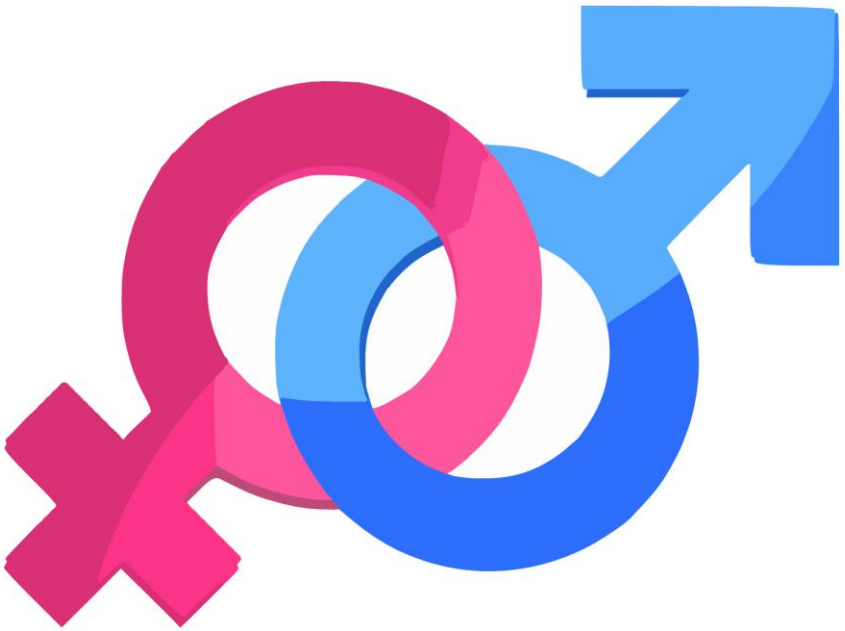
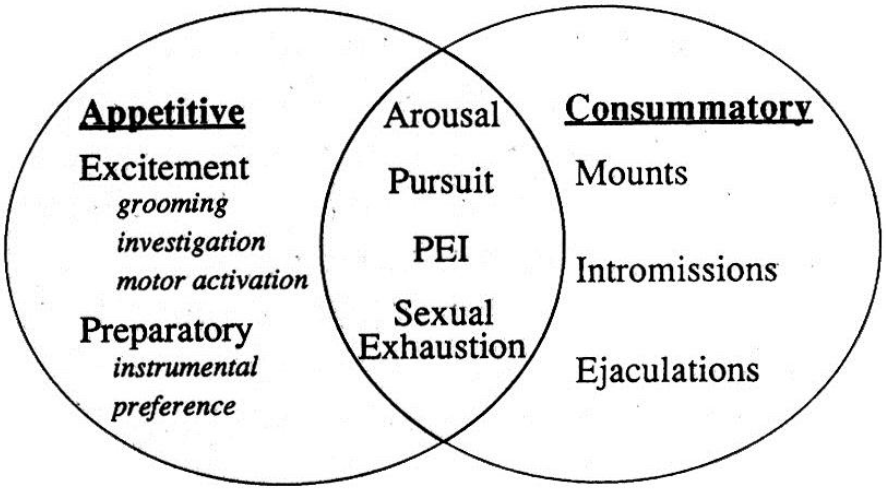
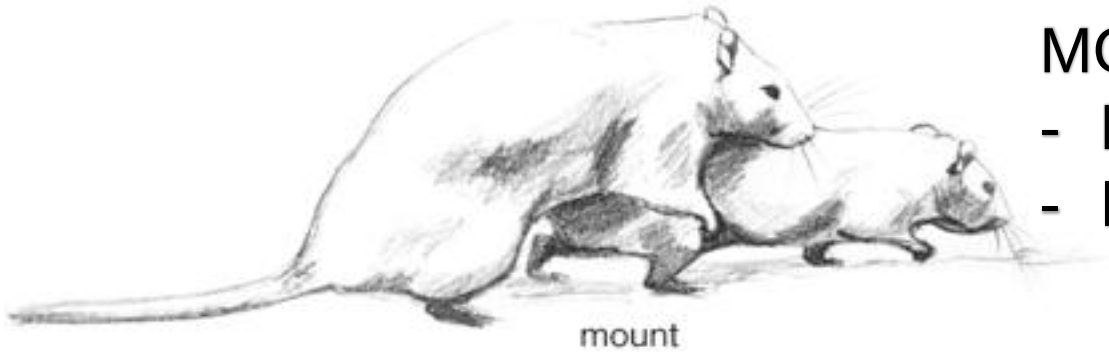
ΣΕΞΟΥΑΛΙΚΗ ΣΥΜΠΕΡΙΦΟΡΑ ΚΑΙ ΠΡΟΣΑΝΑΤΟΛΙΣΜΟΣ

Χριστίνα Δάλλα, Επ. Καθ. Ψυχοφαρμακολογίας, Ιατρική Σχολή, ΕΚΠΑ

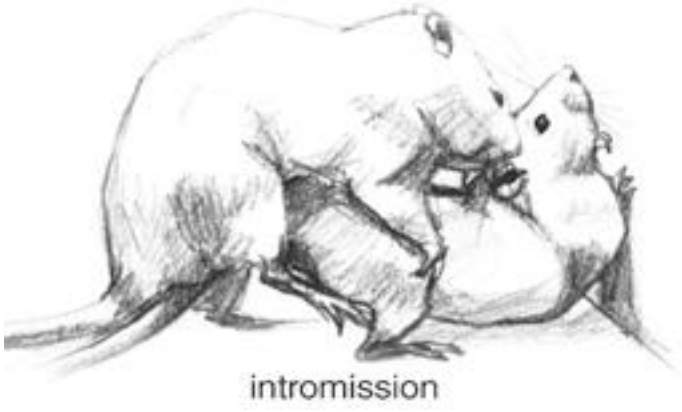




1º appetitive behavior:
Anogenital Investigation



MOUNT
- Mount latency
- Inter-mount interval

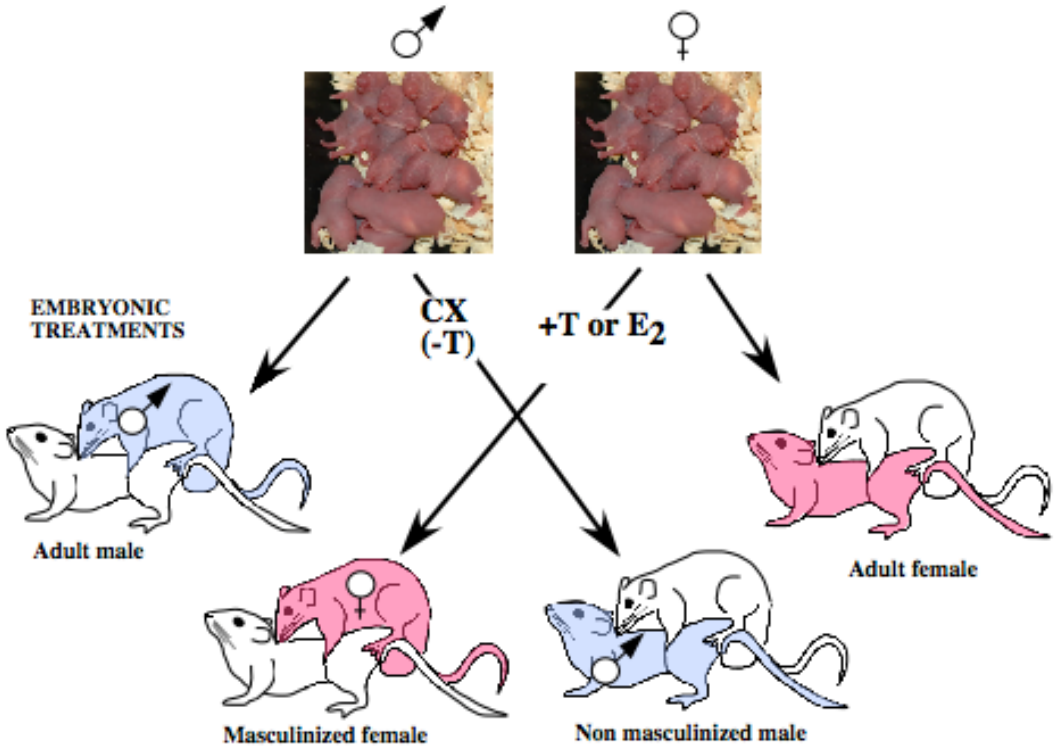


INTROMISSION
- w/ or w/o thrusts
- Species differences
- Inter-intermission interval

EJACULATION
- Deposition of sperm plug
- Ejaculation latency
- Post-ejaculatory interval
- Mating potential (# Ejac)


Anogenital Investigation and Pursuit

Ontogenesis of the differences

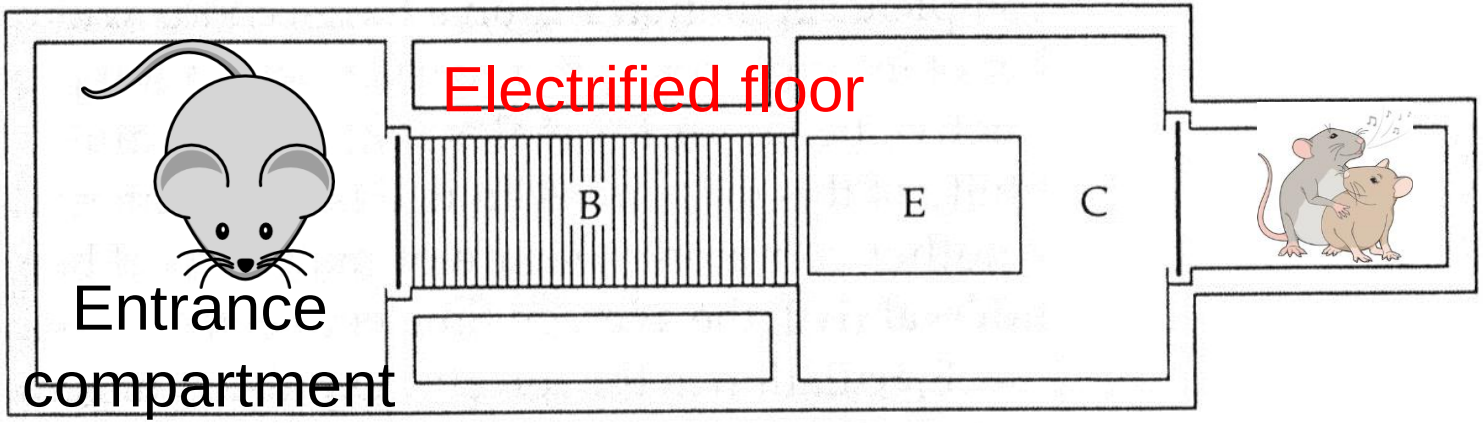


Female behavior (After E_2 + P)	No	No	Yes	Yes
Male behavior (After T)	Yes	Yes	weak	weak

Male phenotype ⟷ Female phenotype

Sexual Motivation

- latency to first mount
- obstruction apparatus
- partner preference/CPP



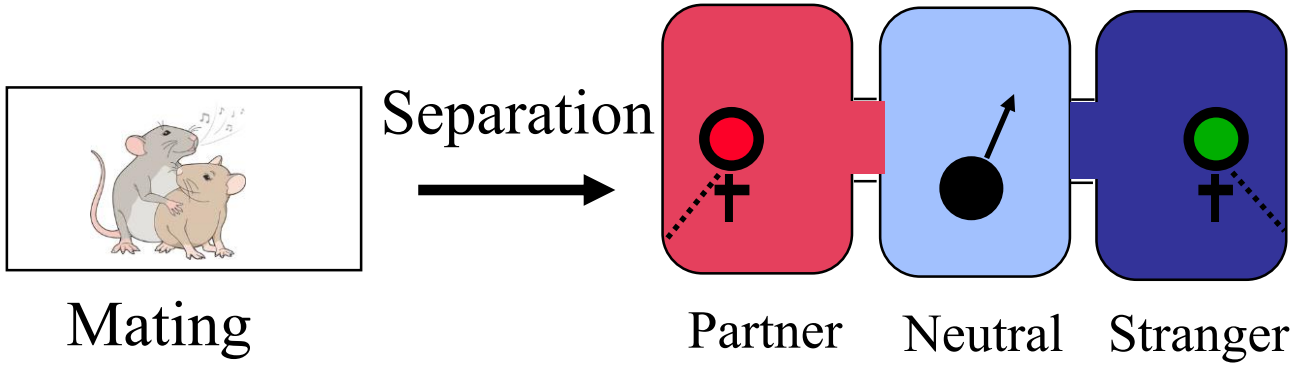
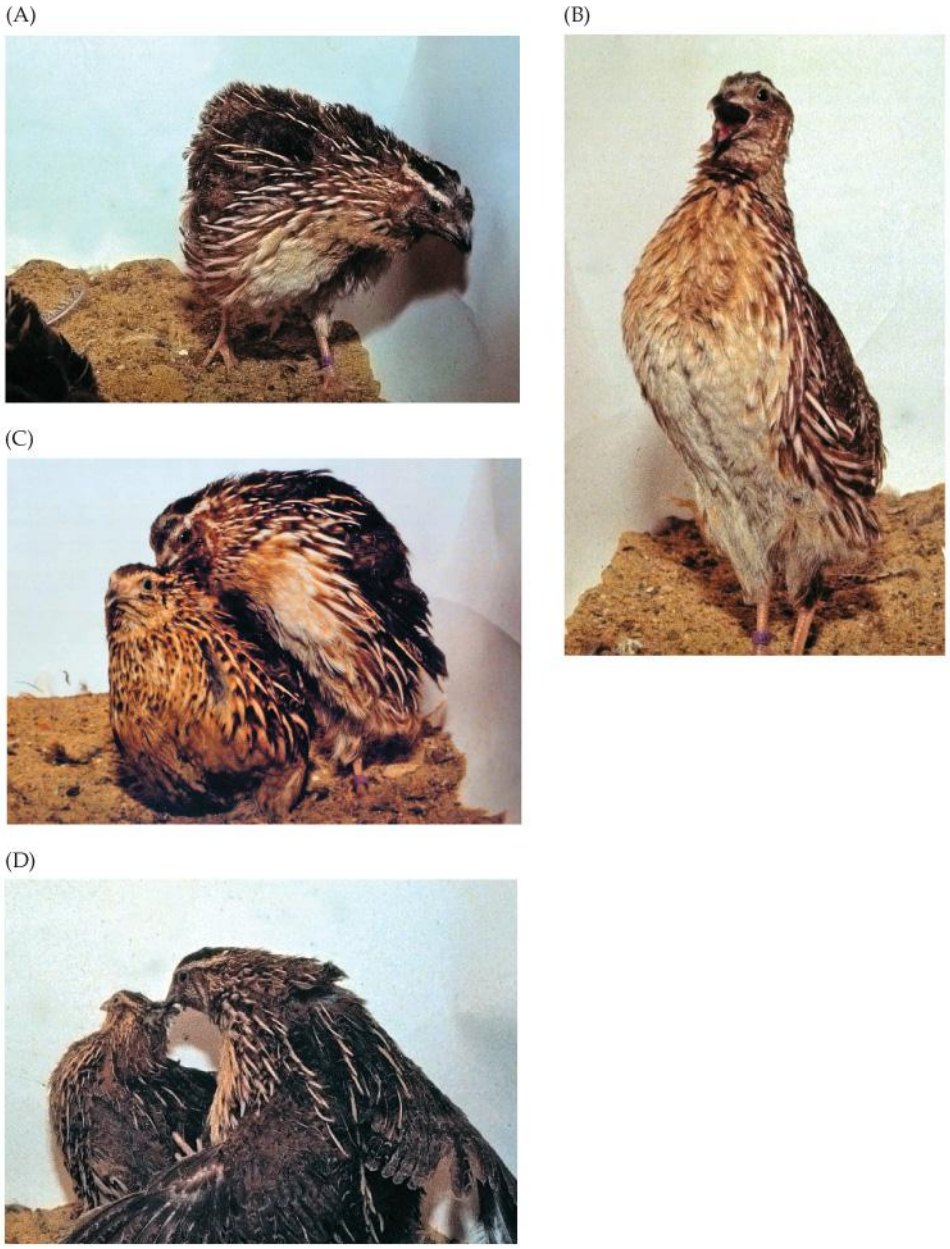


