

transgender

The background is a vibrant, abstract composition. It features a central, glowing medical symbol (a caduceus) that is semi-transparent and surrounded by swirling, colorful light trails in shades of red, orange, yellow, green, and blue. The overall effect is dynamic and ethereal, suggesting a connection between medicine and the human body or mind.

Transgender Individuals remain  
one of the most underserved  
groups in healthcare

Most endocrinologists do not offer  
care and feel neither comfortable  
nor competent to do so.

# Disclosures:

- Dr Jorge de Jesús has no formal training or experience in treating transsexual individuals
- This presentation is a summary of my opinions based on current clinical guidelines and most recent published medical literature
- I have no conflict of interests with the content of the presentation to be offered
- I have received honorariums as speaker from pharmaceutical companies as : Janssen; Sanofi-Aventis- Merck

# Objectives:

Destigmatize the transgender individual

(to remove association of disgrace or shame)

Take affirmative actions to help this population when they ask for help

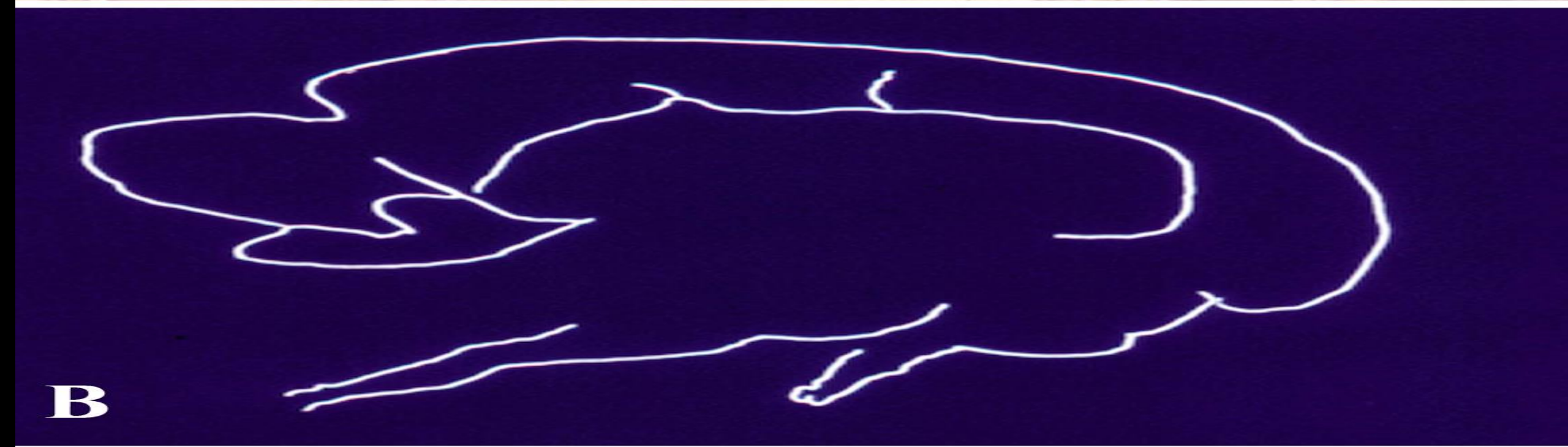
Motivate endocrinology training curriculums to include transgender health issues

Have a multidisciplinary approach for addressing the complex issues that affect these individuals.





**A** Creados a imagen y semejanza: De Quién?

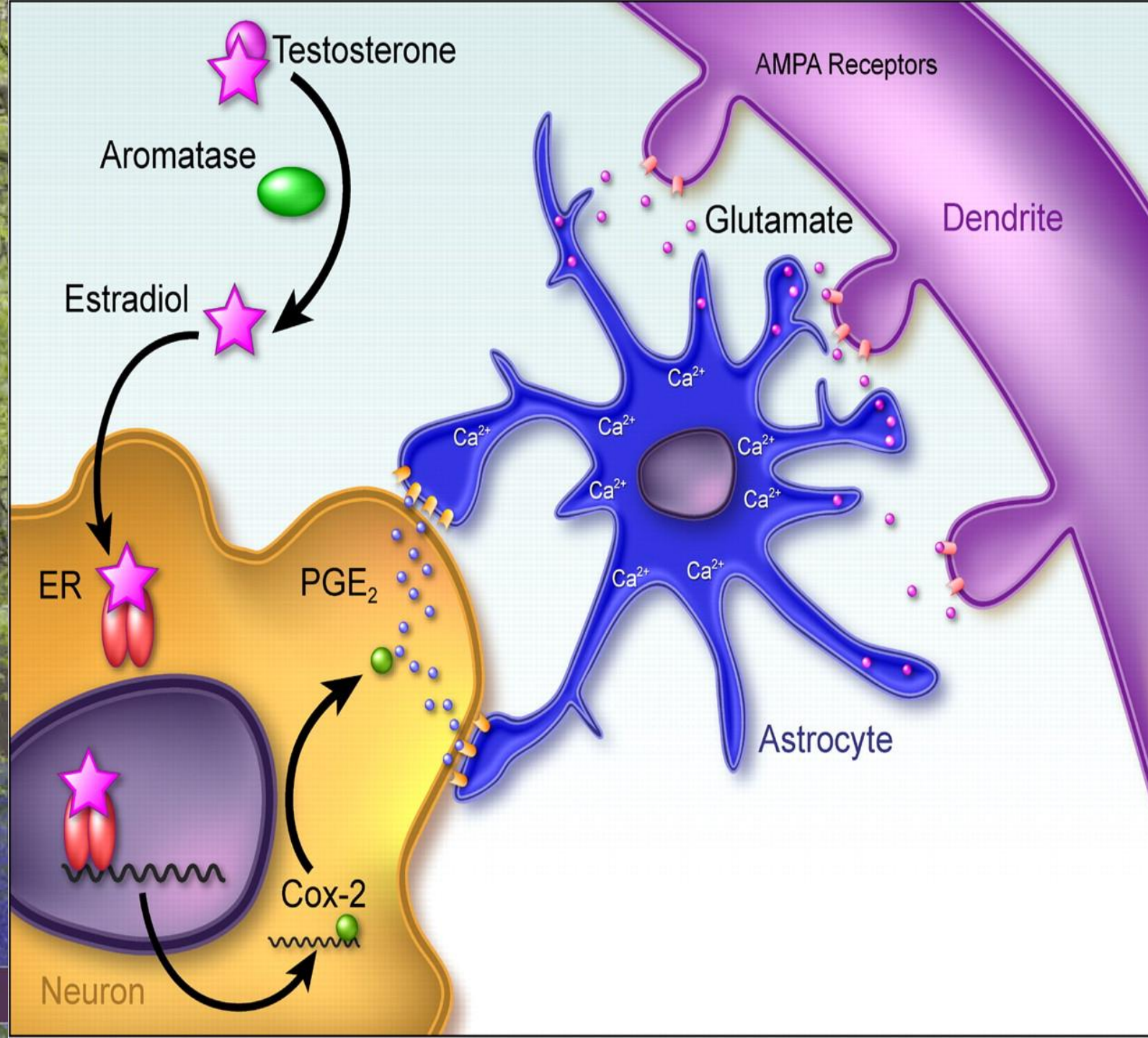


**B**



"Scientists hypothesize that a combination of genetic, hormonal and social factors determine sexual orientation. These factors [...] include genes, prenatal hormones, and brain structure."

