective study to follow a group of transgender patients with regards to QoL over continuous temporal measure points. Our results show that transgender women generally have a lower QoL compared to the general population. GRS leads to an improvement in general well-being as a trend but over the long-term, QoL decreases slightly in line with that of the comparison group. Level of evidence: Level III, therapeutic study.

- Simonsen et al., 2016

[Visit Source Website](#)

**Simonsen, R. K., Giraldi, A., Kristensen, E., & Hald, G. M. (2016). Long-term follow-up of individuals undergoing sex reassignment surgery: Psychiatric morbidity and mortality. *Nordic Journal Of Psychiatry*, 70(4), 241-247.**

Background: There is a lack of long-term register-based follow-up studies of sex-reassigned individuals concerning mortality and psychiatric morbidity. Accordingly, the present study investigated both mortality and psychiatric morbidity using a sample of individuals with transsexualism which comprised 98% (n = 104) of all individuals in Denmark. Aims: (1) To investigate psychiatric morbidity before and after sex reassignment surgery (SRS) among Danish individuals who underwent SRS during the period of 1978–2010. (2) To investigate mortality among Danish individuals who underwent SRS during the period of 1978–2010. Method: Psychiatric morbidity and mortality were identified by data from the Danish Psychiatric Central Research Register and the Cause of Death Register through a retrospective register study of 104 sex-reassigned individuals. Results: Overall, 27.9% of the sample were registered with psychiatric morbidity before SRS and 22.1% after SRS (p = not significant). A total of 6.7% of the sample were registered with psychiatric morbidity both before and after SRS. Significantly more psychiatric diagnoses were found before SRS for those assigned as female at birth. Ten individuals were registered as deceased post-SRS with an average age of death of 53.5 years. Conclusions: No significant difference in psychiatric morbidity or mortality was found between male to female and female to male (FtM) save for the total number of psychiatric diagnoses where FtM held a significantly higher number of psychiatric diagnoses overall. Despite the over-representation of psychiatric diagnoses both pre- and post-SRS the study found that only a relatively limited number of individuals had received diagnoses both prior to and after SRS. This suggests that generally SRS may reduce psychological morbidity for some individuals while increasing it for others.

- Udeze, 2008

[Visit Source Website](#)

**Udeze, B., Abdelmawla, N., Khoosal, D., & Terry, T. (2008). Psychological functions in male-to-female transsexual people before and after surgery. *Sexual & Relationship Therapy*, 23(2), 141-145.**

Patients with gender dysphoria (GD) suffer from a constant feeling of psychological discomfort related to their anatomical sex. Gender reassignment surgery (GRS) attempts to release this discomfort. The aim of this study was to compare the functioning of a cohort of patients with GD before and after GRS. We hypothesized that there would be an improvement in the scores of the self-administered SCL-90R following gender reassignment surgery among male-to-female people with gender dysphoria. We studied 40 patients with a DSM-IV diagnosis of Gender Identity Disorder (GID) who attended Leicester Gender Identity Clinic. We compared their functioning as measured by Symptom Check List-90R (SCL-90R) which was administered to 40 randomly selected male-to-female patients before and within six months after GRS using the same sample as control pre-and post-surgery. There was no significant change in the different sub-scales of the SCL-90R scores in patients with male-to-female GID pre- and within six months post-surgery. The results of the study showed that GRS had no significant effect on functioning as measured by SCL-90R within six months of surgery. Our study has the advantage of reducing inter-subject variability by using the same patients as their own control. This study may be limited by the duration of reassessment post-surgery. Further studies with larger sample size and using other psychosocial scales are needed to elucidate on the effectiveness of surgical intervention on psychosocial parameters in patients with GD.

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- American Psychological, 2015

[Visit Source Website](#)

**Guidelines for psychological practice with transgender and gender nonconforming people. (2015). *American Psychologist*, 70(9), 832-864.**

In 2015, the American Psychological Association adopted *Guidelines for Psychological Practice with Transgender and Gender Nonconforming Clients* in order to describe affirmative psychological practice with transgender and gender nonconforming (TGNC) clients. There are 16 guidelines in this document that guide TGNC-affirmative psychological practice across the lifespan, from TGNC children to older adults. The Guidelines are organized into five clusters: (a) foundational knowledge and awareness; (b) stigma, discrimination, and barriers to care; (c) lifespan development; (d) assessment, therapy, and intervention; and (e) research, education, and training. In addition, the guidelines provide attention to TGNC people across a range of gender and racial/ethnic identities. The psychological practice guidelines also attend to issues of research and how psychologists may address the many social inequities TGNC people experience.