Figure 5.40 Copulation in Japanese quail



AN INTRODUCTION TO BEHAVIORAL ENDOCRINOLOGY 5e, Figure 5.40

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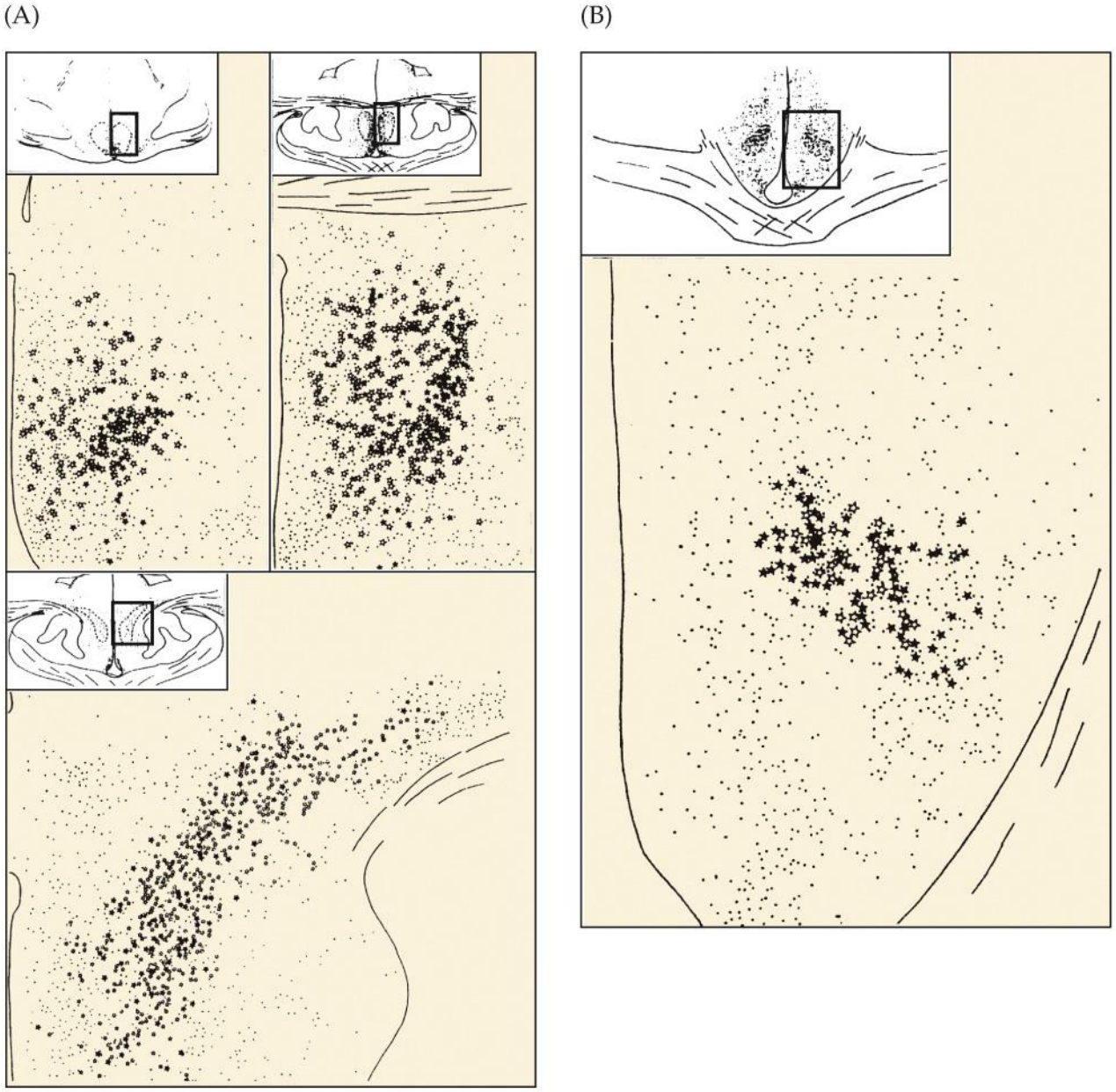
Aromatase and estrogen receptors in the quail brain



AN INTRODUCTION TO BEHAVIORAL ENDOCRINOLOGY 5e, Figure 5.41

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The typical mating posture of nonhuman primates

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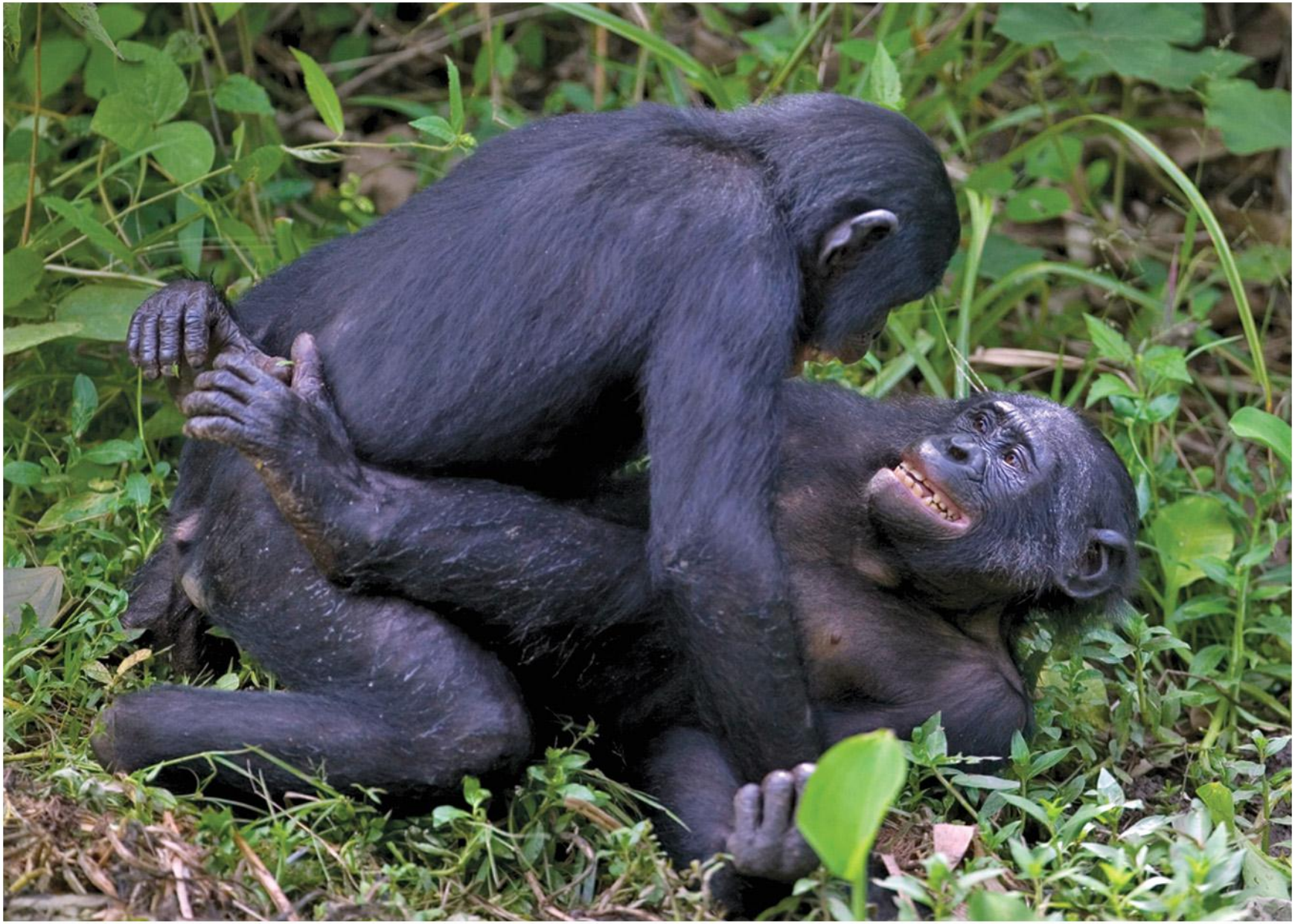
Face-to-face mating of bonobos



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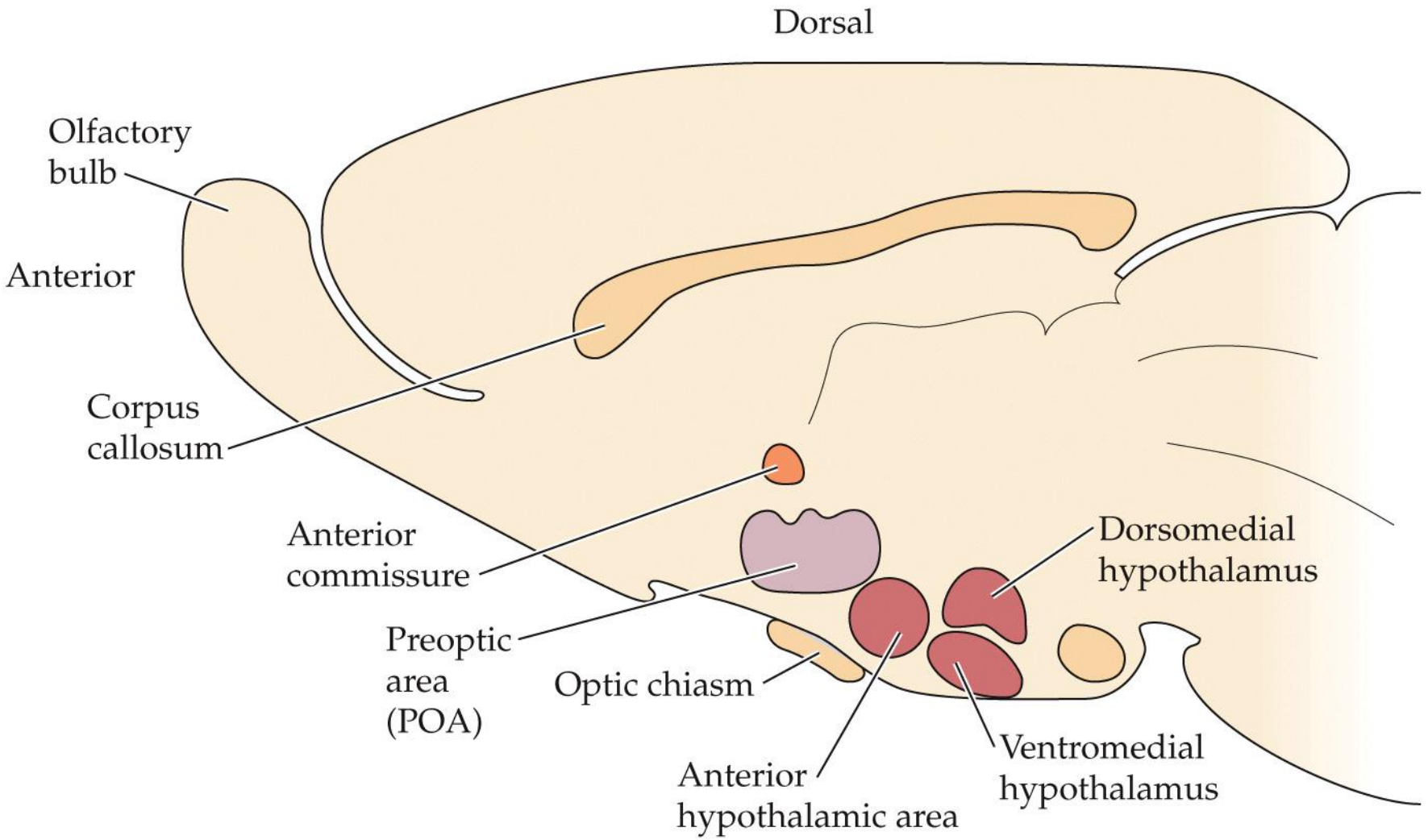
Regions that are essential to the control of sexual performance in male rats



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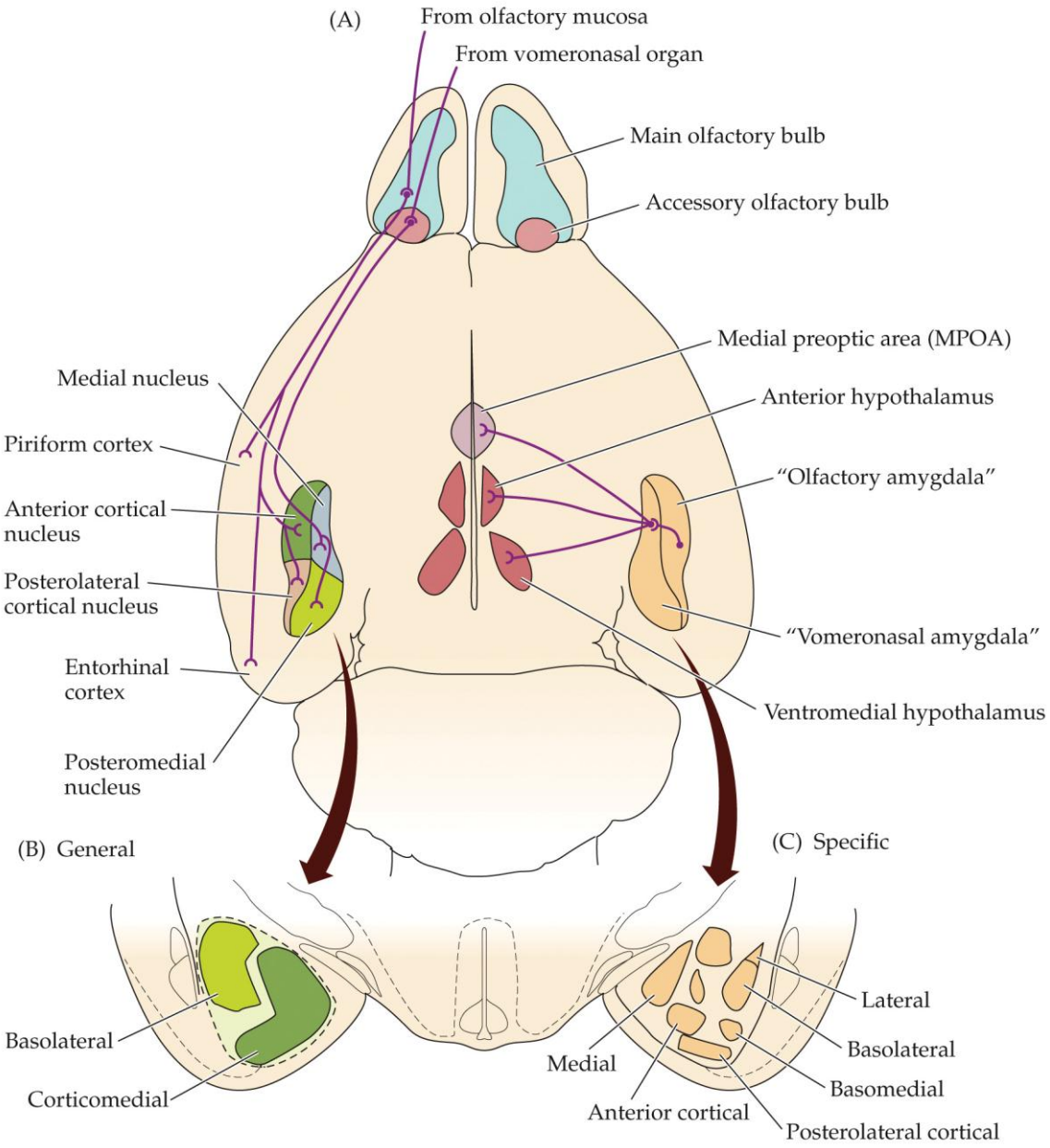
Neural pathways in the rat olfactory system