whisper

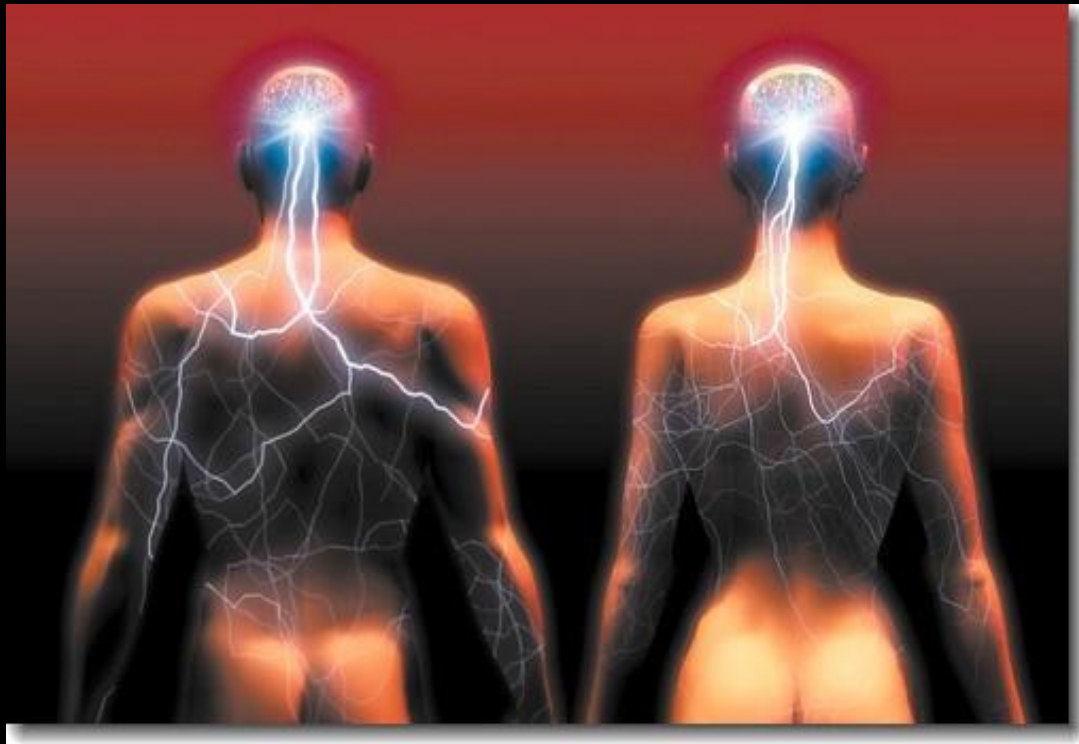




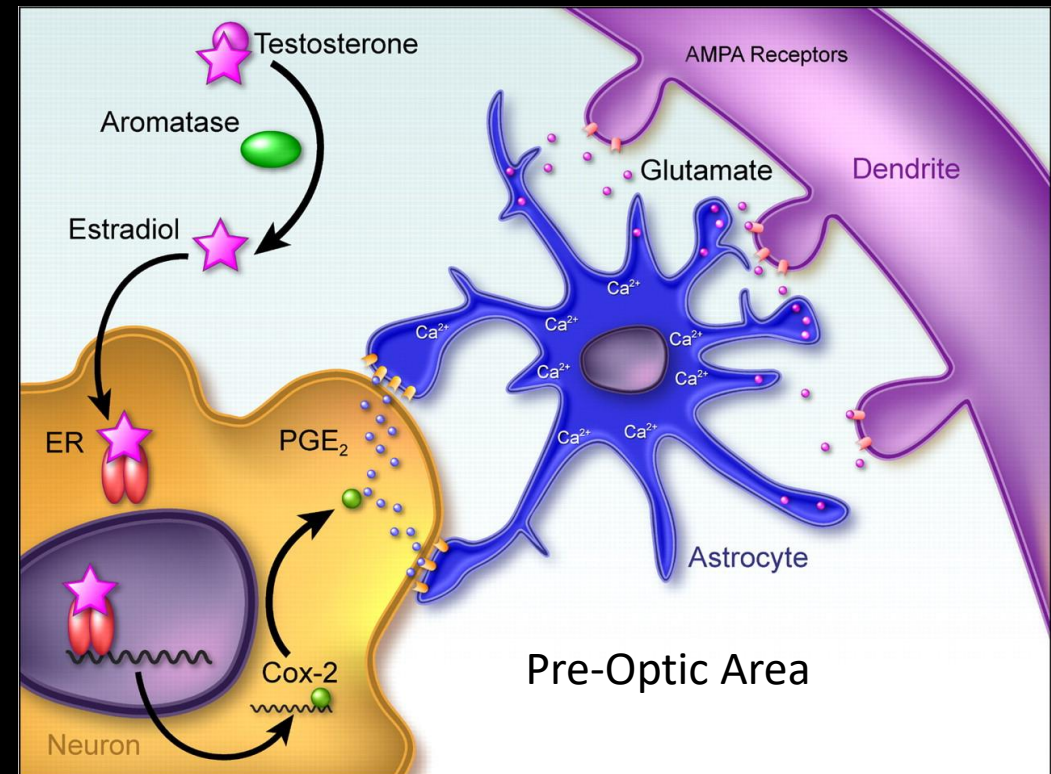
At 6-12 weeks IUP testosterone and conversion to DHT : responsible for formation of penis, prostate gland ; scrotum. In the absence of T or DHT female genitalia will develop instead

Brain development does not occur in full definition until the second half of pregnancy after genitals have developed Male brain has subtle but critical differences from Female brain

## Testosterone-DHT - E2

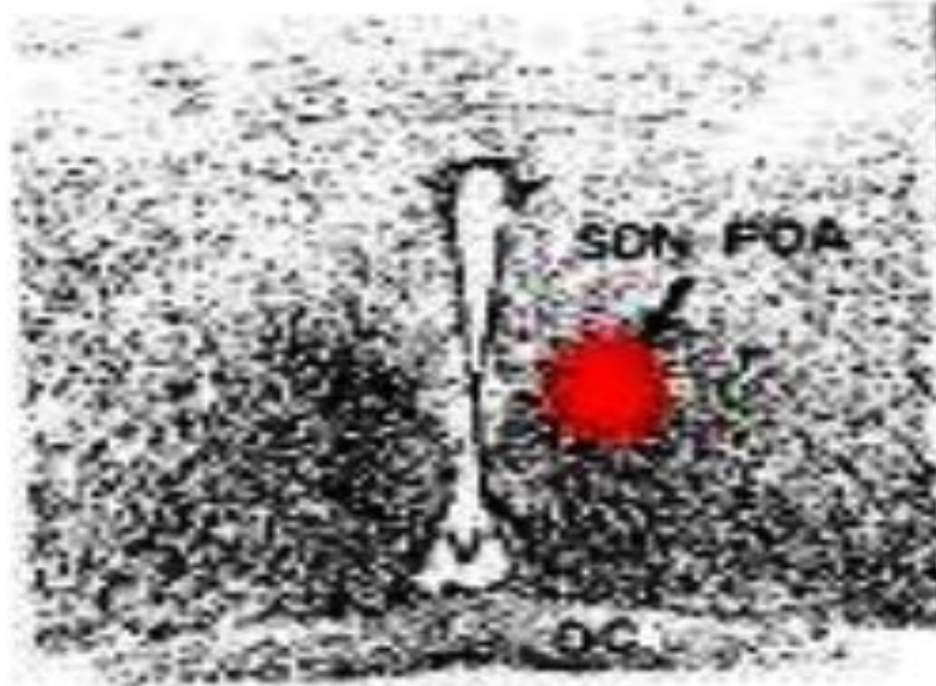
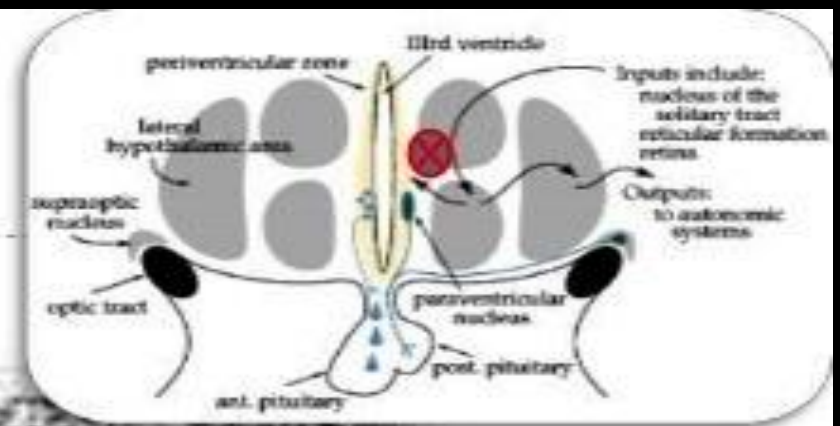


## Effect on dendrite arborization (male)

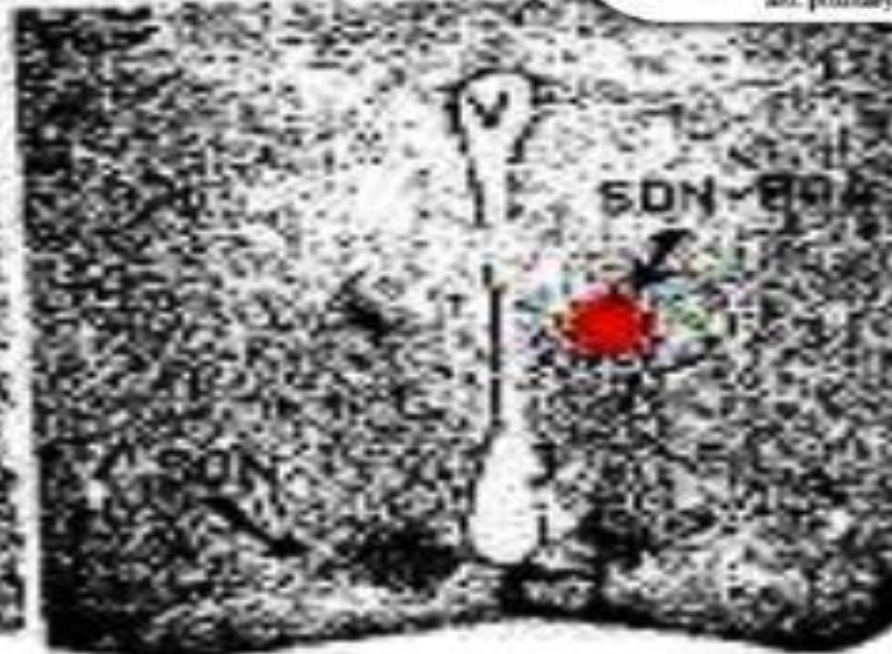


# The SDN-POA nucleus

Núcleo sexualmente dimórfico



Normal male



Normal female

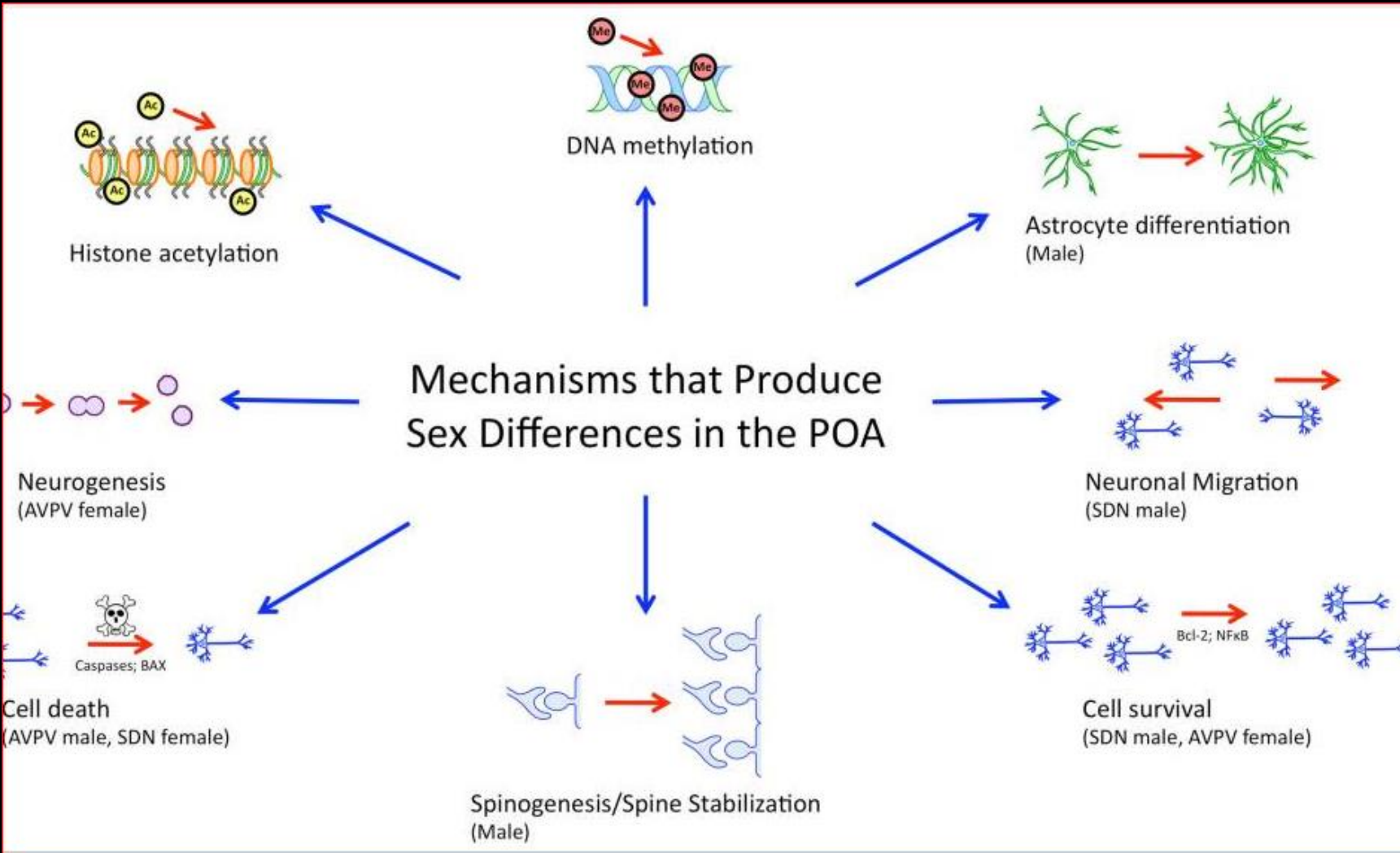
Male  
SDN-POA  
is 2 to 3  
times  
larger  
than  
female  
SDN-POA