- Bockting et al., 2016

[Visit Source Website](#)

**Bockting, W., Coleman, E., Deutsch, M. B., Guillamon, A., Meyer, W., et al. (2016). Adult development and quality of life of transgender and gender nonconforming people. *Current Opinion in Endocrinology & Diabetes and Obesity*, 23(2), 188–197.**

Purpose of review: Research on the health of transgender and gender nonconforming people has been limited with most of the work focusing on transition-related care and HIV. The present review summarizes research to date on the overall development and quality of life of transgender and gender nonconforming adults, and makes recommendations for future research. Recent findings: Pervasive stigma and discrimination attached to gender nonconformity affect the health of transgender people across the lifespan, particularly when it comes to mental health and well-being. Despite the related challenges, transgender and gender nonconforming people may develop resilience over time. Social support and affirmation of gender identity play herein a critical role. Although there is a growing awareness of diversity in gender identity and expression among this population, a comprehensive understanding of biopsychosocial development beyond the gender binary and beyond transition is lacking. Summary: Greater visibility of transgender people in society has revealed the need to understand and promote their health and quality of life broadly, including but not limited to gender dysphoria and HIV. This means addressing their needs in context of their families and communities, sexual and reproductive health, and successful aging. Research is needed to better understand what factors are associated with resilience and how it can be effectively promoted.

- Byne et al., 2012

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**Byne, W., Bradley, S.J., Coleman, E., et al. (2012). Report of the American Psychiatric Association task force on treatment of gender identity disorder. *Archives of Sexual Behavior*, 41(4): 759–796.**

Both the diagnosis and treatment of Gender Identity Disorder (GID) are controversial. Although linked, they are separate issues and the DSM does not evaluate treatments. The Board of Trustees (BOT) of the American Psychiatric Association (APA), therefore, formed a Task Force charged to perform a critical review of the literature on the treatment of GID at different ages, to assess the quality of evidence pertaining to treatment, and to prepare a report that included an opinion as to whether or not sufficient credible literature exists for development of treatment recommendations by the APA. The literature on treatment of gender dysphoria in individuals with disorders of sex development was also assessed. The completed report was accepted by the BOT on September 11, 2011. The quality of evidence pertaining to most aspects of treatment in all subgroups was determined to be low; however, areas of broad clinical consensus were identified and were deemed sufficient to support recommendations for treatment in all subgroups. With subjective improvement as the primary outcome measure, current evidence was judged sufficient to support recommendations for adults in the form of an evidence-based APA Practice Guideline with gaps in the empirical data supplemented by clinical consensus. The report recommends that the APA take steps beyond drafting treatment recommendations. These include issuing position statements to clarify the APA's position regarding the medical necessity of treatments for GID, the ethical bounds of treatments of gender variant minors, and the rights of persons of any age who are gender variant, transgender or transsexual.

- Carroll, 1999

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**Carroll, R. A. (1999). Outcomes of treatment for gender dysphoria. *Journal of Sex Education and Therapy*, 24(3), 128–136.**

This paper reviews the empirical research on the psychosocial outcomes of treatment for gender dysphoria. Recent research has highlighted the heterogeneity of transgendered experiences. There are four possible outcomes for patients who present with the dilemma of gender dysphoria: an unresolved outcome,



acceptance of one's given gender, engaging in a cross-gender role on a part-time basis, and making a full-time transition to the other gender role. Clinical work, but not empirical research, suggests that some individuals with gender dysphoria may come to accept their given gender role through psychological treatment. Many individuals find that it is psychologically sufficient to express the transgendered part of themselves through such activities as cross-dressing or gender blending. The large body of research on the outcome of gender reassignment surgery indicates that, for the majority of those who undergo this process, the outcome is positive. Predictors of a good outcome include good pre-reassignment psychological adjustment, family support, at least 1 year of living in the desired role, consistent use of hormones, psychological treatment, and good surgical outcomes. The outcome literature provides strong support for adherence to the Standards of Care of the Harry Benjamin International Gender Dysphoria Association. Implications to be drawn from this research include an appreciation of the diversity of transgendered experience, the need for more research on non-reassignment resolutions to gender dysphoria, and the importance of assisting the transgendered individual to identify the resolution that best suits him or her.