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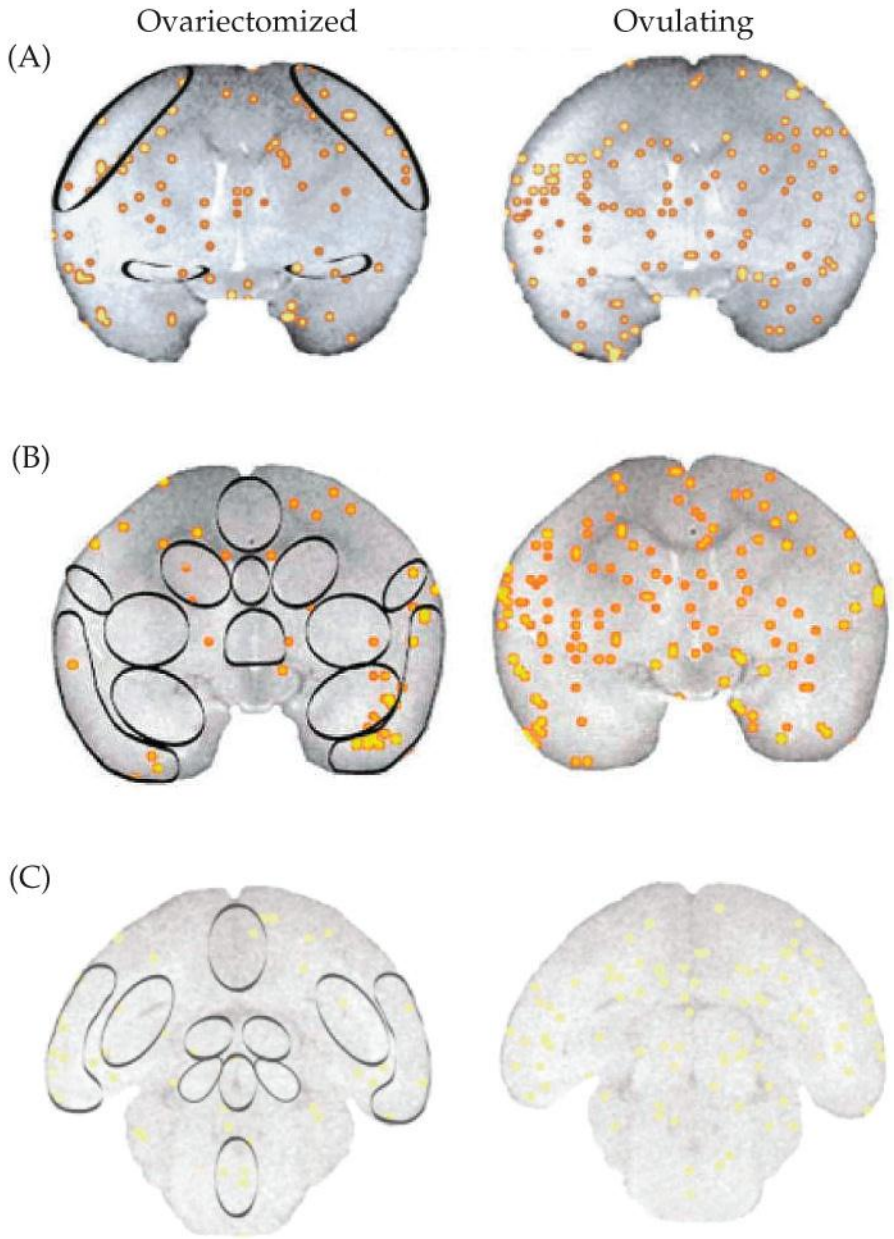
Activation patterns in the brains of common marmosets



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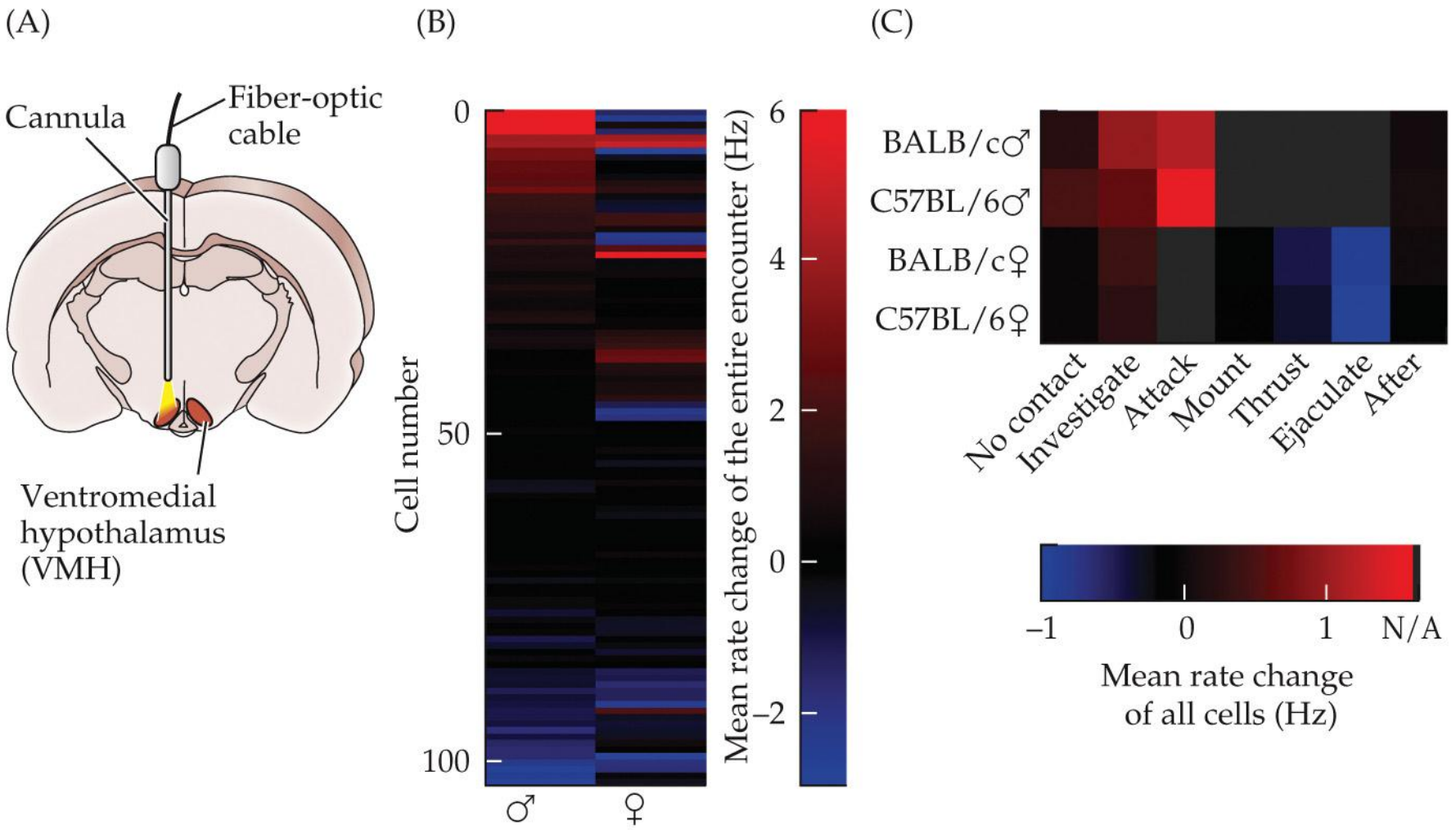
Optogenetic activation of the VMHvl



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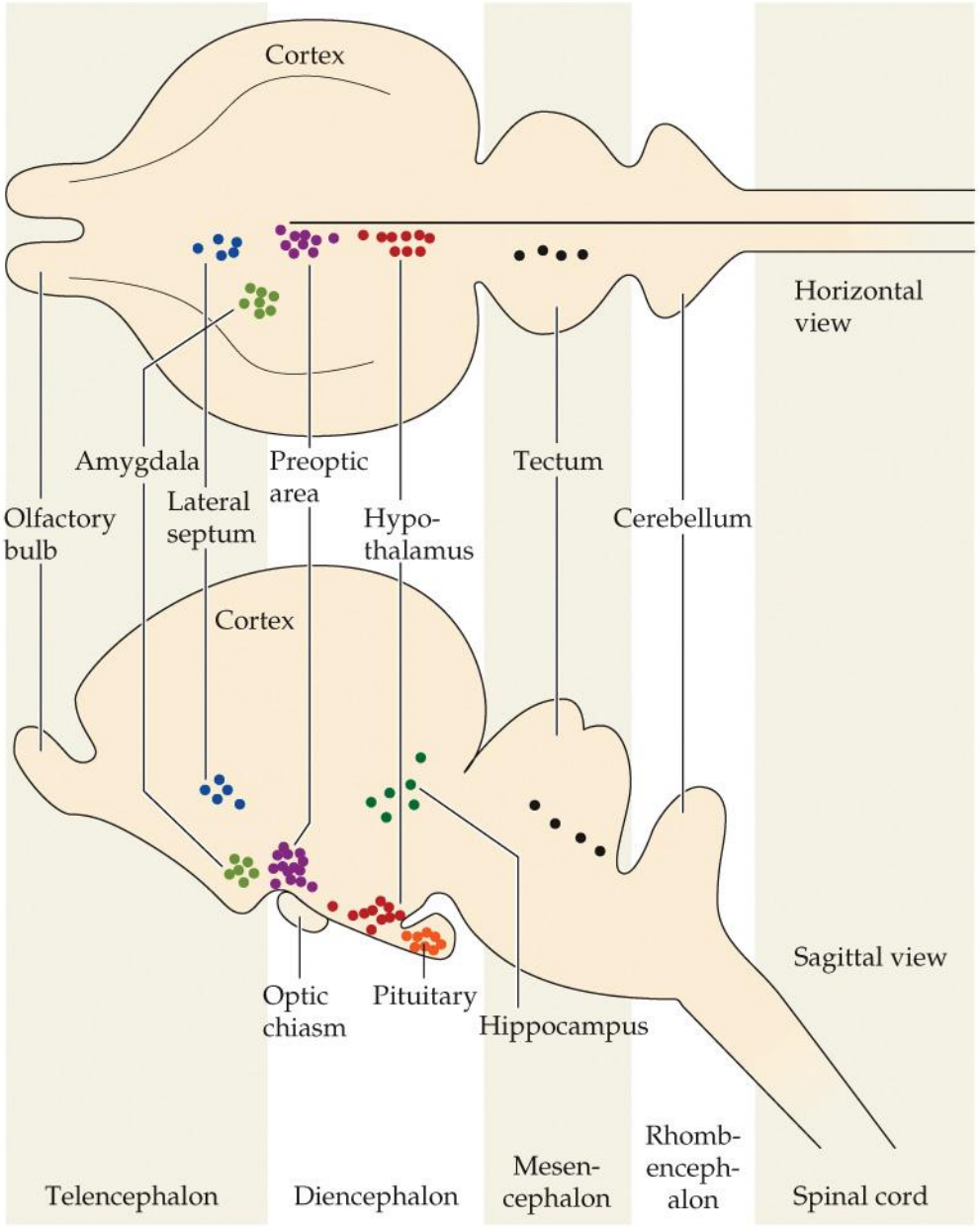
The distribution of sex steroid receptors



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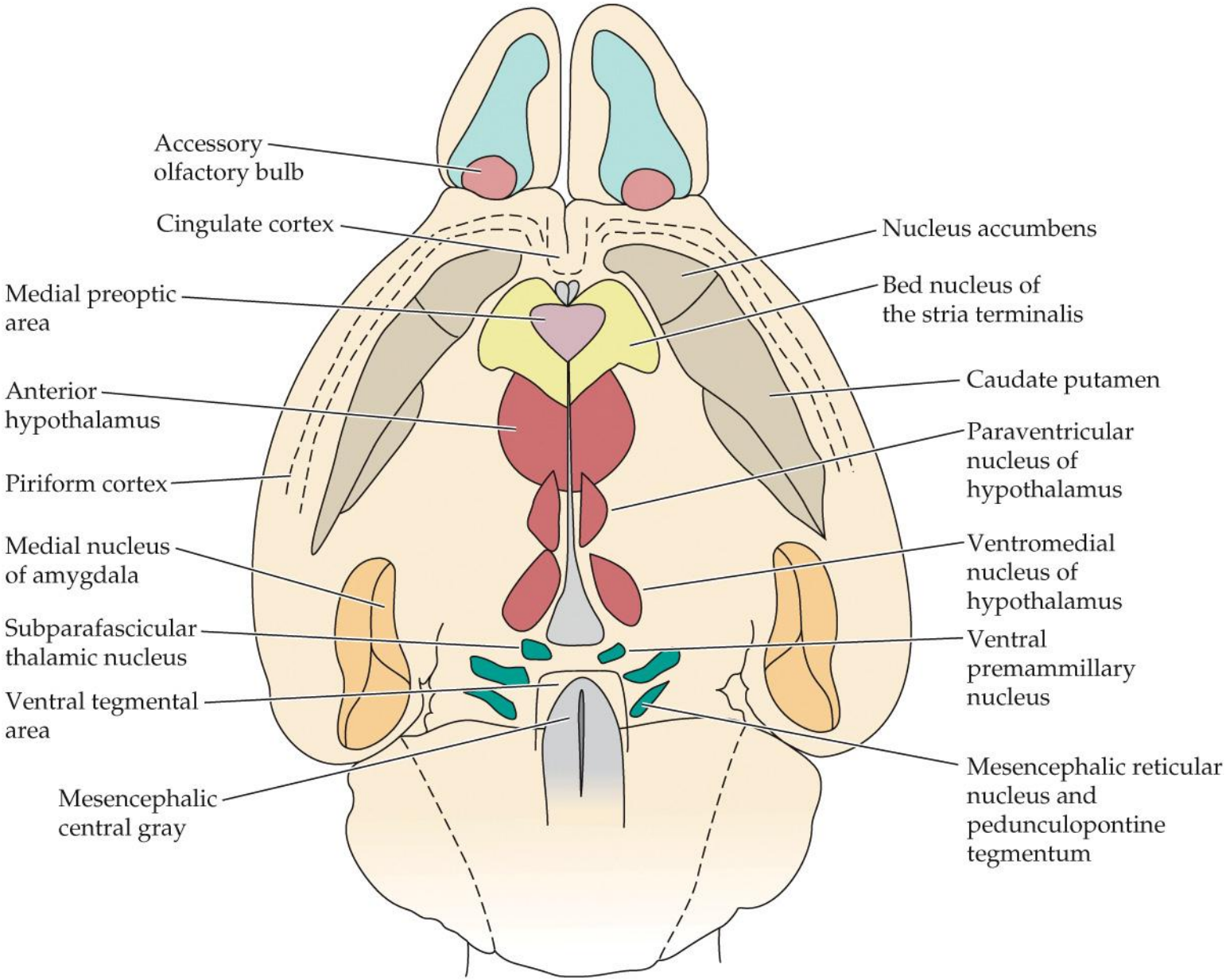
Brain regions in rodents show fos activation after sexual stimulation