Variation in size of the SDN-POA

- The Sdn-poa Area In The Human Brain: A Comparative Morphometric Study, Michel A. Hofman And Dick F. Swaab



The fact that brain and the genitalia develop at different times in gestation  
there is **the possibility** that a **misalignment** between genitals and brain can  
take place

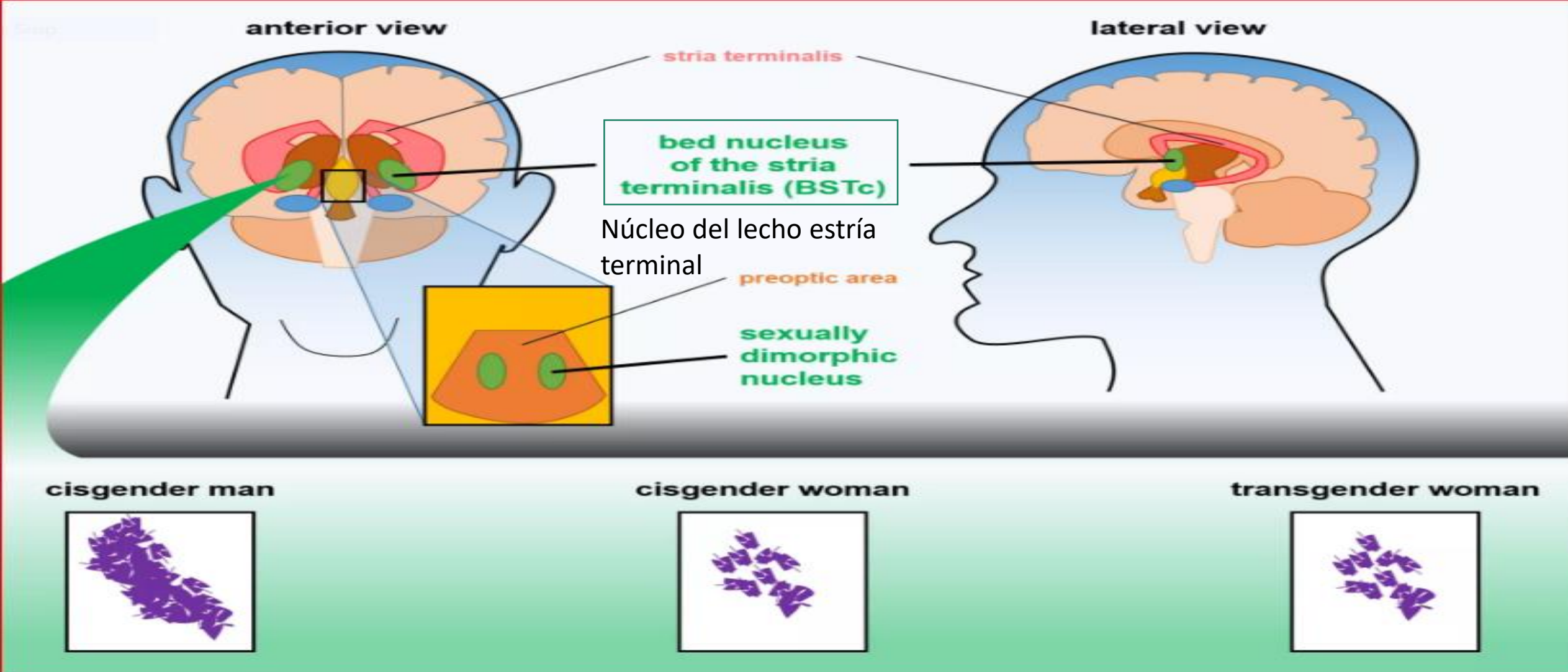


# Neurobiologic Basis for Transgender?

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- **Dimorphic brain structures (human)**
  - **Sexually dimorphic**
    - Cell groups preoptic & anterior hypothalamic areas
      - » INAH-1,-2,-3
    - Suprachiasmatic nucleus
    - Bed nucleus of the stria terminalis (BSTc)
    - Anterior commissure
    - Right putamen
  - **Sexual orientation dimorphic**
    - INAH-3
  - **Gender dimorphic?**





**Figure 2:** Transgender women tend to have brain structures that resemble cisgender women, rather than cisgender men. Two sexually dimorphic (differing between men and women) areas of the brain are often compared between men and women. The bed nucleus of the stria terminalis (BSTc) and sexually dimorphic nucleus of transgender women are more similar to those of cisgender woman than to those of cisgender men, suggesting that the general brain structure of these women is in keeping with their gender identity.

## Sexual dimorphism in olfactory signaling

[Lisa Stowers<sup>a</sup>](#) and [Darren W Logan<sup>b</sup>](#)

[Author information ►](#) [Copyright and License information ►](#)

AND\*



\*14,16 androstandien 3 one  
Male sweat; saliva; semen



Sexual arousal in  
heterosexual women  
Positive mood  
ACTH-Cortisol

EST  
Estrogen derivative  
from urine in  
pregnant women





# Anterior Hypothalamus Is Activated by Sex Pheromones

Feromona

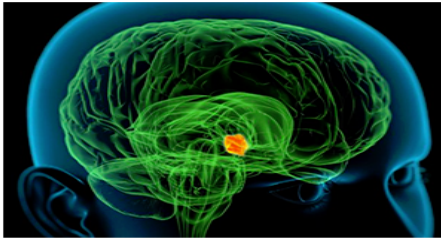
- Positron emission tomography (PET scans) of anterior hypothalamus while subjects smell sex pheromones

Subject	Activation of anterior hypothalamus
Heterosexual males	EST
Homosexual males	AND
Heterosexual females	AND
Homosexual females	EST

AND = progesterone derivative 4,16-androstadien-3-one

EST = estrogen-like steroid estra-1,3,5(10),16-tetraen-3-ol (EST)

# Kisspeptin Expression in the Human Infundibular Nucleus in Relation to Sex, Gender Identity, and Sexual Orientation



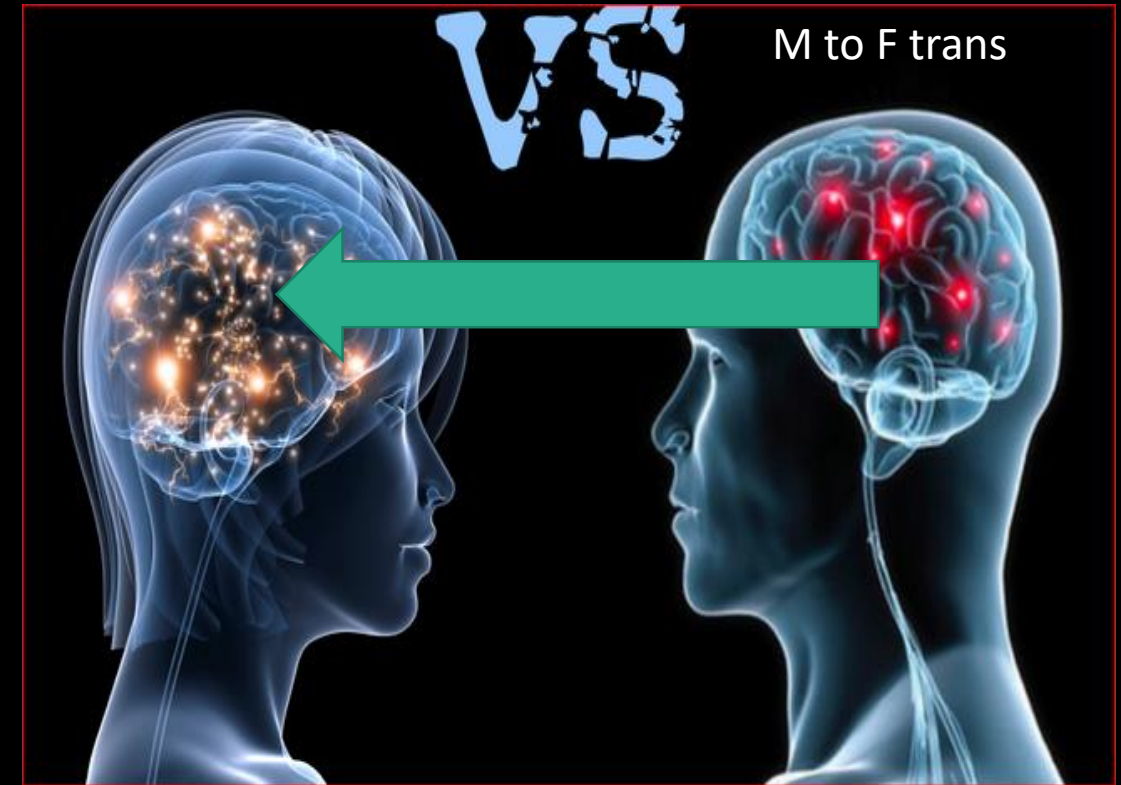
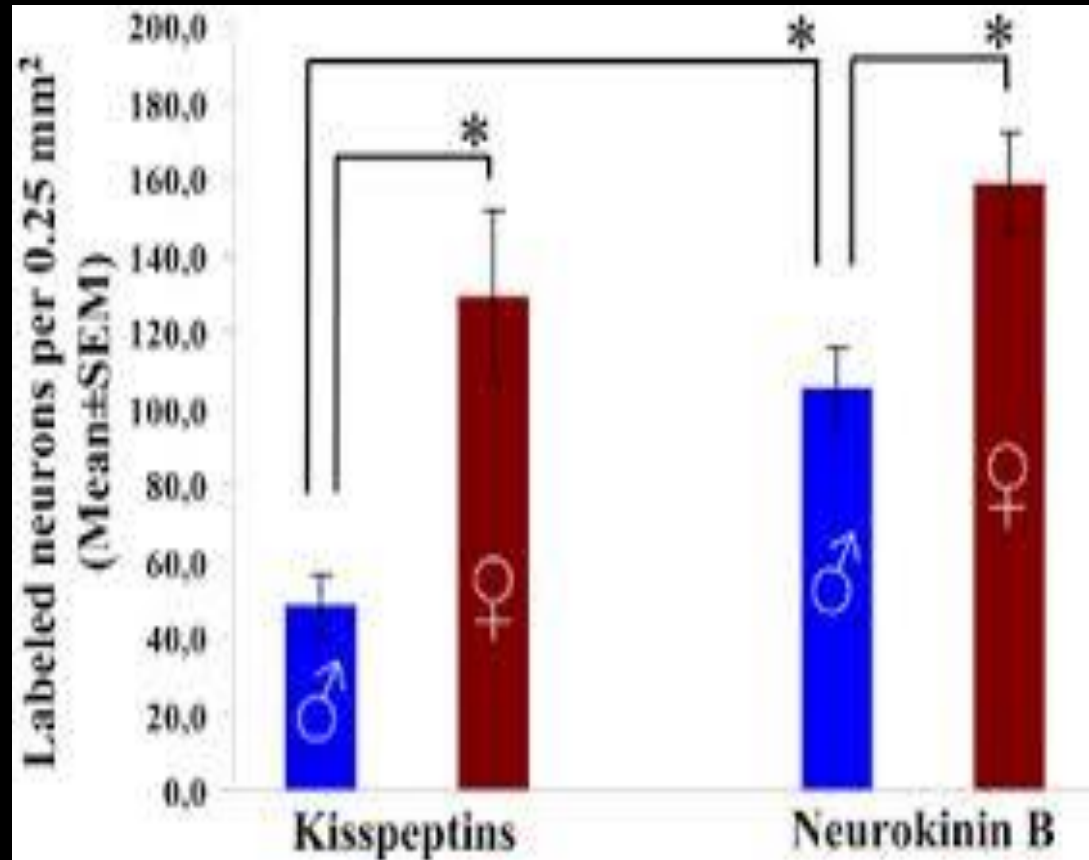
09/06/2016

