

## Scientific Argument: Is Biological-Sex a Synonym for Gender? The Nomenclature and Histology of Gender

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Recent social arguments have ignited the argument between the biological and the social identification factors of gender. Histology is a branch of biology that studies the structure of tissues and the components that form the tissues, which are the cells [5]. In the biological nomenclature of gender, the histological tissues that form the reproductive tract assign the biological-sex. In human mammals, the internal tissues of the reproductive system matter the most when assigning the biological gender. On the other hand, the social spectrum claims that the emotional and psychological identifications of gender matter the most when assigning the gender, regardless of the anatomical and histological reproductive system of the biological-sex. In social studies, gender identifies as the qualities and behavioral traits of a specific group of people proclaiming male or female traits [4]. Nonetheless, the research identifies psychological disturbance in individuals who suffer discomfort from their birth-assigned gender as their biological-sex, the phenomena of gender dysphoria [3]. In the reported research, individuals suffering from gender dysphoria assign their gender on an emotional basis not the biological-sex. This article attempts to highlight the evidence of biological-sex and gender nomenclatures in science. The author investigates if the biological-sex is a synonym for gender.

The anatomy and histology of male and female reproductive systems significantly deviate from one another. The morphology of the male and female genitals diverse internally and externally. More significantly, even the cells that form the histological tissues of the reproductive tract are genetically different. The genetic makeup of human sex chromosomes justifies the anatomical and histological difference, as the male sex chromosome is XY

while the female sex chromosome is XX. Arnold et al. elaborate on sex-chromosomes determination theory stating that the genetic variations between the Y and X chromosomes affect the downstream of genetic expressions in the body, even pathological sex-related diseases (2012). Further, the endocrine system produces systematically biased hormone secretion responses in relation to the sex- chromosomes [1]. Therefore, the genetic bias of X and Y chromosomes impacts the pathological, anatomical, histological, and hormonal expressions in human mammals.

When analyzing gender, the systematic differences between male and female biological factors are critical factors in this investigation. The anatomy of the reproductive system of the male human mammal consists of the testes, epididymis, vas deference, male accessory glands, and urethra [6]. The histological structure of each male organ pertains to the physiology and function of the male gonadal system, which is the production of sperm. On the other hand, the anatomy of the female reproductive system composes of the fallopian tubes, ovaries, uterus, cervix, female accessory glands, internal vagina, and external vagina [6]. The physiology of the female reproductive system underlies the production of the female gametes, the ova. The endocrine system assists the reproductive organs produce the gametes, depending on the type of tissues and sex chromosomes [6]. In conclusion, the biological-sex of each human mammal drastically distinguishes it from the other. Biologically, a male human mammal will never possess the histological tissues of the female gonadal structure and vice versa. In other words, the biological-gender of a male is not similar to the biological-gender of a female.

The identification of gender to detect the biological-sex of a human has become socially rejected by individuals who suffer from gender dysphoria, as gender-dysphoric persons resist traits or behavioral categorization on biological-sex basis [3]. Therefore, gender-dysphoric humans find utilization of males or females in language limits their off-gender traits and behavior. In a social context, the biological-sex of males is associated with masculinity, while the biological-sex of females is associated with femininity by traditional norms [2]. However, the qualities of masculinity and femininity lack a degree of measurement. Therefore, the biological-sex identifies the common social traits to assign to their gender traditionally. But, the fact that traditional behaviors of male and female humans have significantly evolved over the decades implies that a biological male might share behavioral and social qualities of the other biological-sex and vice versa. The scientific literature uses the terms gender and biological-sex interchangeably. However, biological-sex refers exclusively to the genes and organs of the reproductive tract, and gender refers inclusively to the compound of personality features and biological sexual behavior. In details, gender can describe the biological-sex but, biological-sex does not necessarily describe the behavior of the gender. Yet, the biological-sex never limits personality traits. The behavior of the current generation imposes the exclusive use of "biological-sex" when referring to the category of the reproductive body. However, gender refers to personality traits and behaviors. The biological-sex is part of the human identity, but the personality is subject to change. Thus, gender is not an identity. Gender is a personality trait that combines a range of behaviors, characteristics, and qualities such as masculine, feminine, neutral, or other. Noteworthy, the masculine, feminine, and neutral traits evolve through the time.

Overall, current generations that suffer from "gender dysphoria" identifies gender in- disassociation to the biological reproductive system. As a result, gender is not a synonym for biological-sex nor an identity. Gender is a personality feature that can undergo influence, change, and evolution. On the other hand, biological-sex is a critical human biological identity that correlates with the internal histological structure of the reproductive tracts. Scientists and clinical practitioners must utilize the terms biological-sex or biological-gender when discussing the reproductive traits of the patient. The surgical changes of the external genitals will never change the histological and genomic formula of sex in humans. While someone might appear the opposite of the internal gender due to

their social behavior, their internal reproductive tract will identify as male or female depending on the histology and genes of this individual. The use of gender that is different from the biological-sex is confusing in clinical settings. For example, a female that gives birth to children with all the pain of the length of pregnancy is scientifically different from a biological-male that identifies as a female by gender traits. A biological-female diverse genetically and histologically from a transgender female, as well. Remarkably, gender dysphoric individuals are insensitive to patients with sex-identification disorders such as down's syndrome or other similar conditions.

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