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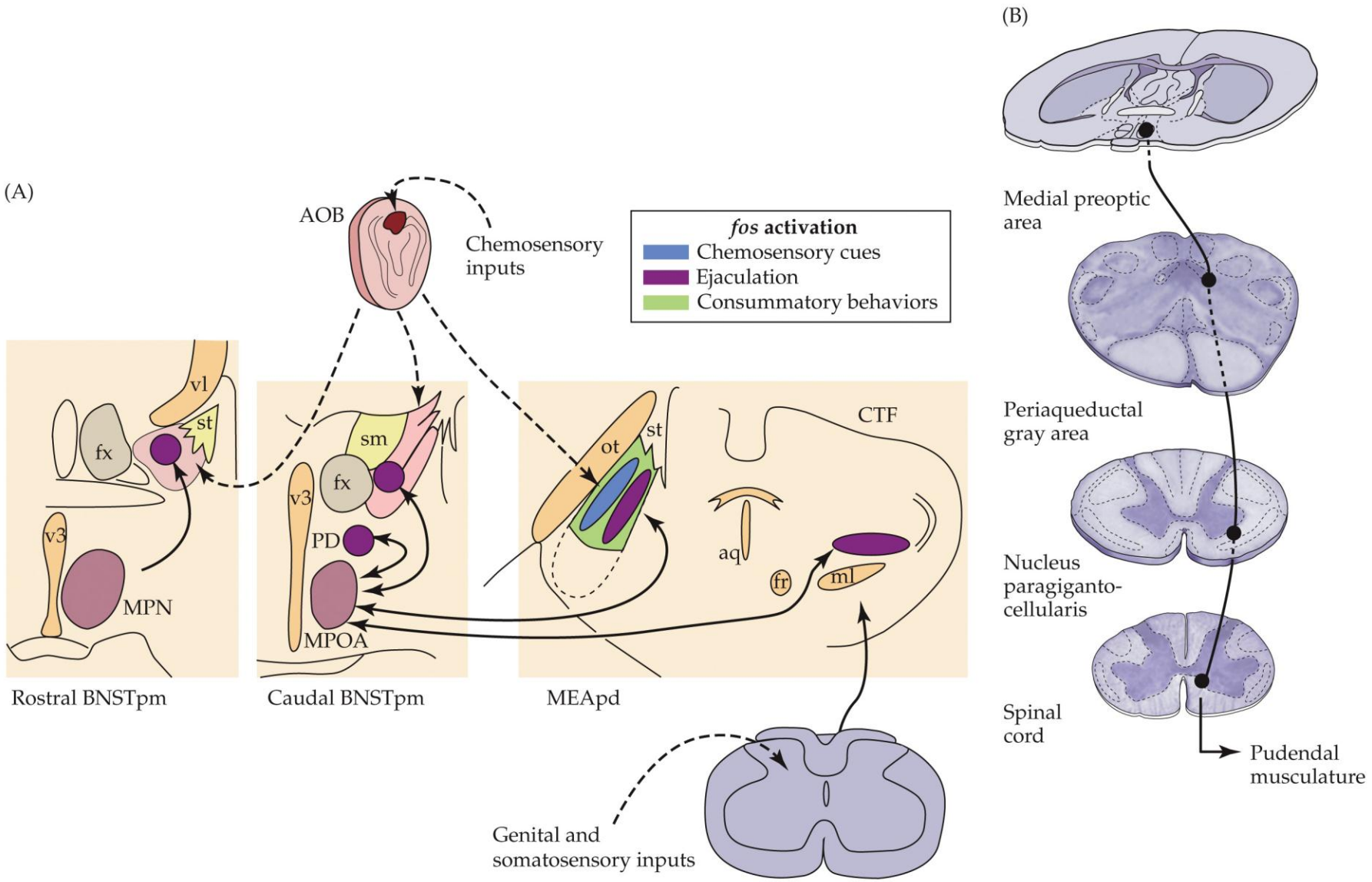
Schematic depiction of neural activity in circuits underlying male sexual behavior



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Effects of various neurotransmitters on male sexual behavior

TABLE 5.2 *Effects of various neurotransmitters on male sexual behavior*

Neurotransmitter	Effect on copulation	Effect on penile erection
Norepinephrine	α_1 receptor activity ↑ copulation	α_1 receptor activity ↓ reflexive erection
	α_2 receptor activity ↓ copulation	α_2 receptor activity ↑ reflexive erection
	β_1 receptor activity has no effect	β activity inhibits reflexive erection
	β_2 receptor activity ↑ copulation	(β receptor subtype not specified)
Dopamine	Presynaptic activity ↓ copulation	Postsynaptic activity ↑ reflexive erection, but ↓ spontaneous erection
Serotonin (5-HT)	5-HT_{1A} activity ↑ copulation	5-HT_{1A} activity ↓ erection
	5-$HT_{1B/1C}$ activity ↓ copulation	5-HT_{1C} activity ↑ spontaneous erection
	5-HT_2 activity ↓ copulation	5-HT_2 activity ↓ spontaneous erection
γ-Aminobutyric acid (GABA)	$GABA_{A/B}$ activity ↓ copulation	$GABA_{A/B}$ activity ↑ spontaneous erection
Acetylcholine	Inconclusive	Inconclusive
Endorphins	Activity ↓ copulation	Activity ↓ erection
Neuropeptide Y	Activity ↓ copulation	No effect
Oxytocin	Activity ↑ copulation	Activity ↑ spontaneous erection

Source: Meisel and Sachs, 1994.

↑ = facilitates; ↓= decreases.

AN INTRODUCTION TO BEHAVIORAL ENDOCRINOLOGY 5e, Table 5.2

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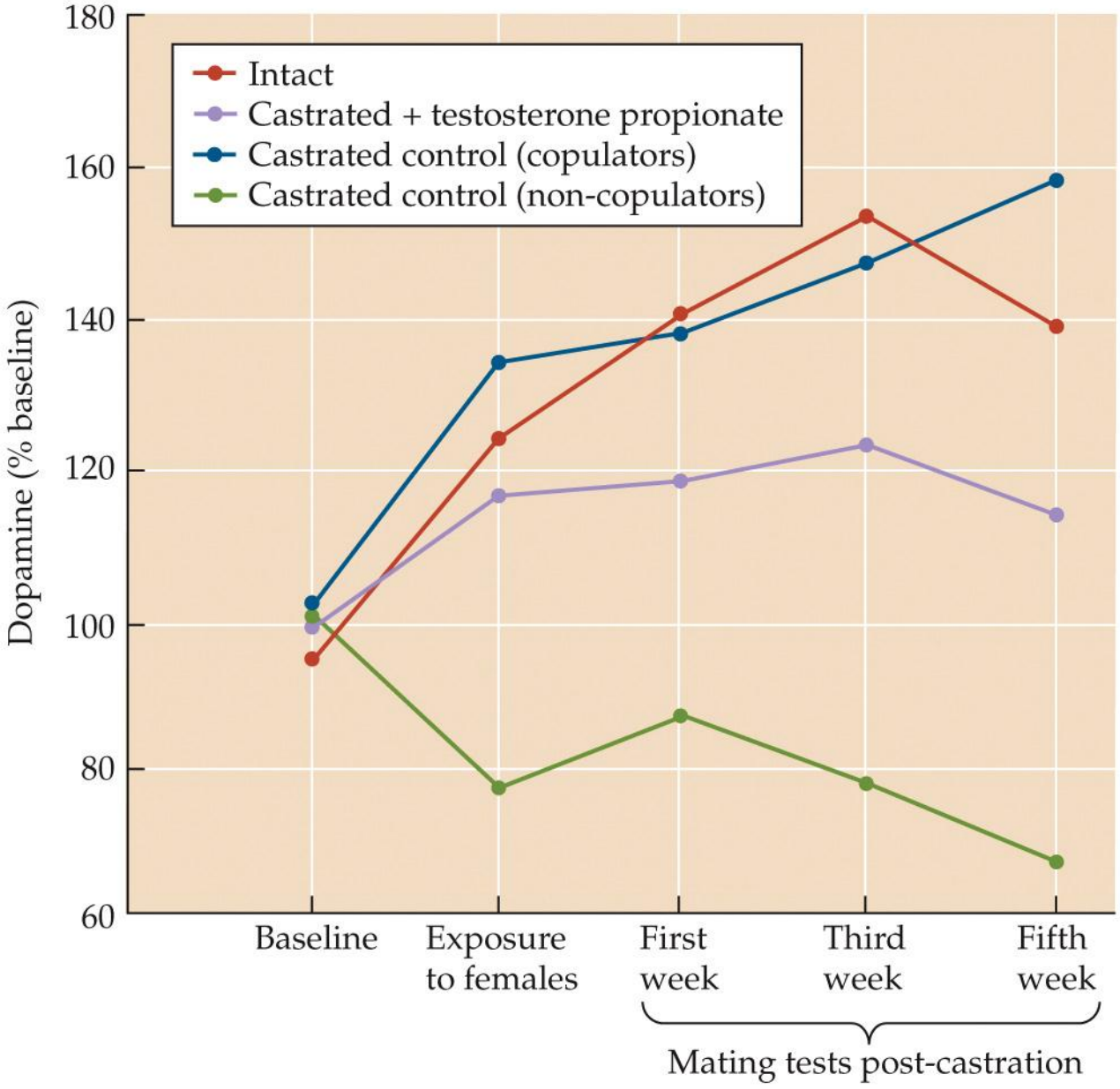
Extracellular dopamine in the mPOA is elevated by cues from the female



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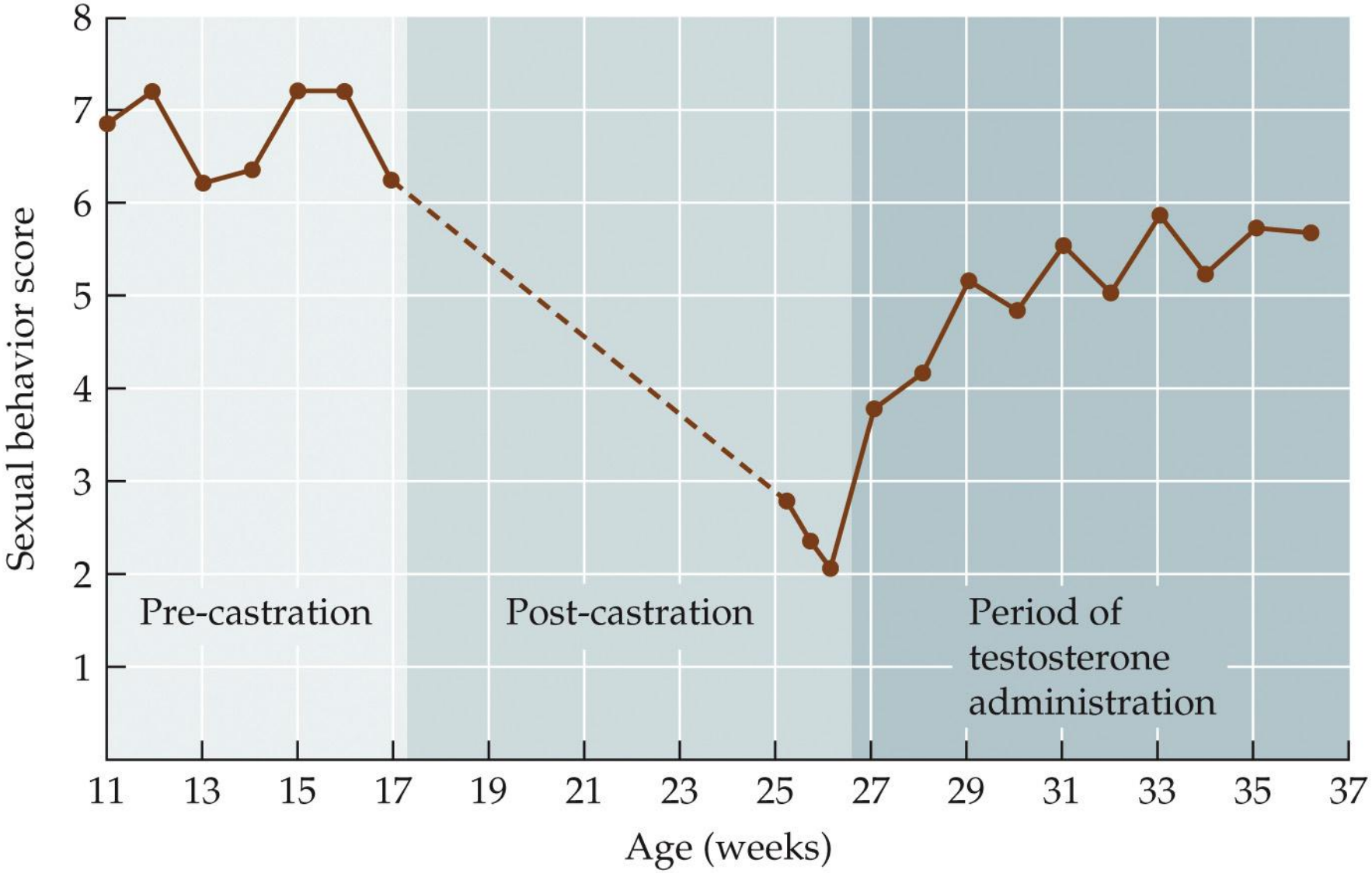
Sexual behavior can be restored by testosterone therapy