## CONTEXT:

Since the discovery of its central role in reproduction, our functional neuroanatomical knowledge of the hypothalamic kisspeptin system is predominantly based on animal studies. Although sex differences in kisspeptin expression have been shown in humans in adulthood, the developmental origin of this sex difference is unknown.

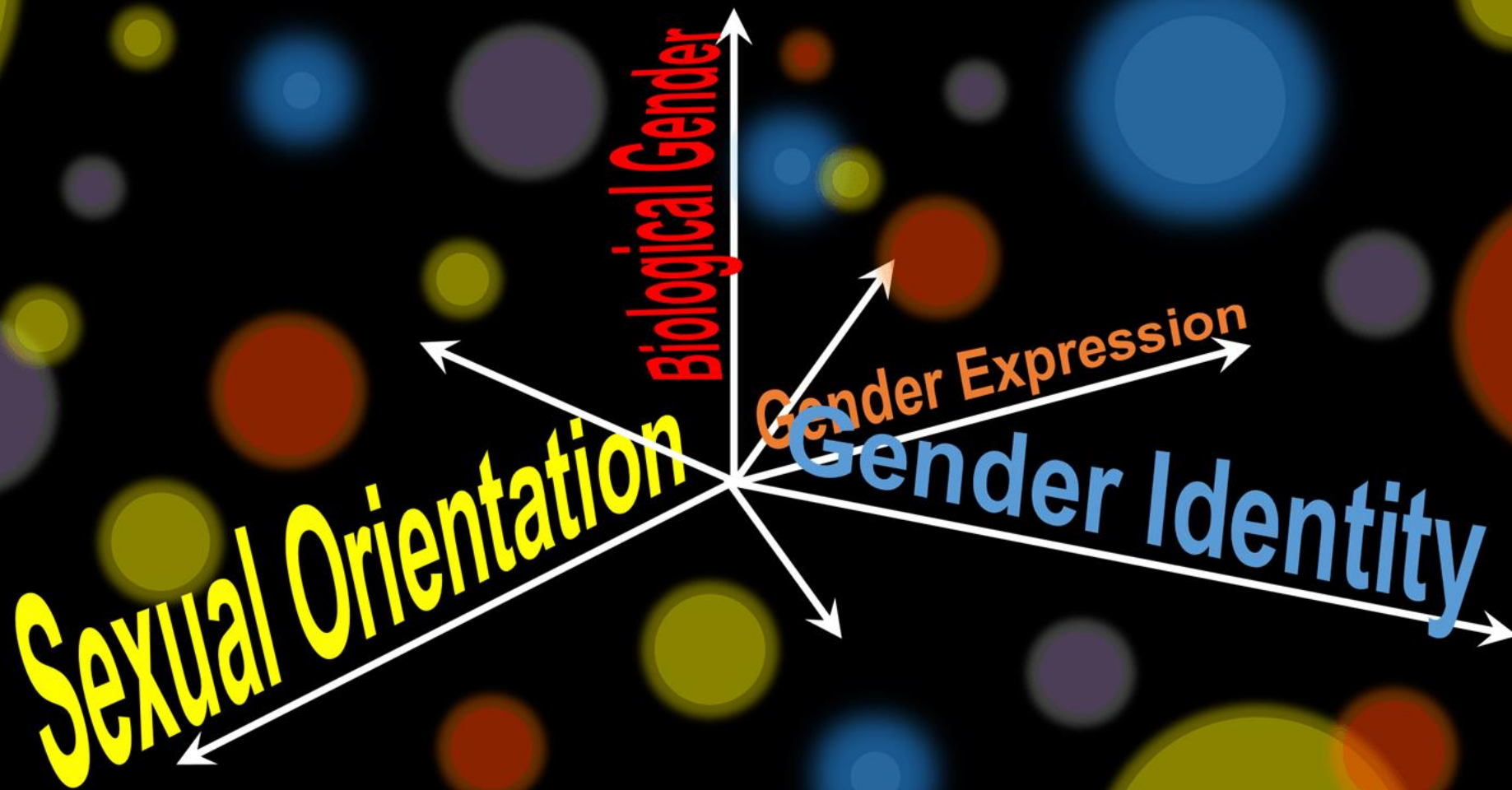
## OBJECTIVES:

Our objectives were to determine the following: 1) when during development the sex difference in kisspeptin expression in the infundibular nucleus would emerge and 2) whether this sex difference is related to sexual orientation or transsexuality.



**CONCLUSIONS:** These findings suggest that infundibular kisspeptin neurons are sensitive to circulating sex steroid hormones throughout life and that the sex reversal observed in MTF transsexuals might reflect, at least partially, an atypical brain sexual differentiation.





# Definitions

Term	Definition
<b>Sex</b>	biological sex, XX or XY
<b>Gender Identity (Affirmed gender)</b>	person's sense of being men, women or indeterminate
<b>Gender Role</b>	behaviors, attitudes and traits that a society designates as masculine or feminine
<b>Sexual Orientation</b>	is the sex to whom one is attracted sexually
<b>Sexual Identity</b>	sex regarded by himself or herself



# HORMONES & GENDER IDENTITY

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- Insights from:

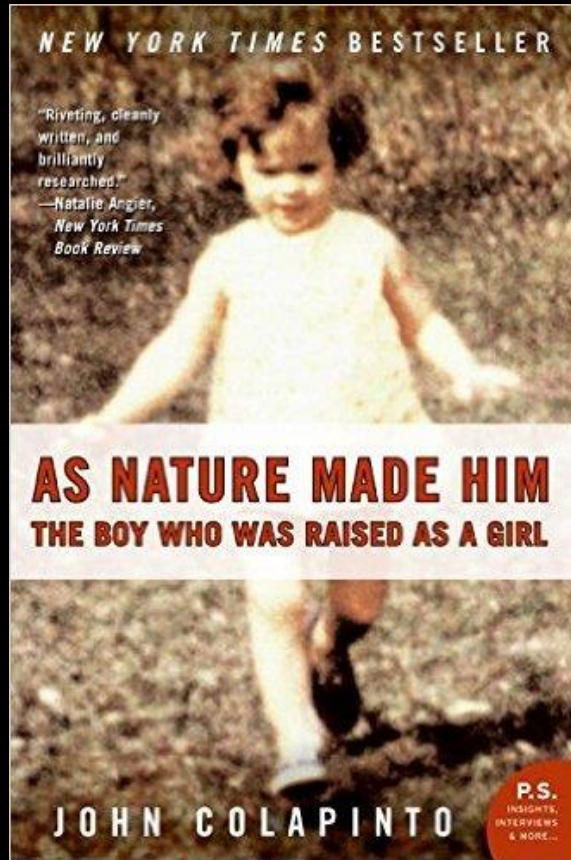
- **Congenital Adrenal Hyperplasia (CAH)** XX females predominate heterosexual orientation

- **Variety of other hormonal, non-hormonal DSDs (46XY)**

- **5  $\alpha$ -reductase-2 deficiency** XY raised as girls, at puberty predominate male heterosexual behavior
- **17  $\beta$ -HSD-3 deficiency**
- **Complete Androgen Insensitivity** Female heterosexual (XY)
- **Cloacal exstrophy** AACE 2017

# Gender Identity is Programmed at Birth (social factors have influence)

- Case of John –Johan-John (XY)



Lost penis at 8 months and raised as a girl



Feeling male, as he was born, transitioned  
back to male at age 14.  
Attempted marriage. Failed . Suicide at age 38