- **Cohen-Kettenis and Gooren, 1999**

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**Cohen-Kettenis, P. T., & Gooren, L. J. G. (1999). Transsexualism: A review of etiology, diagnosis and treatment. *Journal of Psychosomatic Research*, 46(4), 315-333.**

Transsexualism is considered to be the extreme end of the spectrum of gender identity disorders characterized by, among other things, a pursuit of sex reassignment surgery (SRS). The origins of transsexualism are still largely unclear. A first indication of anatomic brain differences between transsexuals and nontranssexuals has been found. Also, certain parental (rearing) factors seem to be associated with transsexualism. Some contradictory findings regarding etiology, psychopathology and success of SRS seem to be related to the fact that certain subtypes of transsexuals follow different developmental routes. The observations that psychotherapy is not helpful in altering a crystallized cross-gender identity and that certain transsexuals do not show severe psychopathology has led clinicians to adopt sex reassignment as a treatment option. In many countries, transsexuals are now treated according to the Standards of Care of the Harry Benjamin International Gender Dysphoria Association, a professional organization in the field of transsexualism. Research on postoperative functioning of transsexuals does not allow for unequivocal conclusions, but there is little doubt that sex reassignment substantially alleviates the suffering of transsexuals. However, SRS is no panacea. Psychotherapy may be needed to help transsexuals in adapting to the new situation or in dealing with issues that could not be addressed before treatment.

- **Coleman et al., 2012**

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**Coleman, E., Bockting, W., Botzer, M., Cohen-Kettenis, P., DeCuypere, G., et al. (2012). Standards of care for the health of transsexual, transgender, and gender-nonconforming people, version 7. *International Journal of Transgenderism*, 13(4), 165-232.**

The Standards of Care (SOC) for the Health of Transsexual, Transgender, and Gender Nonconforming People is a publication of the World Professional Association for Transgender Health (WPATH). The overall goal of the SOC is to provide clinical guidance for health professionals to assist transsexual, transgender, and gender nonconforming people with safe and effective pathways to achieving lasting personal comfort with their gendered selves, in order to maximize their overall health, psychological well-being, and self-fulfillment. This assistance may include primary care, gynecologic and urologic care, reproductive options, voice and communication therapy, mental health services (e.g., assessment, counseling, psychotherapy), and hormonal and surgical treatments. The SOC are based on the best available science and expert professional consensus. Because most of the research and experience in this field comes from a North American and Western European perspective, adaptations of the SOC to other parts of the world are necessary. The SOC articulate standards of care while acknowledging the role of making informed choices and the value of harm reduction approaches. In addition, this version of the SOC recognizes that treatment for gender dysphoria i.e., discomfort or distress that is caused by a discrepancy between persons gender identity and that persons sex assigned at birth (and the associated gender role and/or primary and secondary sex characteristics) has become more individualized. Some individuals who present for care will have made significant self-directed progress towards gender role changes or other resolutions regarding their gender identity or gender dysphoria. Other individuals will require more intensive services. Health professionals can use the SOC to help patients consider the full range of health services open to them, in accordance with their clinical needs and goals for gender expression.

- **Committee on Health Care for Underserved, 2011**

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**Committee Opinion No. 512: Health Care for Transgender Individuals. (2011). *Obstetrics & Gynecology*, 118(6), 1454–1458.**

Transgender individuals face harassment, discrimination, and rejection within our society. Lack of awareness, knowledge, and sensitivity in health care communities eventually leads to inadequate access to, underutilization of, and disparities within the health care system for this population. Although the care for these patients is often managed by a specialty team, obstetrician–gynecologists should be prepared to assist or refer transgender individuals with routine treatment and screening as well as hormonal and surgical therapies. The American College of Obstetricians and Gynecologists opposes discrimination on the basis of gender identity and urges public and private health insurance plans to cover the treatment of gender identity disorder.

- **Costa and Colizzi, 2016**

[Visit Source Website](#)

**Costa, R., & Colizzi, M. (2016). The effect of cross-sex hormonal treatment on gender dysphoria individuals' mental health: A systematic review. *Neuropsychiatric Disease and Treatment*, 12, 1953-1966.**