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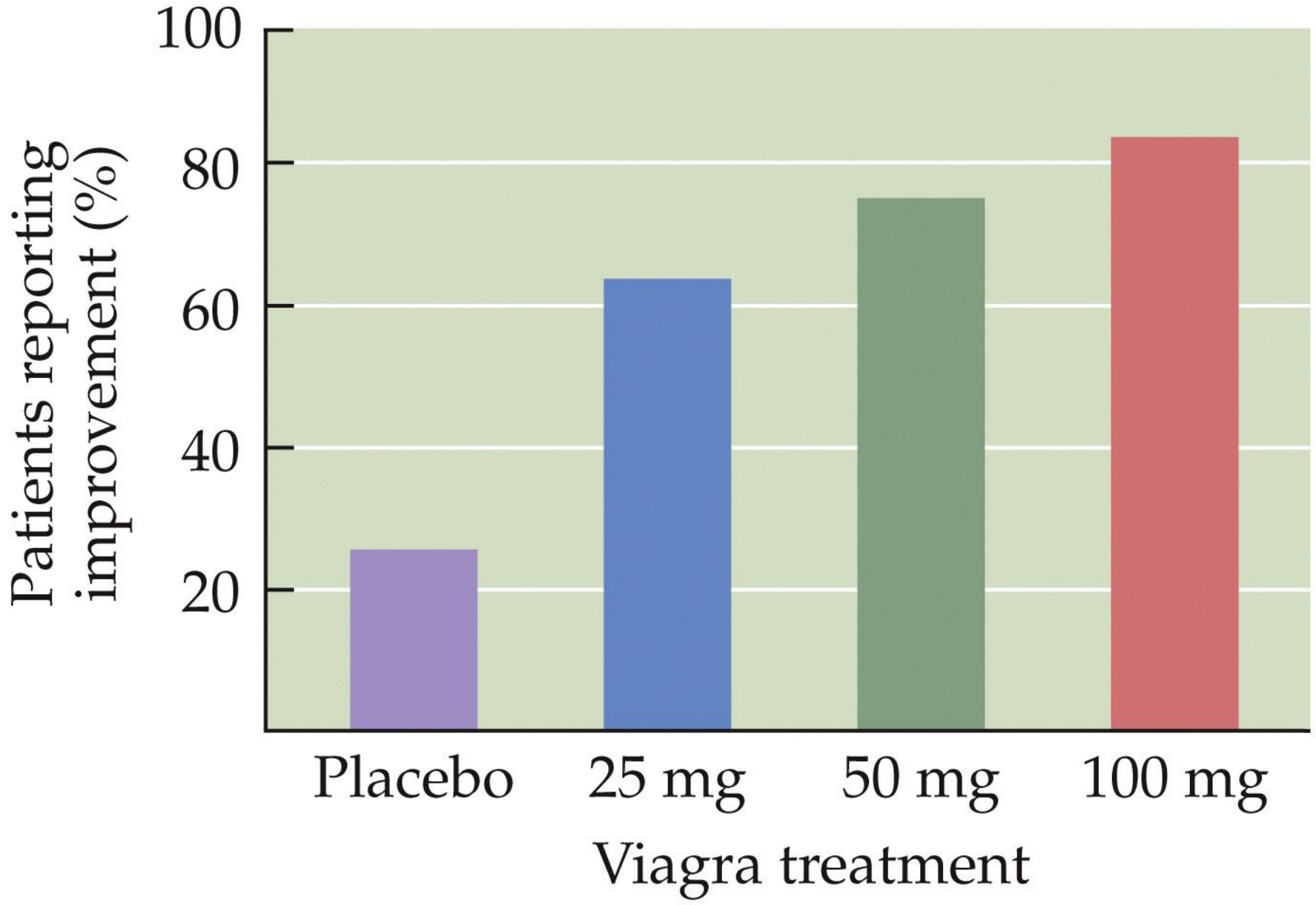
Just Say NO (Nitric Oxide) to Erectile Dysfunction with Viagra



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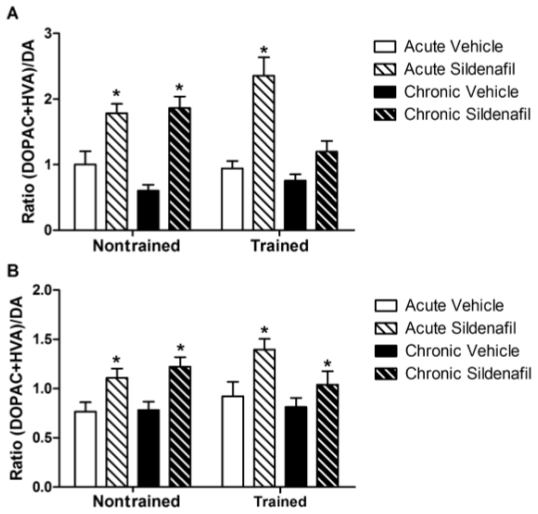
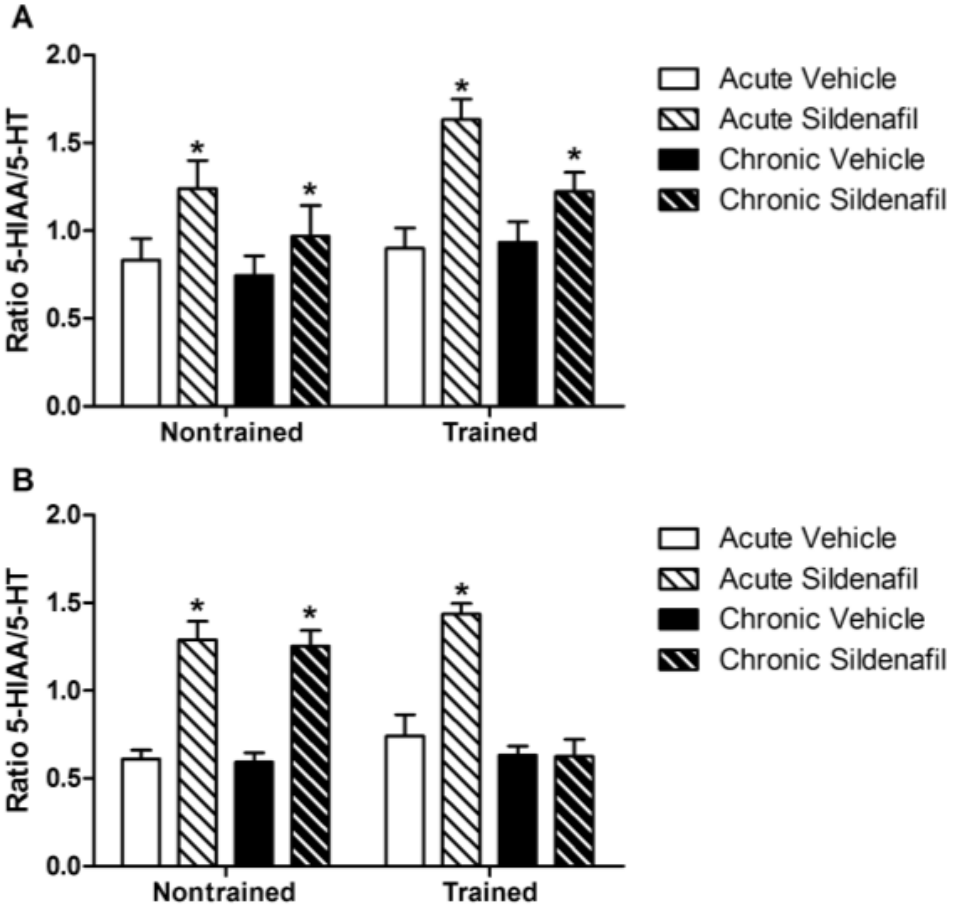


Experimental Evidence for Sildenafil's Action in the Central Nervous System: Dopamine and Serotonin Changes in the Medial Preoptic Area and Nucleus Accumbens During Sexual Arousal

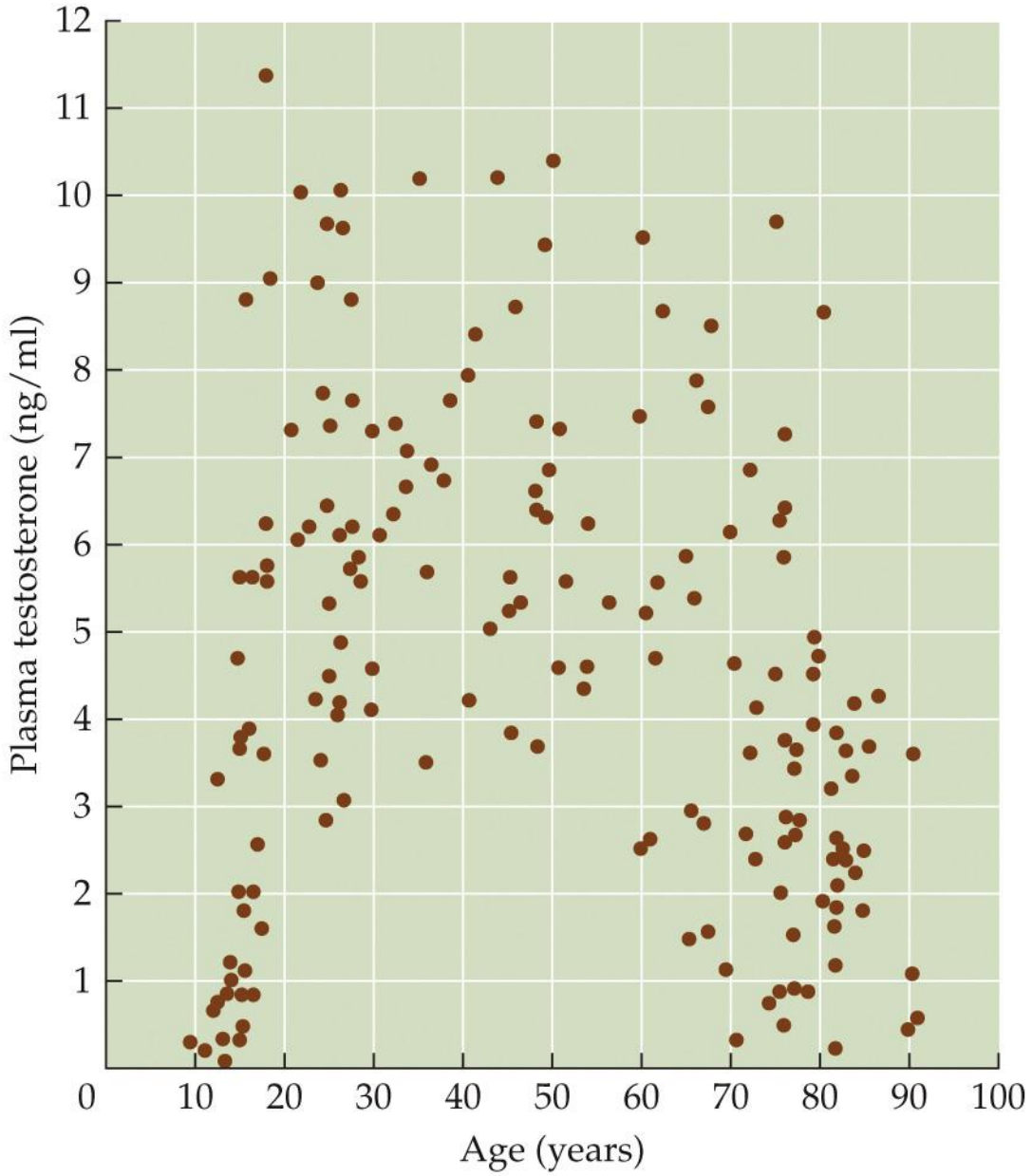
Christos Kyratsas, MD,* Christina Dalla, PhD,* Elmira Anderzhanova, MD, PhD,*§ Alexia Polissidis, PhD,* Nikolaos Kokras, MD, PhD,*† Konstantinos Konstantinides, MD,‡ and Zeta Papadopoulou-Daifoti, PhD*

*Department of Pharmacology, Medical School, University of Athens, Athens, Greece; †First Department of Psychiatry, Eginition Hospital, Medical School, University of Athens, Athens, Greece; ‡Andrology Institute of Athens, Athens, Greece

DOI: 10.1111/j.1743-6109.2012.03000.x



Plasma testosterone concentrations in human males change with age



AN INTRODUCTION TO BEHAVIORAL ENDOCRINOLOGY 5e, Figure 5.32

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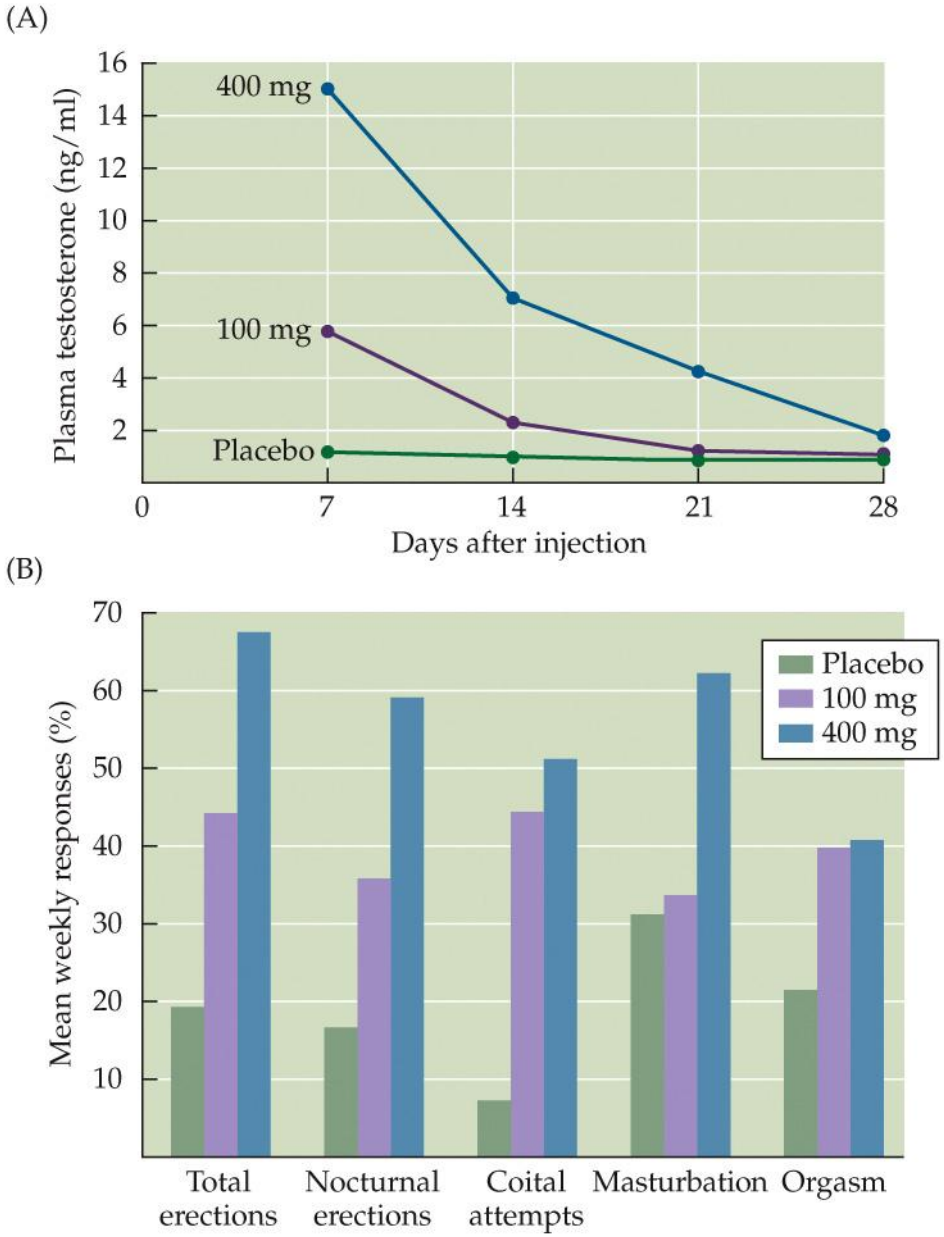
Effects of testosterone treatment on hypogonadal men