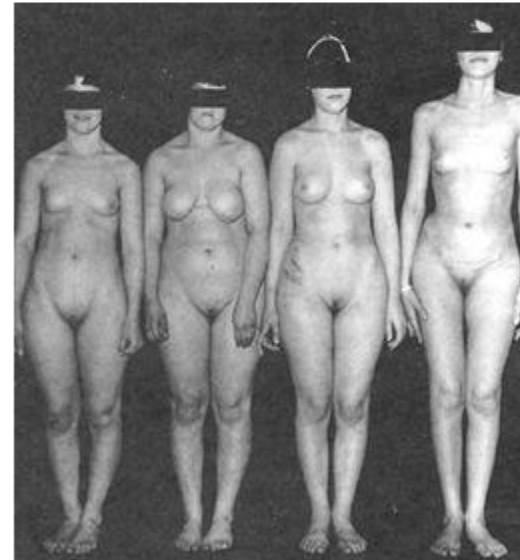
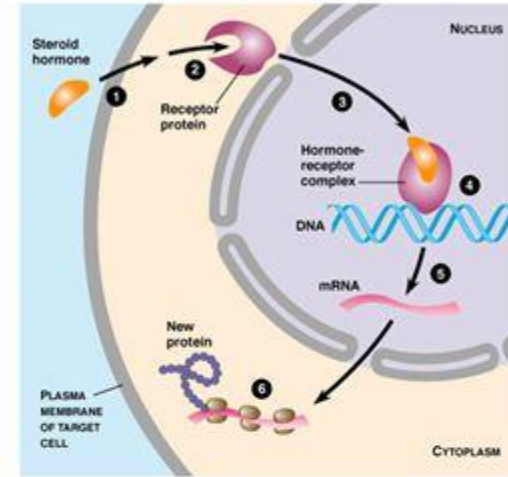


# Androgen Insensitivity

Complete Androgen Insensitivity Syndrome  
2-5/100,000

Tend to be sexually oriented toward men despite XY karyotype

- Incidence about 1 in 20,000 births
- Used to be called “testicular feminization”. 46,XY with normal (undescended) testes. The testes secrete testosterone, but the cells lack a receptor for it. No receptor = no response to the hormone. Complete androgen insensitivity, CAIS.
- As a result, the male ducts (vas deferens, epididymus, seminal vesicles) are not present. However, the testes secrete MIS, which causes the female ducts (uterus, fallopian tubes, upper vagina) to degenerate.
- External genitalia develop as male if DHT is present, but testosterone and DHT use the same receptor. So, female external genitalia, including the lower 2/3 of the vagina.
- At puberty, the testes again secrete testosterone. The enzyme aromatase converts it into estradiol. Thus, female secondary sexual characteristics develop. Often “voluptuously feminine”. No menstruation of course: no ovaries and no uterus. Pubic and armpit hair is usually scant or absent.
  - Occasionally, the undescended testes can become cancerous, so they are often surgically removed after puberty is complete (so as to get normal female development).



## 5 alpha reductase deficiency



Guevedoces

XY karyotype

Usually a baby girl with a large clitoris

At puberty clitoris enhances;  
testes descend, develop  
masculine features

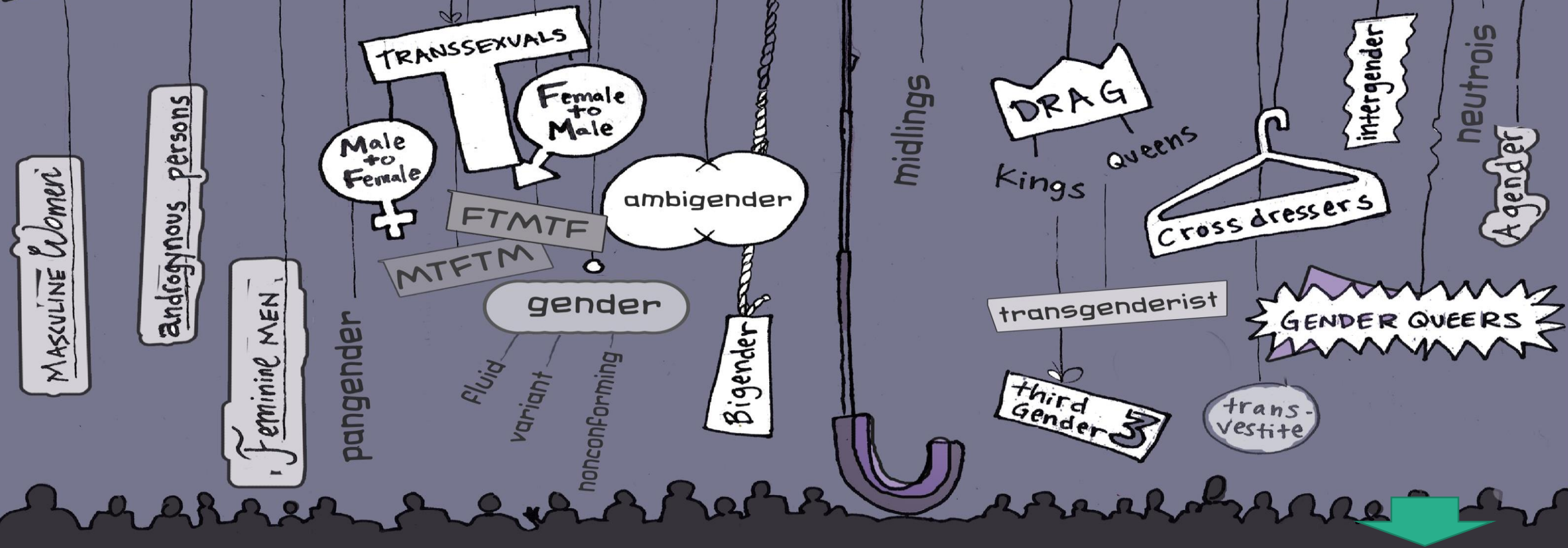
Even when raised as girls more  
than 60% become heterosexual  
males

This would tend to indicate that  
testosterone more than DHT is  
responsible for the organizational  
brain



# TRANS GENDER UMBRELLA

Gender Identity differs to a varying degree from the sex assigned at birth



What does transgender mean? What do all these different identities have in common?

An element of crossing over or challenging binary gender roles or expectations.

Transsexual:\*

Gender identity that is inconsistent with the individual's assigned sex

A desire to transition permanently to the gender with which he/she identifies ( ICD-10)

\* DSM-5 replaced with Gender Dysphoria



Persistent presence of transsexual identity for at least 2 years

Usually early in adolescence

And that is not a symptom of another mental disorder (schizophrenia)

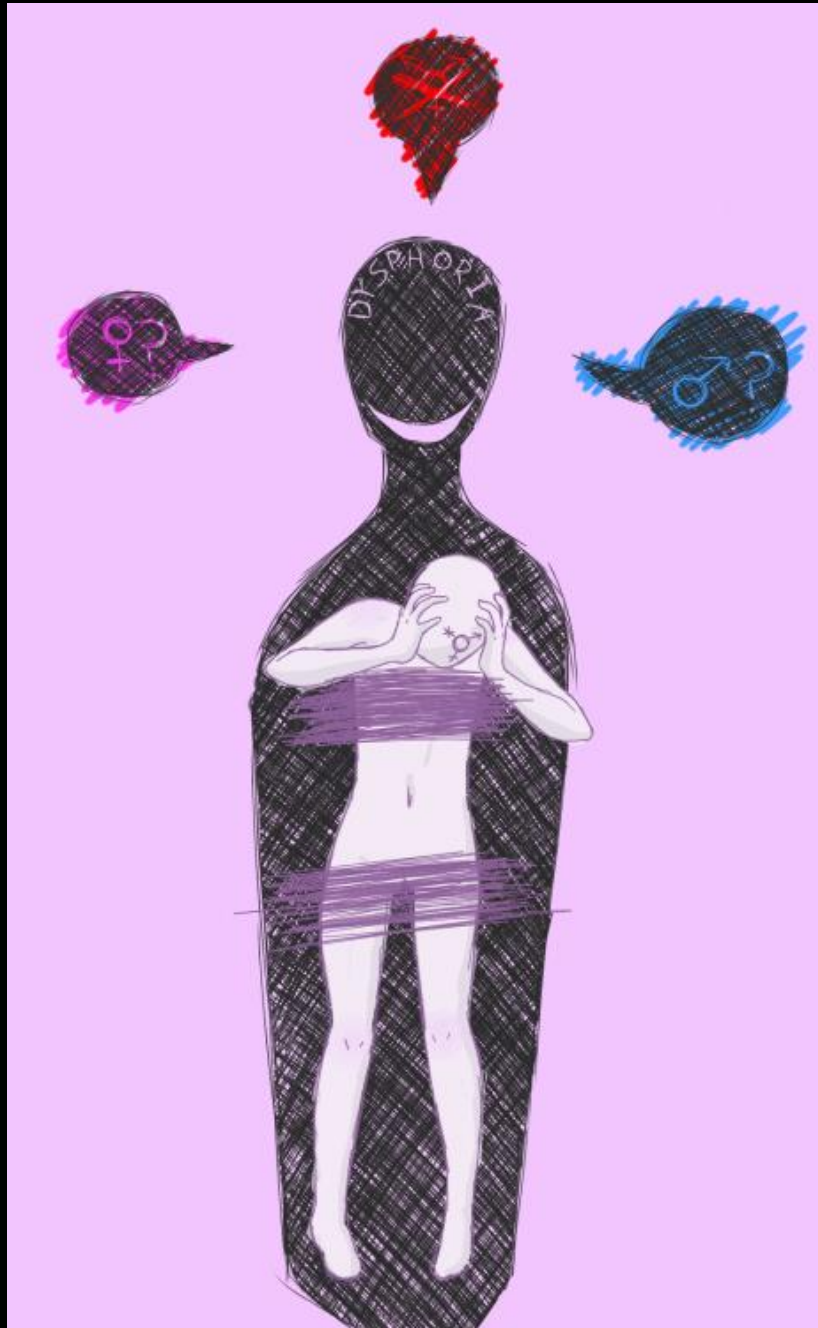
Not associated with chromosomal / receptor defects abnormalities

Emphasis that this is not a disease



## Gender Dysphoria:\*

Distress and  
unease from  
gender identity  
and sex  
incongruence



Condition is  
associated with  
clinically significant  
distress or impairment  
in social, occupational,  
and other important  
areas of functioning