Cross-sex hormonal treatment represents a main aspect of gender dysphoria health care pathway. However, it is still debated whether this intervention translates into a better mental well-being for the individual and which mechanisms may underlie this association. Although sex reassignment surgery has been the subject of extensive investigation, few studies have specifically focused on hormonal treatment in recent years. Here, we systematically review all studies examining the effect of cross-sex hormonal treatment on mental health and well-being in gender dysphoria. Research tends to support the evidence that hormone therapy reduces symptoms of anxiety and dissociation, lowering perceived and social distress and improving quality of life and self-esteem in both male-to-female and female-to-male individuals. Instead, compared to female-to-male individuals, hormone-treated male-to-female individuals seem to benefit more in terms of a reduction in their body uneasiness and personality-related psychopathology and an amelioration of their emotional functioning. Less consistent findings support an association between hormonal treatment and other mental health-related dimensions. In particular, depression, global psychopathology, and psychosocial functioning difficulties appear to reduce only in some studies, while others do not suggest any improvement in these domains. Results from longitudinal studies support more consistently the association between hormonal treatment and improved mental health. On the contrary, a number of cross-sectional studies do not support this evidence. This review provides possible biological explanation vs psychological explanation (direct effect vs indirect effect) for the hormonal treatment-induced better mental well-being. In conclusion, this review indicates that gender dysphoria-related mental distress may benefit from hormonal treatment intervention, suggesting a transient reaction to the dissatisfaction connected to the incongruent body image rather than a stable psychiatric comorbidity. In this perspective, timely hormonal treatment intervention represents a crucial issue in gender dysphoria individuals' mental health-related outcome.

- **Dhejne et al., 2016**

[Visit Source Website](#)

**Dhejne, C., Van Vlerken, R., Heylens, G., & Arcelus, J. (2016). Mental health and gender dysphoria: A review of the literature. *International Review Of Psychiatry*, 28(1), 44-57.**

Studies investigating the prevalence of psychiatric disorders among trans individuals have identified elevated rates of psychopathology. Research has also provided conflicting psychiatric outcomes following gender-confirming medical interventions. This review identifies 38 cross-sectional and longitudinal studies describing prevalence rates of psychiatric disorders and psychiatric outcomes, pre- and post-gender-confirming medical interventions, for people with gender dysphoria. It indicates that, although the levels of psychopathology and psychiatric disorders in trans people attending services at the time of assessment are higher than in the cis population, they do improve following gender-confirming medical intervention, in many cases reaching normative

values. The main Axis I psychiatric disorders were found to be depression and anxiety disorder. Other major psychiatric disorders, such as schizophrenia and bipolar disorder, were rare and were no more prevalent than in the general population. There was conflicting evidence regarding gender differences: some studies found higher psychopathology in trans women, while others found no differences between gender groups. Although many studies were methodologically weak, and included people at different stages of transition within the same cohort of patients, overall this review indicates that trans people attending transgender health-care services appear to have a higher risk of psychiatric morbidity (that improves following treatment), and thus confirms the vulnerability of this population.

- **Gijs and Brewaeys, 2007**

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**Gijs, L., & Brewaeys, A. (2007). Surgical treatment of gender dysphoria in adults and adolescents: Recent developments, effectiveness, and challenges. *Annual Review of Sex Research, 18*(1), 178-224.**

In 1990 Green and Fleming concluded that sex reassignment surgery (SRS) is an effective treatment for transsexuality because it reduced gender dysphoria drastically. Since 1990, many new outcome studies have been published, raising the question as to whether the conclusion of Green and Fleming still holds. After describing terminological and conceptual developments related to the treatment of gender identity disorder (GID), follow-up studies, including both adults and adolescents, of the outcomes of SRS are reviewed. Special attention is paid to the effects of SRS on gender dysphoria, sexuality, and regret. Despite methodological shortcomings of many of the studies, we conclude that SRS is an effective treatment for transsexualism and the only treatment that has been evaluated empirically with large clinical case series.

- **Gooren, 2011**

[Visit Source Website](#)

**Gooren, L. J. (2011). Care of transsexual persons. *New England Journal of Medicine, 364*(13), 1251–1257.**

This Journal feature begins with a case vignette highlighting a common clinical problem. Evidence supporting various strategies is then presented, followed by a review of formal guidelines, when they exist. The article ends with the author's clinical recommendations. A healthy and successful 40-year-old man finds it increasingly difficult to live as a male. In childhood he preferred playing with girls and recalls feeling that he should have been one. Over time he has come to regard himself more and more as a female personality inhabiting a male body. After much agonizing, he has concluded that only sex reassignment can offer the peace of mind he craves. What would you advise? A healthy and successful 40-year-old man finds it increasingly difficult to live as a male. In childhood he preferred playing with girls and recalls feeling that he should have been one. Over time he has come to regard himself more and more as a female personality inhabiting a male body. After much agonizing, he has concluded that only sex reassignment can offer the peace of mind he craves. What would you advise?