AN INTRODUCTION TO BEHAVIORAL ENDOCRINOLOGY 5e, Figure 5.34

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Top 50 reasons why men and women have sex

TABLE 5.3 *Top 50 reasons why men and women have sex*

	WOMEN			MEN	
REASON	M	SD	REASON	M	SD
1. I was attracted to the person	3.89	1.32	I was attracted to the person	4.03	1.16
2. I wanted to experience the physical pleasure	3.75	1.19	It feels good	3.96	1.28
3. It feels good	3.59	1.39	I wanted to experience the physical pleasure	3.84	1.21
4. I wanted to show my affection to the person	3.58	1.25	It's fun	3.57	1.39
5. I wanted to express my love for the person	3.48	1.30	I wanted to show my affection to the person	3.46	1.26
6. I was sexually aroused and wanted the release	3.30	1.33	I was sexually aroused and wanted the release	3.43	1.28
7. I was "horny"	3.11	1.26	I was "horny"	3.38	1.25
8. It's fun	3.05	1.49	I wanted to express my love for the person	3.26	1.31
9. I realized I was in love	2.92	1.47	I wanted to achieve an orgasm	3.14	1.55
10. I was "in the heat of the moment"	2.89	1.06	I wanted to please my partner	3.11	1.35
11 I wanted to please my partner	2.79	1.32	The person's physical appearance turned me on	2.96	1.44
12. I desired emotional closeness (i.e., intimacy)	2.76	1.25	I wanted the pure pleasure	2.85	1.41
13. I wanted the pure pleasure	2.73	1.42	I was "in the heat of the moment"	2.84	1.09
14. I wanted to achieve an orgasm	2.65	1.46	I desired emotional closeness (i.e., intimacy)	2.79	1.31
15. It's exciting, adventurous	2.49	1.23	It's exciting, adventurous	2.71	1.30
16. I wanted to feel connected to the person	2.44	1.33	The person had a desirable body	2.67	1.44
17. The person's physical appearance turned me on	2.39	1.37	I realized I was in love	2.66	1.46
18. It was a romantic setting	2.39	1.14	The person had an attractive face	2.62	1.47
19. The person really desired me	2.39	1.40	The person really desired me	2.56	1.39
20. The person made me feel sexy	2.37	1.29	I wanted the adventure/excitement	2.45	1.25
21. The person caressed me	2.34	1.31	I wanted to feel connected to the person	2.45	1.37
22. It seemed like the natural next step in my relationship	2.24	1.18	I wanted the experience	2.43	1.27
23. I wanted to become one with another person	2.24	1.33	It was a romantic setting	2.35	1.15
24. It just happened	2.21	1.07	The person caressed me	2.34	1.27
25. I wanted to increase the emotional bond by having sex	2.20	1.28	The person made me feel sexy	2.32	1.32

AN INTRODUCTION TO BEHAVIORAL ENDOCRINOLOGY 5e, Table 5.3 (1)

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Top 50 reasons why men and women have sex

TABLE 5.3 ***Top 50 reasons why men and women have sex*** *(continued)*

	WOMEN			MEN	
REASON	M	SD	REASON	M	SD
26. I wanted the experience	2.17	1.24	It seemed like the natural next step in my relationship	2.29	1.19
27. I wanted the adventure/excitement	2.17	1.22	I wanted to increase the emotional bond by having sex	2.27	1.29
28. The person had an attractive face	2.15	1.35	I wanted to keep my partner satisfied	2.25	1.26
29. The person was a good kisser	2.14	1.27	The opportunity presented itself	2.24	1.18
30. I wanted to intensify my relationship	2.14	1.15	It just happened	2.23	1.14
31. My hormones were out of control	2.11	1.17	I wanted to intensify my relationship	2.22	1.25
32. I wanted to try out new sexual techniques or positions	2.11	1.16	I wanted to try out new sexual techniques or positions	2.22	1.16
33. I wanted to feel loved	2.11	1.22	My hormones were out of control	2.20	1.17
34. The person had a desirable body	2.08	1.31	The person was too "hot" (sexy) to resist	2.17	1.26
35. I wanted to celebrate a birthday or anniversary or special occasion	2.06	1.05	I was curious about my sexual abilities	2.17	1.09
36. I wanted to communicate at a "deeper" level	2.06	1.24	I wanted to improve my sexual skills	2.16	1.22
37. I was curious about sex	2.06	1.08	I wanted to become one with another person	2.16	1.36
38. It was a special occasion	2.03	1.03	I saw the person naked and could not resist	2.15	1.27
39. The person was intelligent	1.91	1.23	The person was a good kisser	2.15	1.26
40. I wanted to say "I've missed you"	1.90	0.99	I wanted to feel loved	2.15	1.26
41. I wanted to keep my partner satisfied	1.88	1.12	I wanted to celebrate a birthday or anniversary or special occasion	2.14	1.11
42. I got "carried away"	1.88	1.03	The person was too physically attractive to resist	2.11	1.23
43. The opportunity presented itself	1.87	1.09	It was a special occasion	2.11	1.08
44. The person had a great sense of humor	1.87	1.19	I hadn't had sex for a while	2.10	1.07
45. I wanted to improve my sexual skills	1.87	1.14	The person had beautiful eyes	2.06	1.31
46. I was curious about my sexual abilities			I wanted to communicate at a "deeper" level	2.02	1.22
47. The person seemed self-confident	1.86	1.06	I wanted to experiment with new experiences	2.01	1.14
48. I wanted to make up after a fight	1.84	1.19	The person was intelligent	2.01	1.28
49. I was drunk	1.83	0.98	I wanted to keep my partner happy	2.00	1.21
50. I was turned on by the sexual conversation	1.82	1.10	I was curious about what the person was like in bed	1.94	1.08

Source: Meston and Buss, 2007.
Note: Absolute range, 1–5; n = 894–908 for women; n = 460–480 for men; M = mean; SD = standard deviation.

***AN INTRODUCTION TO BEHAVIORAL ENDOCRINOLOGY 5e*, Table 5.3 (2)**
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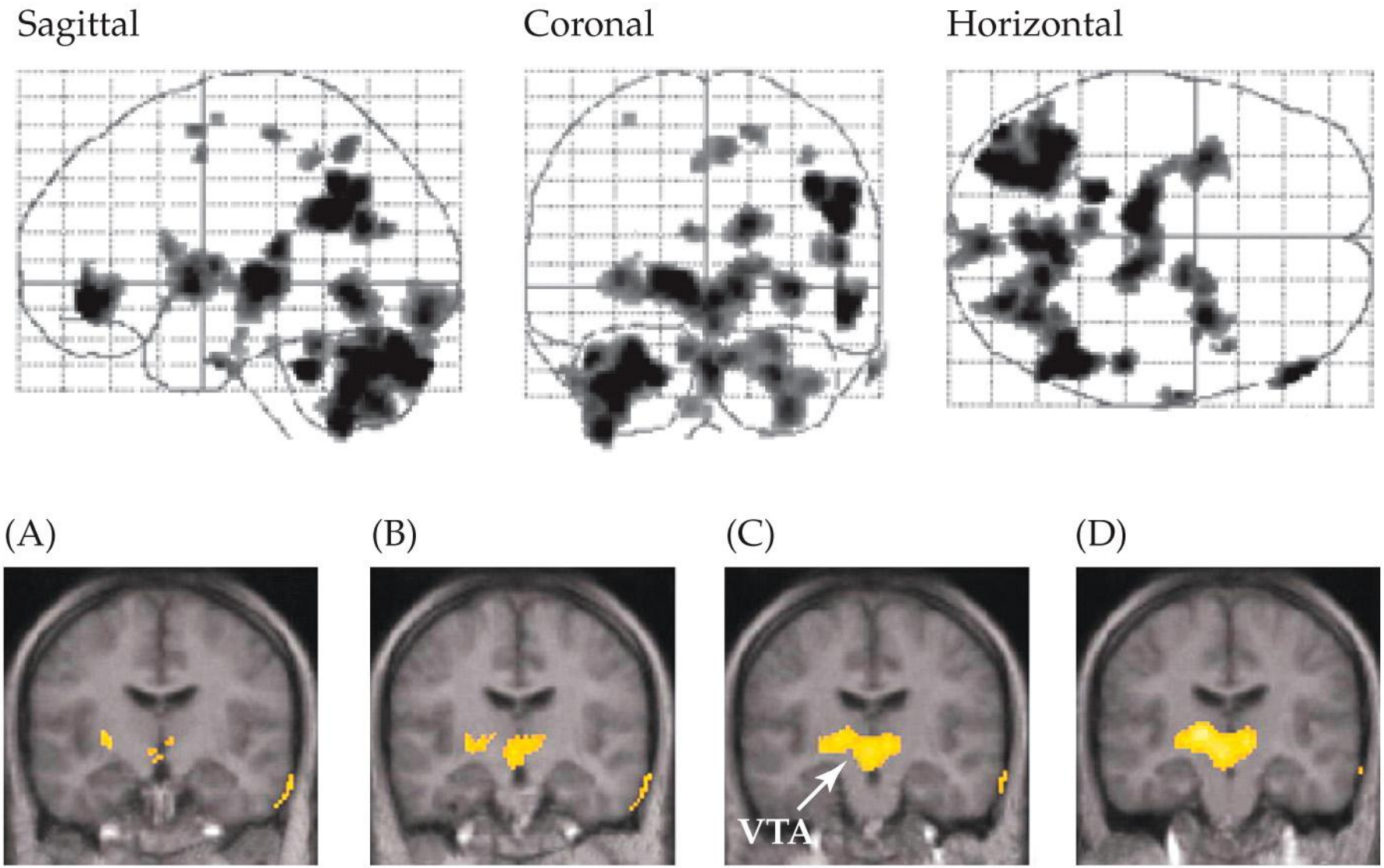
Some brain regions are strongly activated during ejaculation



AN INTRODUCTION TO BEHAVIORAL ENDOCRINOLOGY 5e, Figure 5.36

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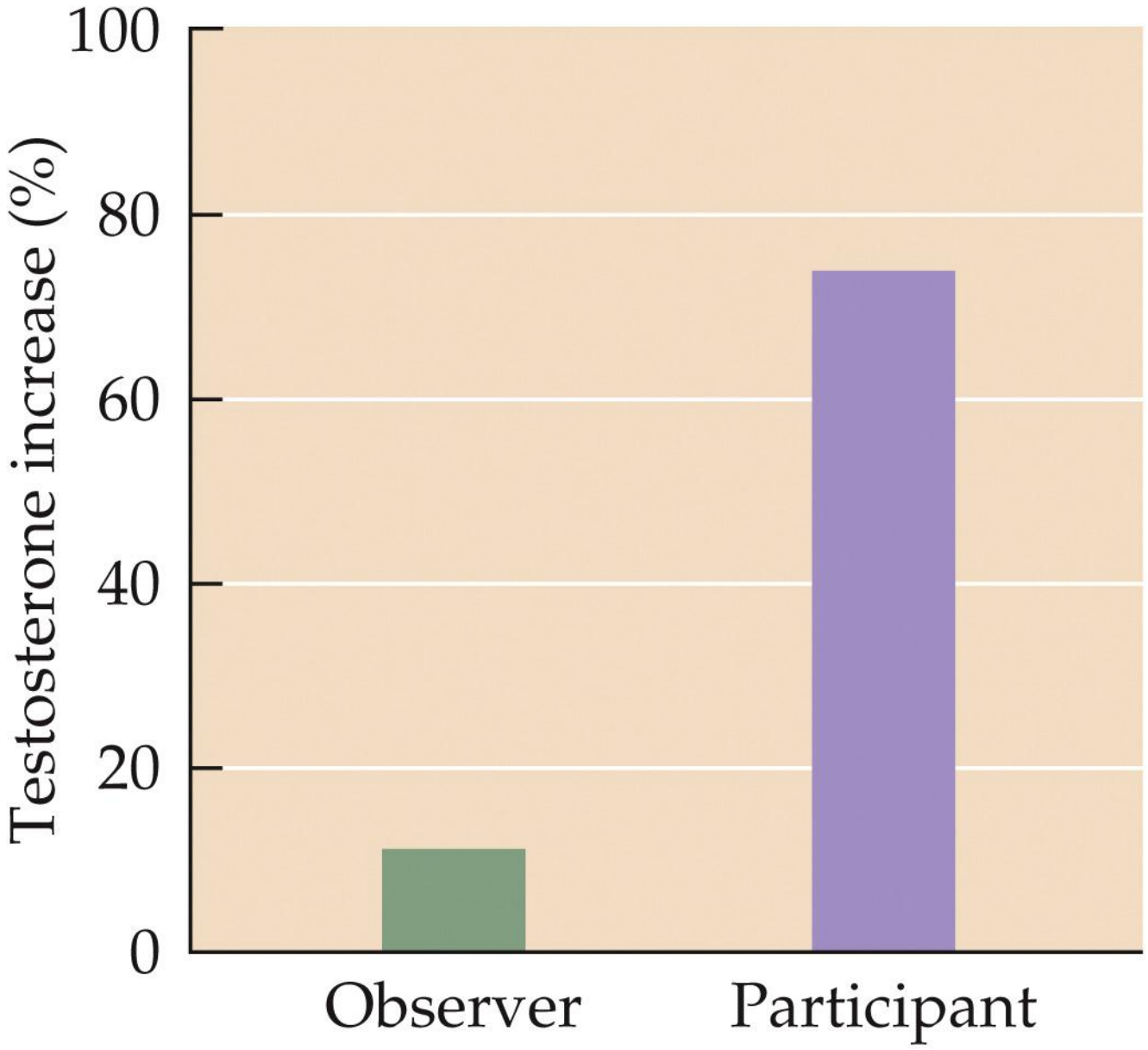
Testosterone of men watching or participating in sexual behavior