\*Diagnostic and Statistical Manual of Mental Disorders



**\*Transwomen: M to F**

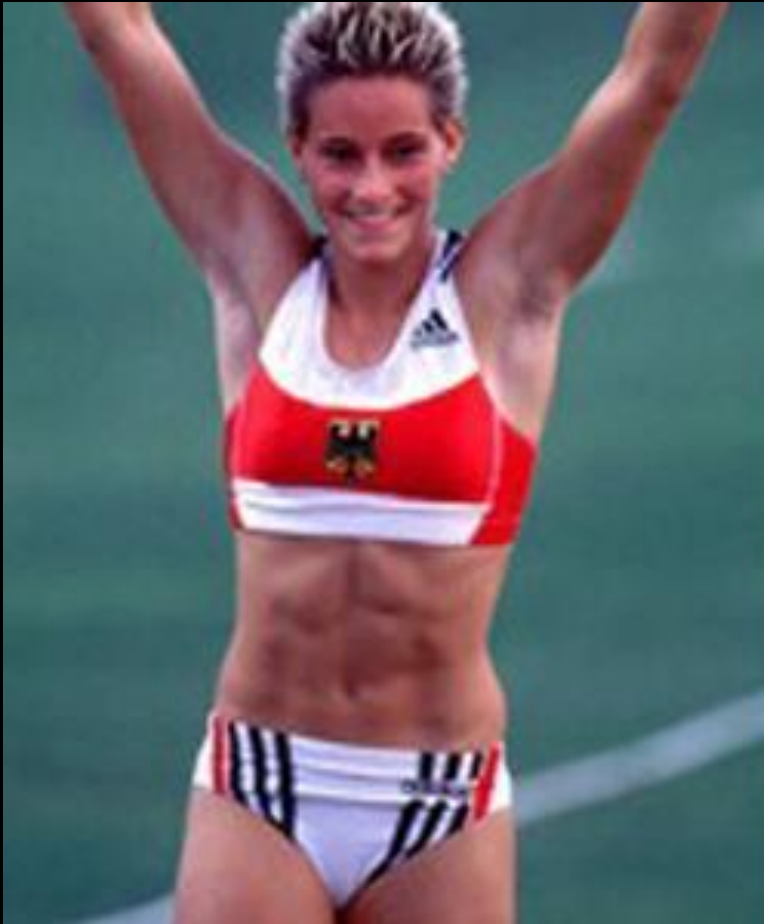
**Assigned male gender at birth (XY)**

**Affirm a feminine identity**

**Use medical and or surgical means to physically transition**

**\*Transman ( Female to Male): assigned female sex (XX)at birth who identifies as male**


**Ivonne: 2007 best female  
Vaulter in Germany**



**Balian :after gender reassignment  
surgery 2008**



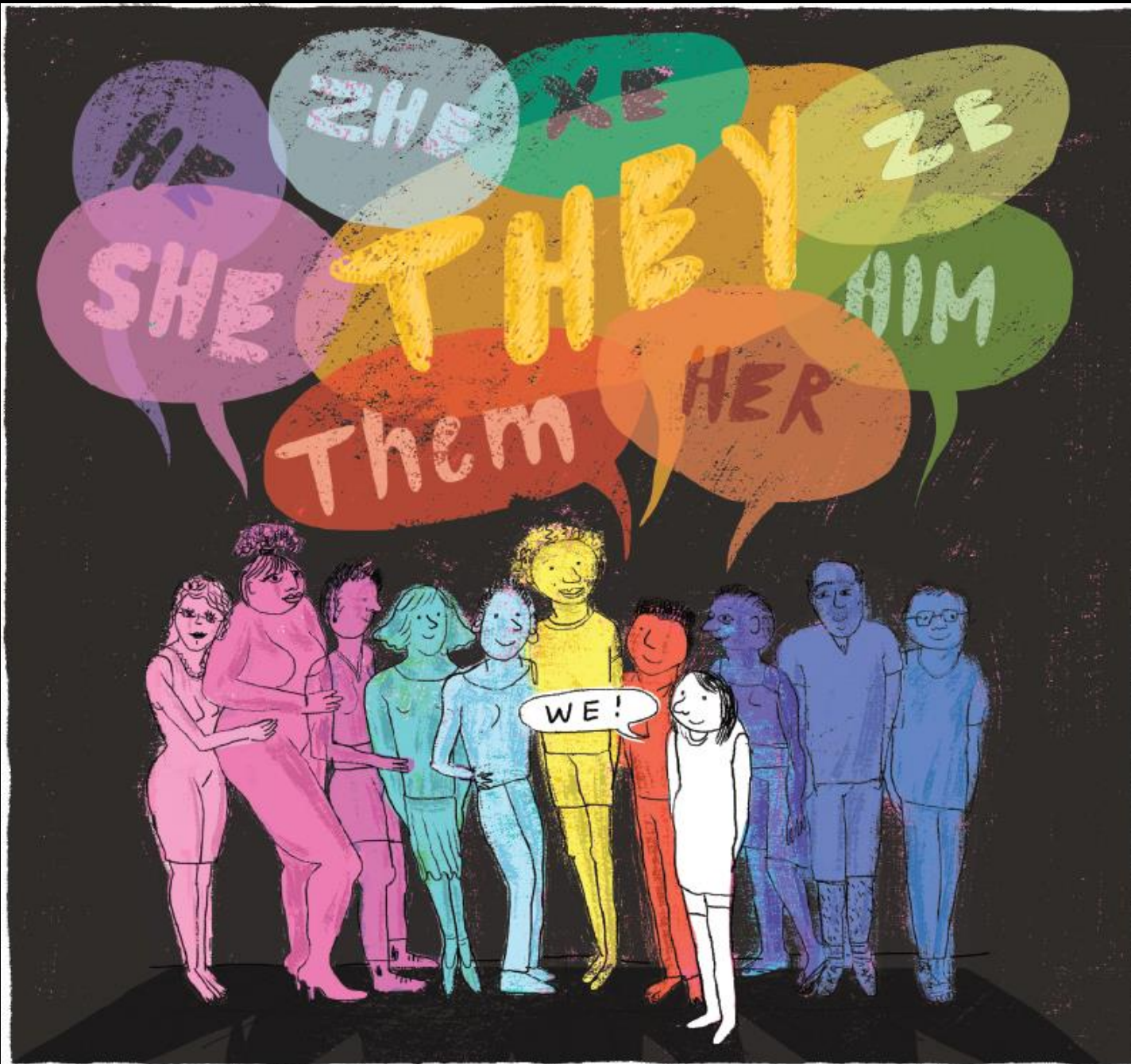


A photograph of a man with a shaved head and tattoos, sitting on a beach. He is wearing blue swim trunks and a gold chain with a dog tag. He is looking down at a magazine on the sand. In the background, there are white beach huts and a blue and red beach umbrella. A text box is overlaid on the right side of the image.

## Transsexual, 44, elects to die by euthanasia after botched sex-change operation turned him into a 'monster'

- Nathan Verhelst, 44, born Nancy, was disappointed with sex-change results
- His life was ended by the same doctor who euthanised deaf twins last year
- Comes after Belgian euthanasia cases jumped 25 per cent in one year
- It is now the cause of nearly one in 50 deaths in the country



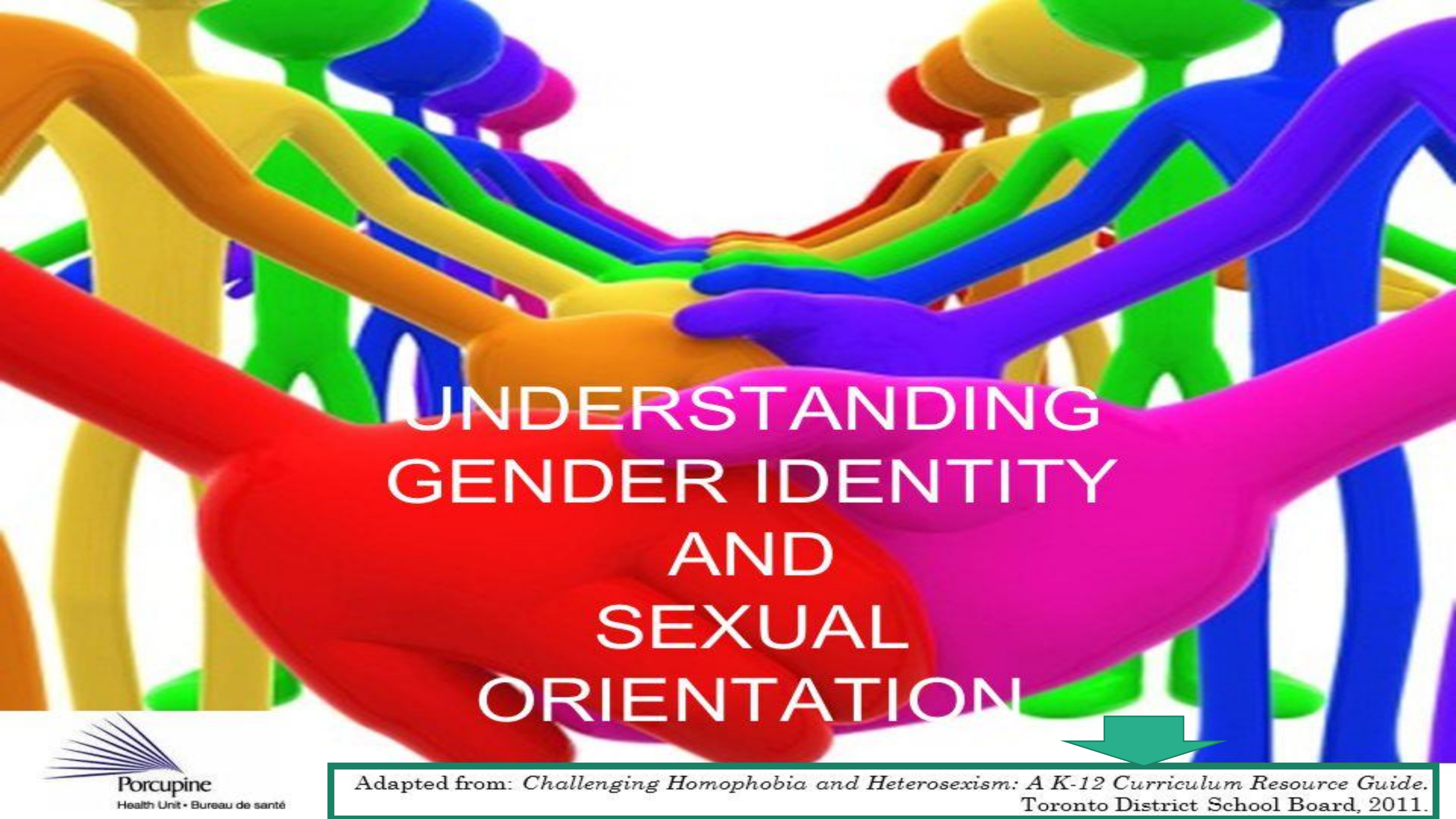


Non-Binary:

Umbrella term  
describing someone  
who does not ascribe  
to male or female

Both  
Neither  
Combination  
“Flow”





# UNDERSTANDING GENDER IDENTITY AND SEXUAL ORIENTATION




# Epidemiology : Transgender Individuals

## **Dutch Population**

- The Amsterdam Gender Dysphoria Clinic
- Prevalence 1 in 10,000 assigned males
- 1-30,000 assigned females
- ( four decades study)
- Archives of Sexual Behavior Netherlands

## **Meta-analysis overall population**

- Overall population:
- 1-20,000 individuals
- 1-15,000 transwomen
- 1-40,000 transmen
- Arcelus et al (Eur Psychiatry 2015)

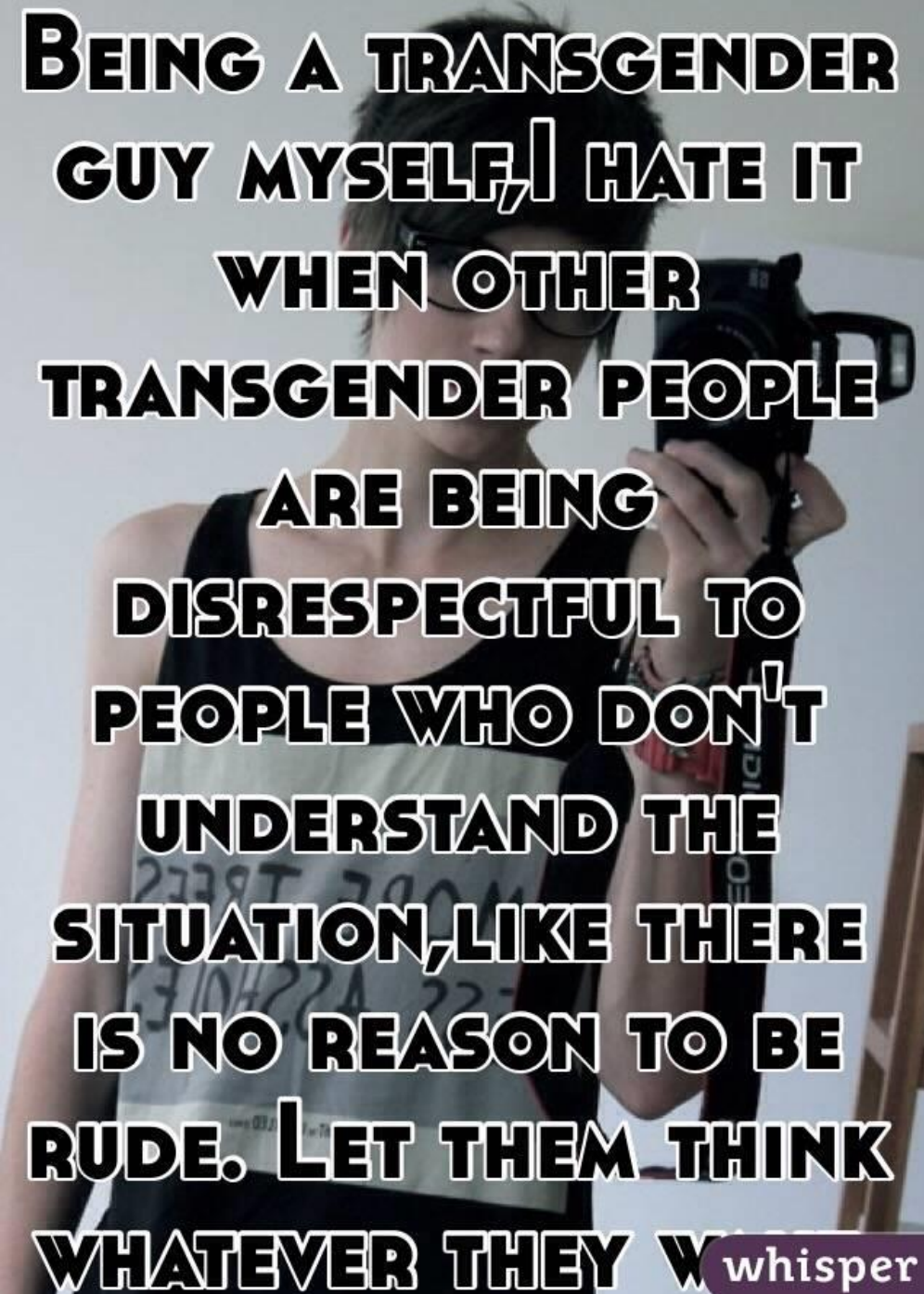


My family keeps say I  
think "I'm better than  
everyone" because don't  
talk and hate to be  
touched.

I'm transgender ftm I  
hate my body and want  
to die.

whisper

**HATE**

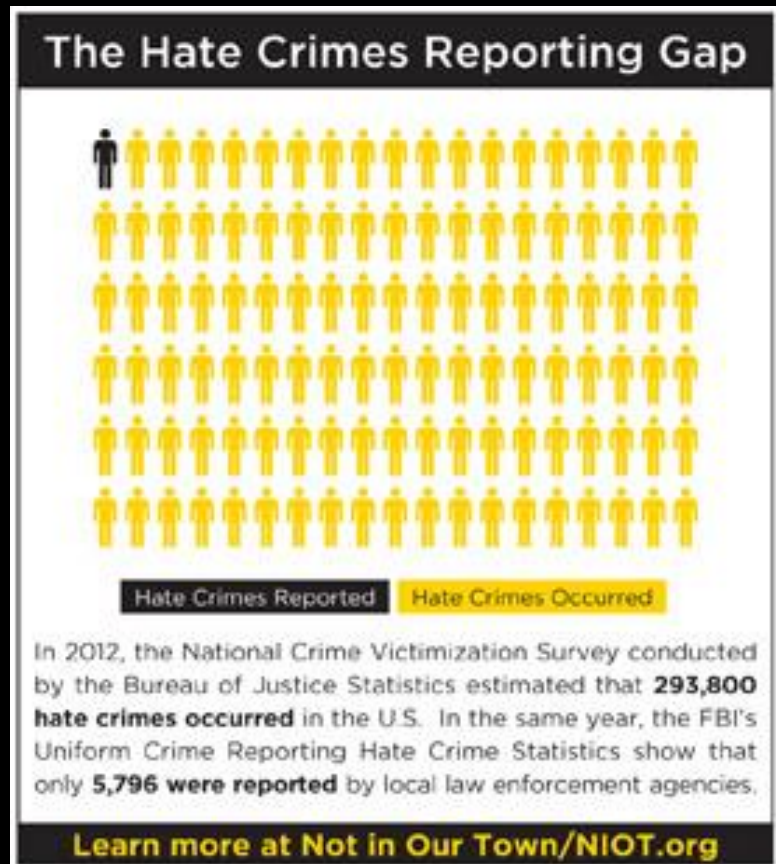


**BEING A TRANSGENDER  
GUY MYSELF, I HATE IT  
WHEN OTHER  
TRANSGENDER PEOPLE  
ARE BEING  
DISRESPECTFUL TO  
PEOPLE WHO DON'T  
UNDERSTAND THE  
SITUATION, LIKE THERE  
IS NO REASON TO BE  
RUDE. LET THEM THINK  
WHATEVER THEY W**

whisper

# Hate Crimes Statistics

## Crimes



## Reported cases



On February 12, 2008, Lawrence King of Oxnard, California was shot and killed by a classmate because he liked to wear girls' clothes. He was 15 years old.



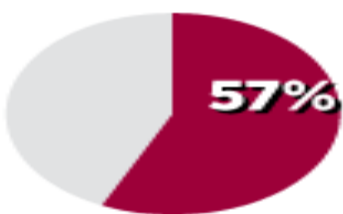
**Table 12: Lifetime suicide attempts by gender identity and mental health disability**

Gender Identity	Have Attempted Suicide	
	MH Disability	No MH Disability
Trans Women / MTF	360 (67%)	891 (37%)
Trans Men / FTM	263 (67%)	559 (40%)
Cross-dresser (male-assigned)	39 (54%)	108 (17%)
Cross-dresser (female-assigned)	27 (56%)	57 (40%)
GNC / Genderqueer (male-assigned)	18 (62%)	43 (33%)
GNC / Genderqueer (female-assigned)	82 (59%)	130 (29%)

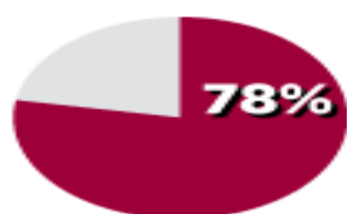
# Transgender statistics

The National Transgender Discrimination Survey was released in 2011 and surveyed more than 6,000 transgender people in the United States. A follow-up survey is currently being conducted and will be released sometime in 2016.

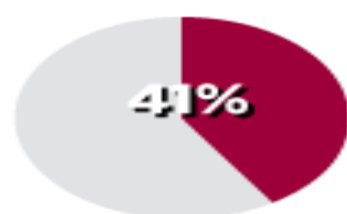
## Transgender population



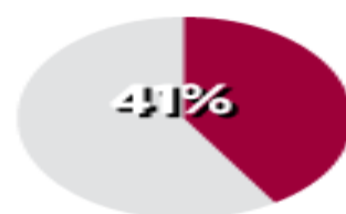
Experienced significant family rejection



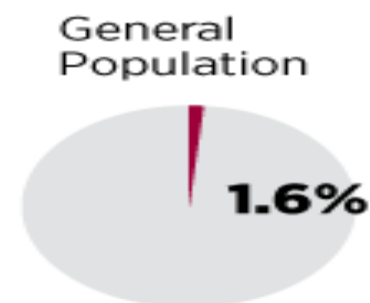
Felt more comfortable after transitioning



Have IDs that don't match their gender identity



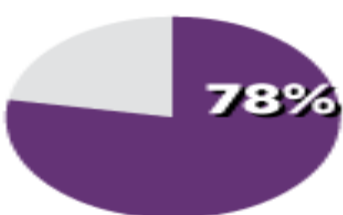
Reported attempting suicide



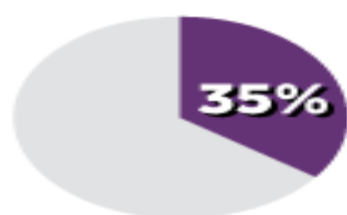
General Population

Attempted suicide

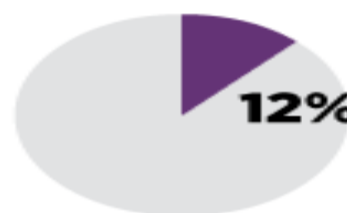
## Transgender students (K-12)



Reported being harassed



Reported being physically assaulted



Reported sexual violence



Harassment led to leaving school, either in K-12 or higher education

Published in 2011, there were 6,456 valid responses to the 70-question survey. The survey did not use statistical testing and does not establish the statistical significance of the claims.