- **Hembree et al., 2009**

[Visit Source Website](#)

**Hembree, W. C., Cohen-Kettenis, P., Delemarre-van de Waal, H. A., Gooren, L. J., Meyer, W., et al. (2009). Endocrine treatment of transsexual persons: An endocrine society clinical practice guideline. *The Journal of Clinical Endocrinology & Metabolism, 94*(9), 3132–3154.**

Objective: The aim was to formulate practice guidelines for endocrine treatment of transsexual persons. Evidence: This evidence-based guideline was developed using the Grading of Recommendations, Assessment, Development, and Evaluation (GRADE) system to describe the strength of recommendations and the quality of evidence, which was low or very low. Consensus Process: Committees and members of The Endocrine Society, European Society of Endocrinology, European Society for Paediatric Endocrinology, Lawson Wilkins Pediatric Endocrine Society, and World Professional Association for Transgender Health commented on preliminary drafts of these guidelines. Conclusions: Transsexual persons seeking to develop the physical characteristics of the desired gender require a safe, effective hormone regimen that will 1) suppress endogenous hormone secretion determined by the person's genetic/biologic sex and 2) maintain sex hormone levels within the normal range for the person's desired gender. A mental health professional (MHP) must recommend endocrine treatment and participate in ongoing care throughout the endocrine transition and decision for surgical sex reassignment. The endocrinologist must confirm the diagnostic criteria the MHP used to make these recommendations. Because a diagnosis of transsexualism in a prepubertal child cannot be made with certainty, we do not recommend endocrine treatment of prepubertal children. We recommend treating transsexual adolescents (Tanner stage 2) by suppressing puberty with GnRH analogues until age 16 years old, after which cross-sex hormones may be given. We suggest suppressing endogenous sex hormones, maintaining physiologic levels of gender-appropriate sex hormones and monitoring for known risks in adult transsexual persons. Endocrine treatment of transsexual persons should include suppression of endogenous sex hormones, physiologic levels of gender-appropriate sex hormones, and suppression of puberty in adolescents (Tanner stage 2).

- Michel et al., 2002

[Visit Source Website](#)

**Michel, A., Ansseau, M., Legros, J., Pitchot, W., & Mormont, C. (2002). The transsexual: What about the future? *European Psychiatry*, 17(6), 353-362.**

Since the 1950s, sexual surgical reassignments have been frequently carried out. As this surgical therapeutic procedure is controversial, it seems important to explore the actual consequences of such an intervention and objectively evaluate its relevance. In this context, we have carried out a review of the literature. After looking at the methodological limitations of follow-up studies, the psychological, sexual, social, and professional futures of the individuals subject to a transsexual operation are presented. Finally, prognostic aspects are considered. In the literature, follow-up studies tend to show that surgical transformations have positive consequences for the subjects. In the majority of cases, transsexuals are very satisfied with their intervention and any difficulties experienced are often temporary and disappear within a year after the surgical transformation. Studies show that there is less than 1% of regrets, and a little more than 1% of suicides among operated subjects. The empirical research does not confirm the opinion that suicide is strongly associated with surgical transformation.

- Murad et al., 2010

[Visit Source Website](#)

**Murad, M. H., Elamin, M. B., Garcia, M. Z., Mullan, R. J., Murad, A., Erwin, P. J., & Montori, V. M. (2010). Hormonal therapy and sex reassignment: A systematic review and meta-analysis of quality of life and psychosocial outcomes. *Clinical Endocrinology*, 72(2), 214-231.**

Objective: To assess the prognosis of individuals with gender identity disorder (GID) receiving hormonal therapy as a part of sex reassignment in terms of quality of life and other self-reported psychosocial outcomes. Methods: We searched electronic databases, bibliography of included studies and expert files. All study designs were included with no language restrictions. Reviewers working independently and in pairs selected studies using predetermined inclusion and exclusion criteria, extracted outcome and quality data. We used a random-effects meta-analysis to pool proportions and estimate the 95% confidence intervals (CIs). We estimated the proportion of between-study heterogeneity not attributable to chance using the I<sup>2</sup> statistic. Results: We identified 28 eligible studies. These studies enrolled 1833 participants with GID (1093 male-to-female, 801 female-to-male) who underwent sex reassignment that included hormonal therapies. All the studies were observational and most lacked controls. Pooling across studies shows that after sex reassignment, 80% of individuals with GID reported significant improvement in gender dysphoria (95% CI = 68–89%; 8 studies; I<sup>2</sup> = 82%); 78% reported significant improvement in psychological symptoms (95% CI = 56–94%; 7 studies; I<sup>2</sup> = 86%); 80% reported significant improvement in quality of life (95% CI = 72–88%; 16 studies; I<sup>2</sup> = 78%); and 72% reported significant improvement in sexual function (95% CI = 60–81%; 15 studies; I<sup>2</sup> = 78%). Conclusions: Very low quality evidence suggests that sex reassignment that includes hormonal interventions in individuals with GID likely improves gender dysphoria, psychological functioning and comorbidities, sexual function and overall quality of life.