AN INTRODUCTION TO BEHAVIORAL ENDOCRINOLOGY 5e, Figure 5.37

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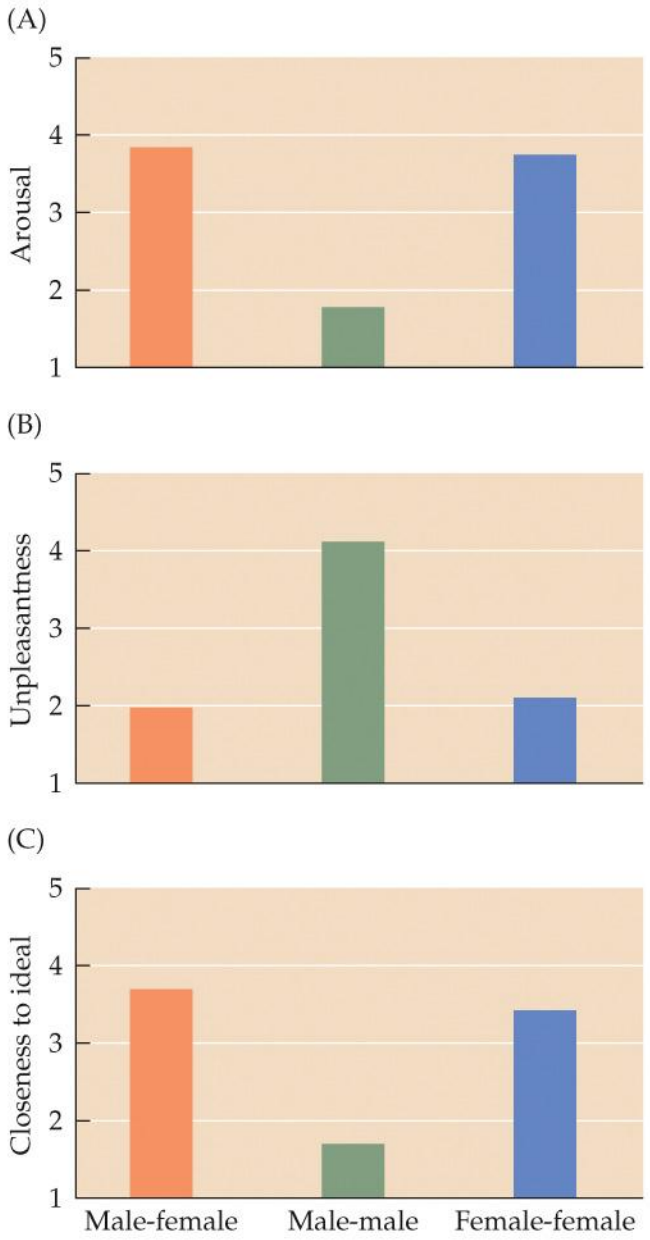
Brain imaging of heterosexual men observing pornographic pictures



AN INTRODUCTION TO BEHAVIORAL ENDOCRINOLOGY 5e, Figure 5.38 (Part 1)

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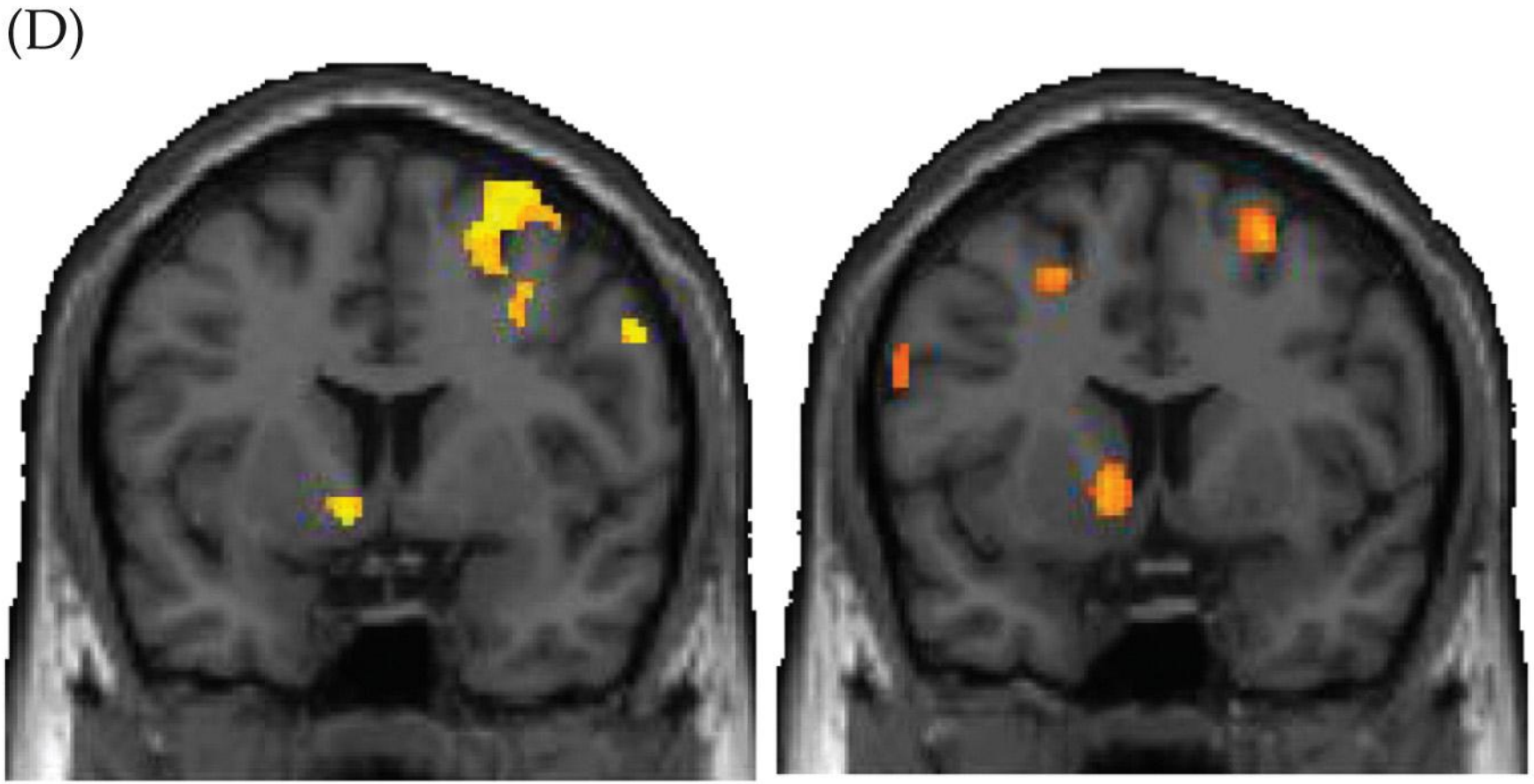
Brain imaging of heterosexual men observing pornographic pictures



AN INTRODUCTION TO BEHAVIORAL ENDOCRINOLOGY 5e, Figure 5.38 (Part 2)
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Male-typical visuospatial functioning in gynephilic girls with gender dysphoria — organizational and activational effects of testosterone

Sarah M. Burke, PhD; Baudewijntje P.C. Kreukels, PhD; Peggy T. Cohen-Kettenis, PhD; Dick J. Veltman, MD, PhD; Daniel T. Klink, MD, PhD; Julie Bakker, PhD

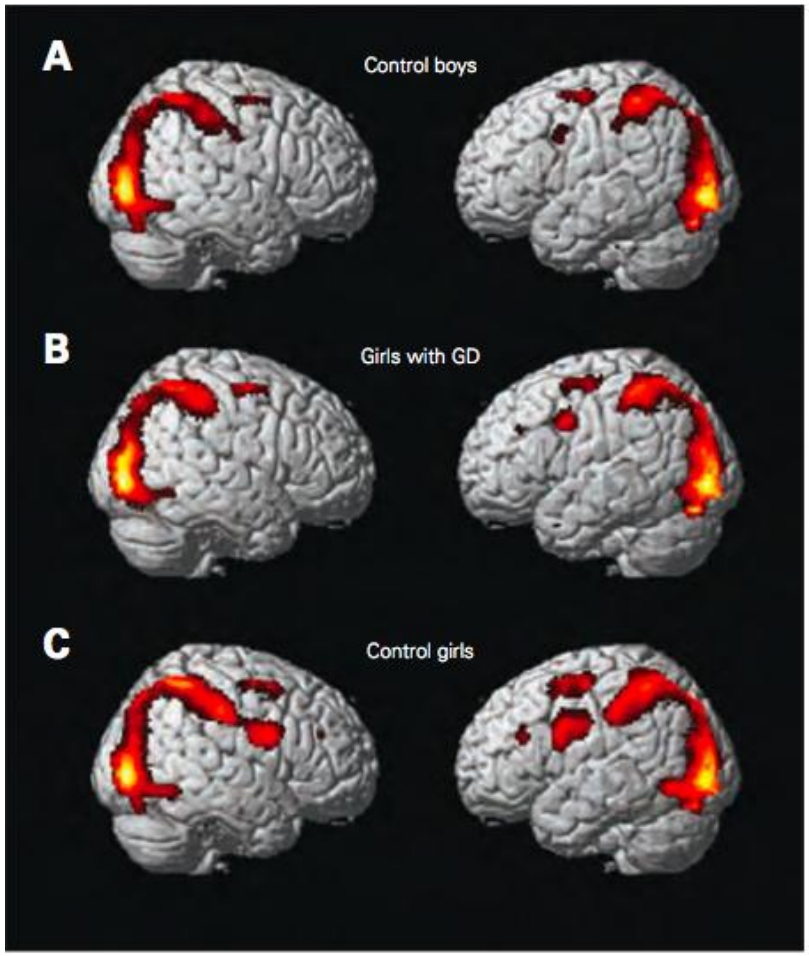
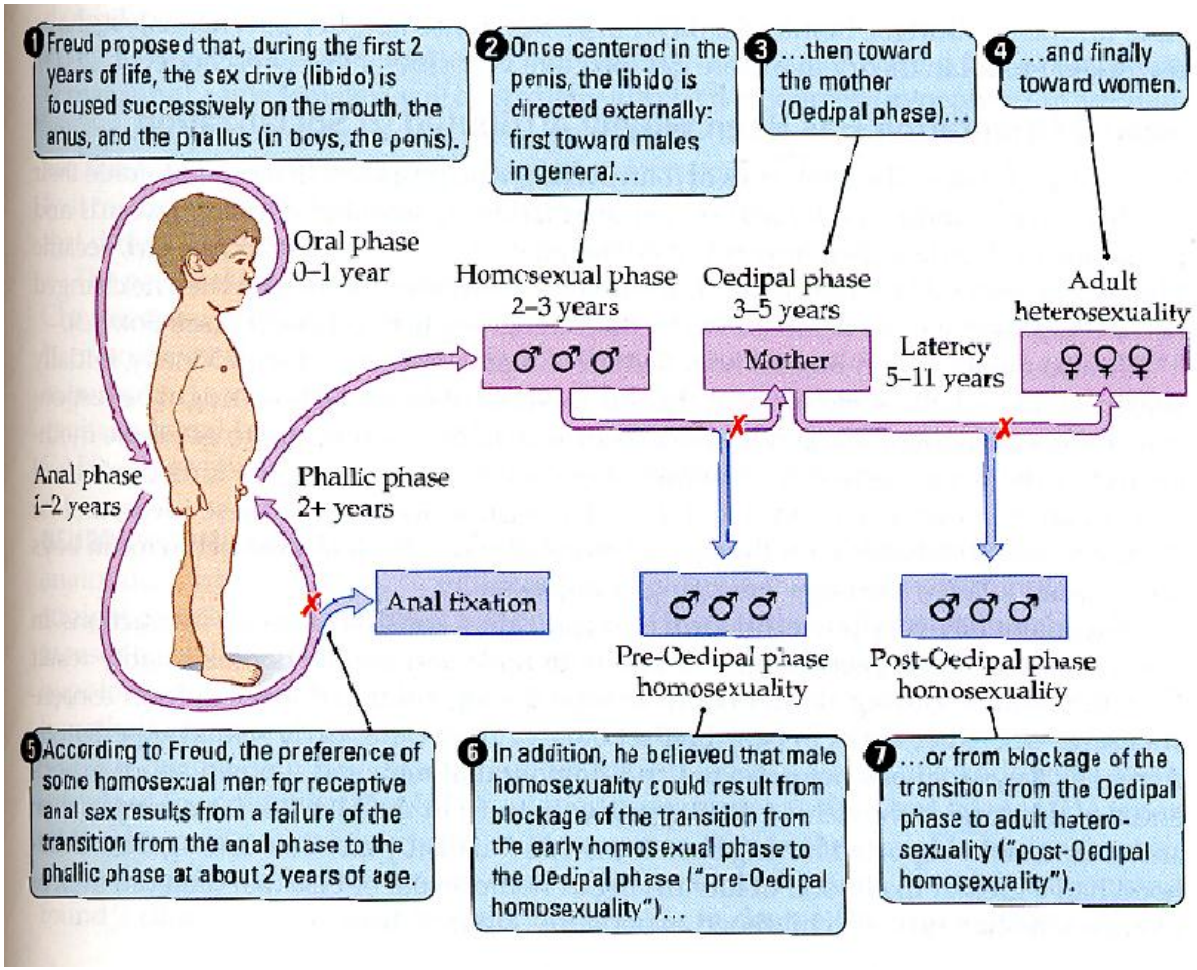


Fig. 1: Brain activation pattern during mental rotation at session 1 in (**A**) control boys, (**B**) girls with gender dysphoria (GD) and (**C**) control girls. Statistical parametric maps were rendered on an SPM8 template image showing the left and right hemisphere in sagittal view. For illustrative purposes, whole brain results are displayed at an uncorrected threshold of $p < 0.005$.

Homosexuality: Freudian explanations



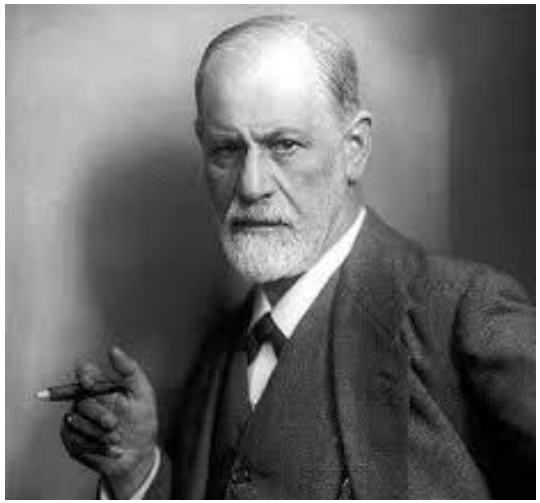


Figure 8.9 Freud's theory of male homosexuality. Freud interpreted male homosexuality as resulting from a blockage of normal psychosexual development. In addition, he proposed that the preference of some homosexual men for receptive anal sex results from a failure of the transition from the anal phase to the phallic phase at about 2 years of age.

Homosexuality has a nearly constant incidence in all societies

independent of social system, education, and.. past experiences including presence/absence of father

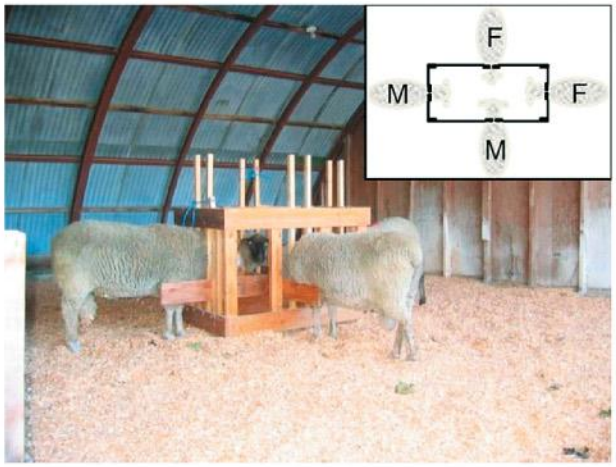
Table II National population surveys of same-sex activity.