## Pilot Clinic: Results of Voluntary Training Program

- Staff showed significant reduction in negative attitudes toward transgender individuals ( $P < .05$ )
- Improved transgender-related clinical skills ( $P < .01$ )
- Awareness of actions that can cause transgender stigma
- Training is not enough. Having a provider with experience in treating transgender individuals could improve communication and clinical skills
- Staff should also get “brief boosters” to sustain knowledge gained.
- Trial of model clinic in other sites and share curriculum and online modules



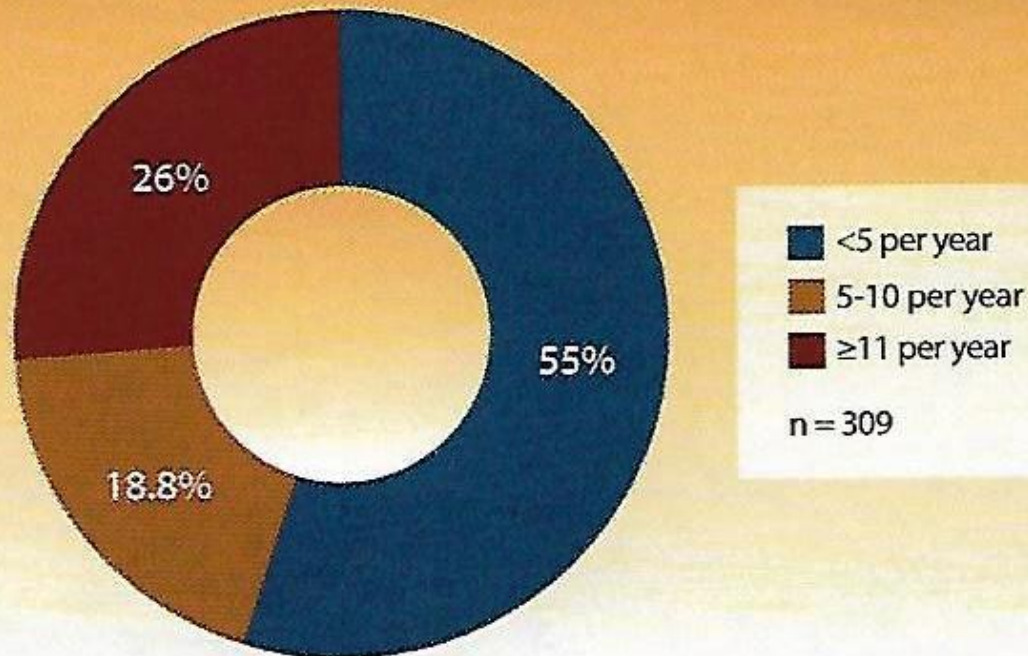
# Many Healthcare Providers Fail Transgender People(National Center for Transgender Equality)

- US survey on transgender people 2015( NCTE)
- Anonymous on line survey 27,000 adults
- 1:5 reported that their healthcare professional tried to stop them being transgender
- Those who had negative experiences more likely to suffer distress; attempt suicide; run away from home; homeless; and engage in sex work than their counterparts that did not had negative experiences.
- Need to improve how medical professionals respond to transgender patients.

# Training Needed in Transgender Care

**Endocrine** today **BY THE NUMBERS**

## Number of transgender patients treated by U.S. Endocrine Society members



Source: Davidge-Pitts C, et al. *J Clin Endocrinol Metab*. 2017;doi:10.1210/jc.2016-3007.

Survey conducted by Davidge-Pitts  
Assess transgender status of healthcare in U.S.  
Endocrinology Training Programs

Only 22 programs provided comprehensive transgender –oriented sexual and social history taking  
14 provided education on systemic physical examination

13 provided education on psychosocial and legal issues.

Common findings:

Lack of interest

Lack of training

Lack of funding

**Need for providers to become competent in the area of transgender medicine.**

## Pilot Clinic Could be a Model to follow: Voluntary Training Program

- Outpatient Clinic in New York (2015) low socioeconomic/income individuals
- 2 hour training sessions with sample scenarios and group discussion
- Overview of transgender identity, stigma, health disparities
- Session for Health Care providers on : transgender care; current guidelines; transitioning; specific screening; hormone therapy ; and long term monitoring
- Staff member role: creating transgender affirmative environment; medical forms ; billing issues; ( including front line-staff) ;
- Psychologist; Psychiatrists; Social workers



# “Primum Non Nocere”

- Our mission as physicians is to help others
- Even one word could have negative impact in the individual that is seeking help
- Stop being judgmental and start being compassionate
- Improve curriculum of training programs to at least sensitize the Health Care Professionals to improve understanding of the transgender and optimize the resources available to help them
- If we do not lead, these individuals will fall into unconscionable individuals with no heart, cold blooded, and delinquents

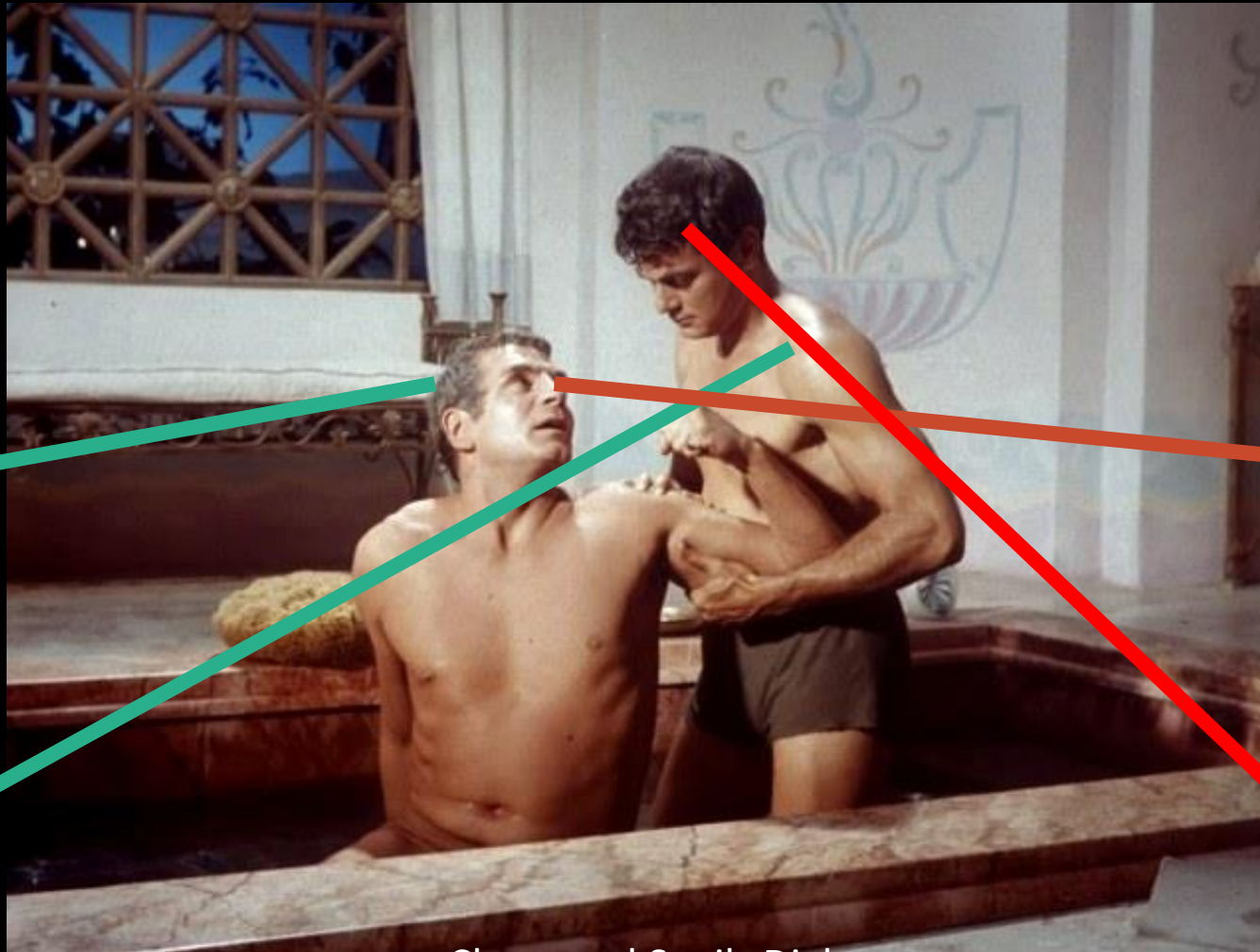
# Spartacus: Bath Scene

Scene was  
taken out in  
1960 when  
film was first  
Shown to the  
public

Do you like  
Clams?



Yes, when  
available



1990's again  
included as it was  
in the original  
version

Do you like snails?



No, Master!!

Clams and Snails Dialogue

# Jamie Lee Curtis

Su padre era un mujeriego

Nadie esta exento

Todos temenos hijos , nietos , familia y amigos

Jamie describe a su padre como lejano  
A pesar de que fue un gran proveedor

Tony Curtis excluyó a Jamie en su testamento

**Jamie Lee Curtis**

- XY male with Androgen Insensitivity Syndrome (AIS)
- resistant to androgens
  - the hormones responsible for male sexual development



**FREAKY FRIDAY**





I hope the next generations will teach us on how to accept that difference is not an obstacle.

Entre mas feo el muñeco mas les gusta



# TRANSFORMERS

## THE LAST KNIGHT

Lo que nos parece raro a  
las nuevas generaciones  
le es cotidiano





Si te cayó una llovizna puedes taparte pero  
no cambiar la realidad.

GRACIAS