- Reisner et al., 2016



[Visit Source Website](#)

**Reisner, S. L., Poteat, T., Keatley, J., Cabral, M., Mothopeng, T., et al. (2016). Global health burden and needs of transgender populations: A review. *The Lancet*, 388(10042), 412-436.**

Transgender people are a diverse population affected by a range of negative health indicators across high-income, middle-income, and low-income settings. Studies consistently document a high prevalence of adverse health outcomes in this population, including HIV and other sexually transmitted infections, mental health distress, and substance use and abuse. However, many other health areas remain understudied, population-based representative samples and longitudinal studies are few, and routine surveillance efforts for transgender population health are scarce. The absence of survey items with which to identify transgender respondents in general surveys often restricts the availability of data with which to estimate the magnitude of health inequities and characterise the population-level health of transgender people globally. Despite the limitations, there are sufficient data highlighting the unique biological, behavioural, social, and structural contextual factors surrounding health risks and resiliencies for transgender people. To mitigate these risks and foster resilience, a comprehensive approach is needed that includes gender affirmation as a public health framework, improved health systems and access to health care informed by high quality data, and effective partnerships with local transgender communities to ensure responsiveness of and cultural specificity in programming. Consideration of transgender health underscores the need to explicitly consider sex and gender pathways in epidemiological research and public health surveillance more broadly.

- **Schmidt and Levine, 2015**

[Visit Source Website](#)

**Schmidt, L., & Levine, R. (2015). Psychological Outcomes and Reproductive Issues Among Gender Dysphoric Individuals. *Endocrinology and Metabolism Clinics of North America*, 44(4), 773-785.**

Gender dysphoria is a condition in which a person experiences discrepancy between the natal anatomic sex and the gender he or she identifies with, resulting in internal distress and a desire to live as the preferred gender. There is increasing demand for treatment, which includes suppression of puberty, cross-sex hormone therapy, and sex reassignment surgery. This article reviews longitudinal outcome data evaluating psychological well-being and quality of life among transgender individuals who have undergone cross-sex hormone treatment or sex reassignment surgery. Proposed methodologies for diagnosis and initiation of treatment are discussed, and the effects of cross-sex hormones and sex reassignment surgery on future reproductive potential.

- **White Hughto and Reisner, 2016**

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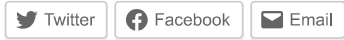
**White Hughto, J. M., & Reisner, S. L. (2016). A systematic review of the effects of hormone therapy on psychological functioning and quality of life in transgender individuals. *Transgender Health*, 1(1), 21–31.**

Objectives: To review evidence from prospective cohort studies of the relationship between hormone therapy and changes in psychological functioning and quality of life in transgender individuals accessing hormone therapy over time. Data Sources: MEDLINE, PsycINFO, and PubMed were searched for relevant studies from inception to November 2014. Reference lists of included studies were hand searched. Results: Three uncontrolled prospective cohort studies, enrolling 247 transgender adults (180 male-to-female [MTF], 67 female-to-male [FTM]) initiating hormone therapy for the treatment of gender identity disorder (prior diagnostic term for gender dysphoria), were identified. The studies measured exposure to hormone therapy and subsequent changes in mental health (e.g., depression, anxiety) and quality of life outcomes at follow-up. Two studies showed a significant improvement in psychological functioning at 3–6 months and 12 months compared with baseline after initiating hormone therapy. The third study showed improvements in quality of life outcomes 12 months after initiating hormone therapy for FTM and MTF participants; however, only MTF participants showed a statistically significant

increase in general quality of life after initiating hormone therapy. Conclusions: Hormone therapy interventions to improve the mental health and quality of life in transgender people with gender dysphoria have not been evaluated in controlled trials. Low quality evidence suggests that hormone therapy may lead to improvements in psychological functioning. Prospective controlled trials are needed to investigate the effects of hormone therapy on the mental health of transgender people.

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