STUDY	MALE
Great Britain	5.0-9.0
Japan	5.8
Netherlands	7.8
Philippines*	2.0
Pilau*	4.7
Thailand*	3.6
United States	4.8
Mean	4.8-5.4

* = the 3 most relatively tolerant of homosexuality. (see Diamond, 1993a....., for details)

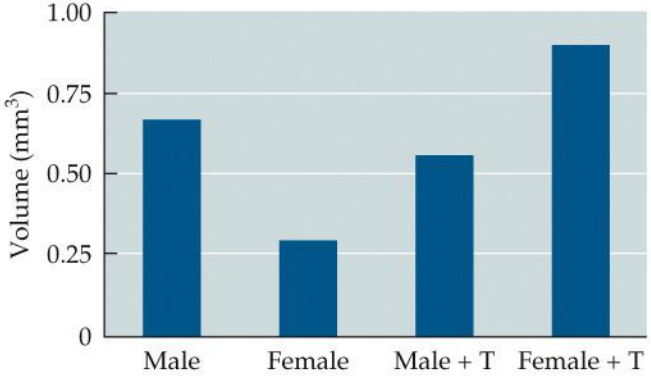
Rams display four types of sexual preference

(A)



(B)

(C)



(D)

Behaviors	Female-oriented rams		Male-oriented rams	
	Estrous stimulus ewe	Ram stimulus	Estrous stimulus ewe	Ram stimulus
Precopulatory behaviors[a]	33.4	9.4	2.6	37.0
Mount attempts[b]	0.4	0.1	0	0.4
Mounts	9.2	0.5	0	11.1
Ejaculations	2.8	0	0	0.6

Note: Before partner preference tests, rams were given performance tests with estrous ewes for a total of 9 h. Male-oriented rams did not mount ewes in any test.

[a]Precopulatory behaviors include the sum of: genital sniffs, foreleg kicks, vocalizations and flehmen responses (lip curls).

[b]Mount attempts signify unsuccessful mounts in which both front feet left the ground but the ram did not become firmly positioned on the ewe's rump.

AN INTRODUCTION TO BEHAVIORAL ENDOCRINOLOGY 5e, Figure 4.20

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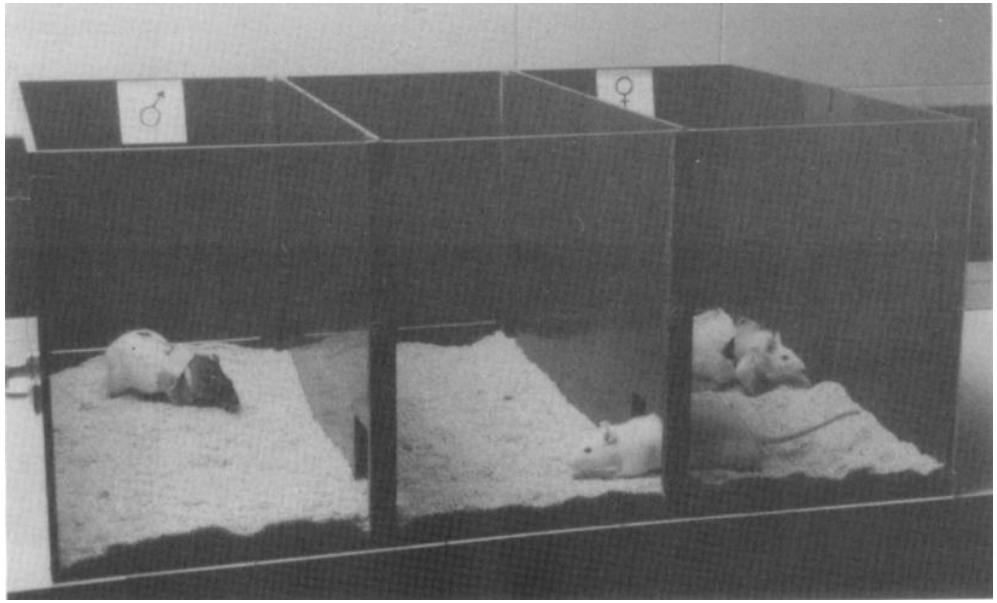
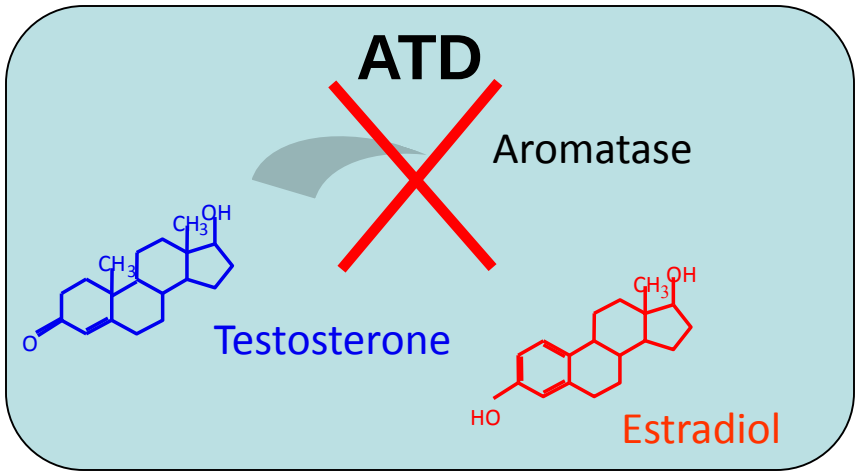
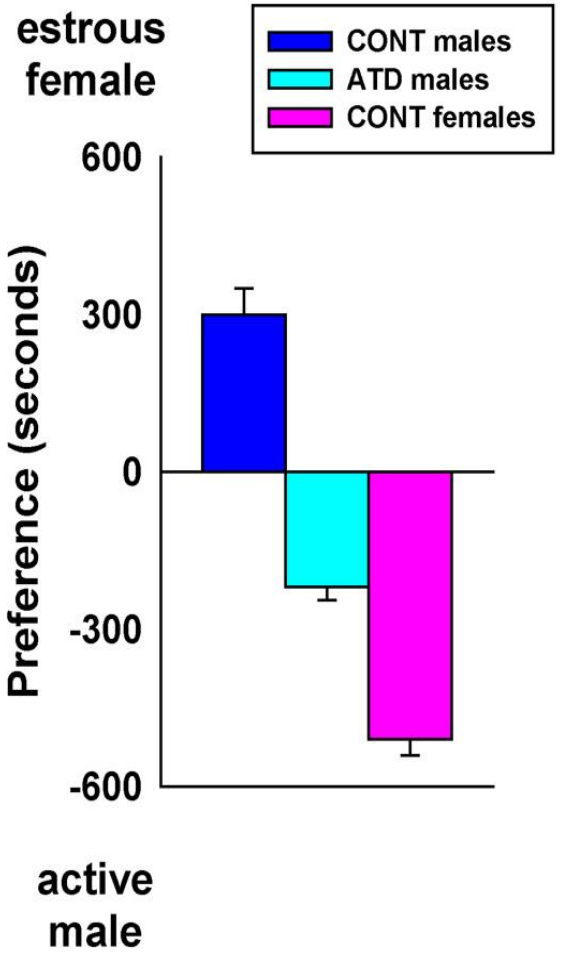
Perinatal hormones influence sexual partner preference

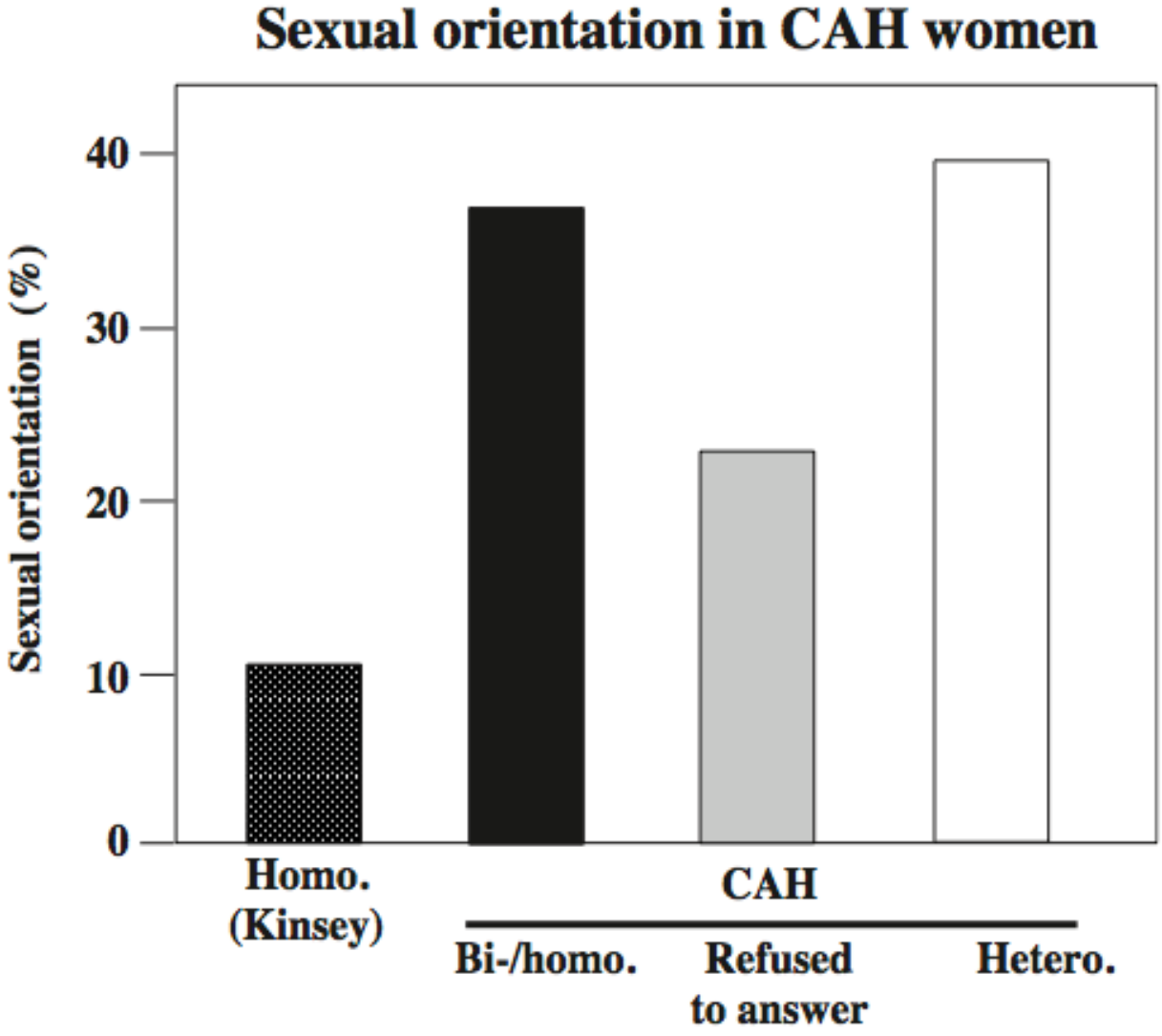




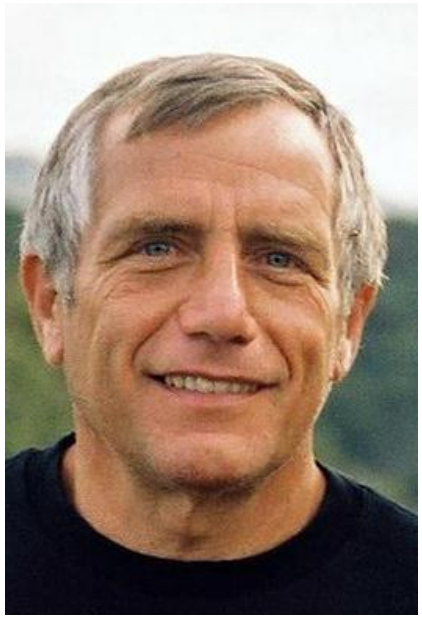


Bakker et al, 1996

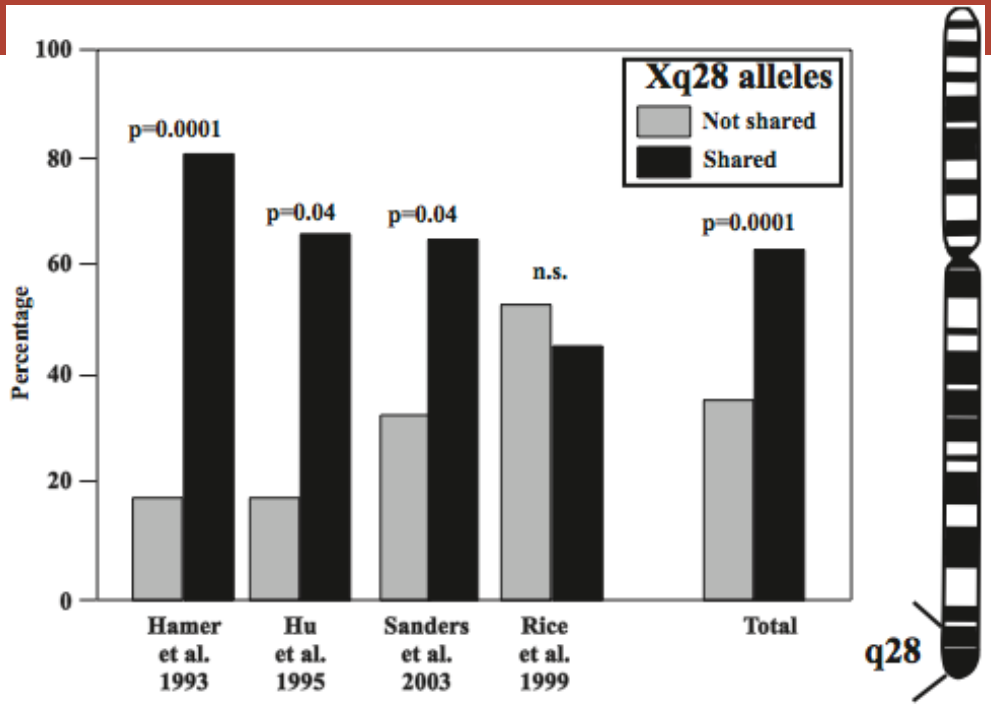
Higher incidence of homosexuality in CAH women



Maternal heritage and linkage studies on the X chromosome



Dean Hamer



Confirmation in 2014 with hundreds of subjects

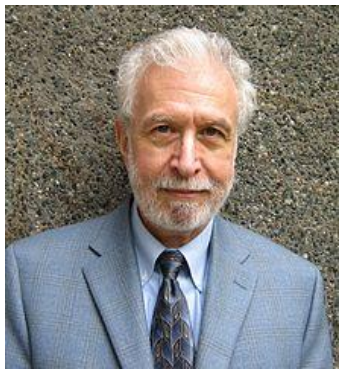
Psychological Medicine, Page 1 of 10. © Cambridge University Press 2014
doi:10.1017/S0033291714002451

ORIGINAL ARTICLE

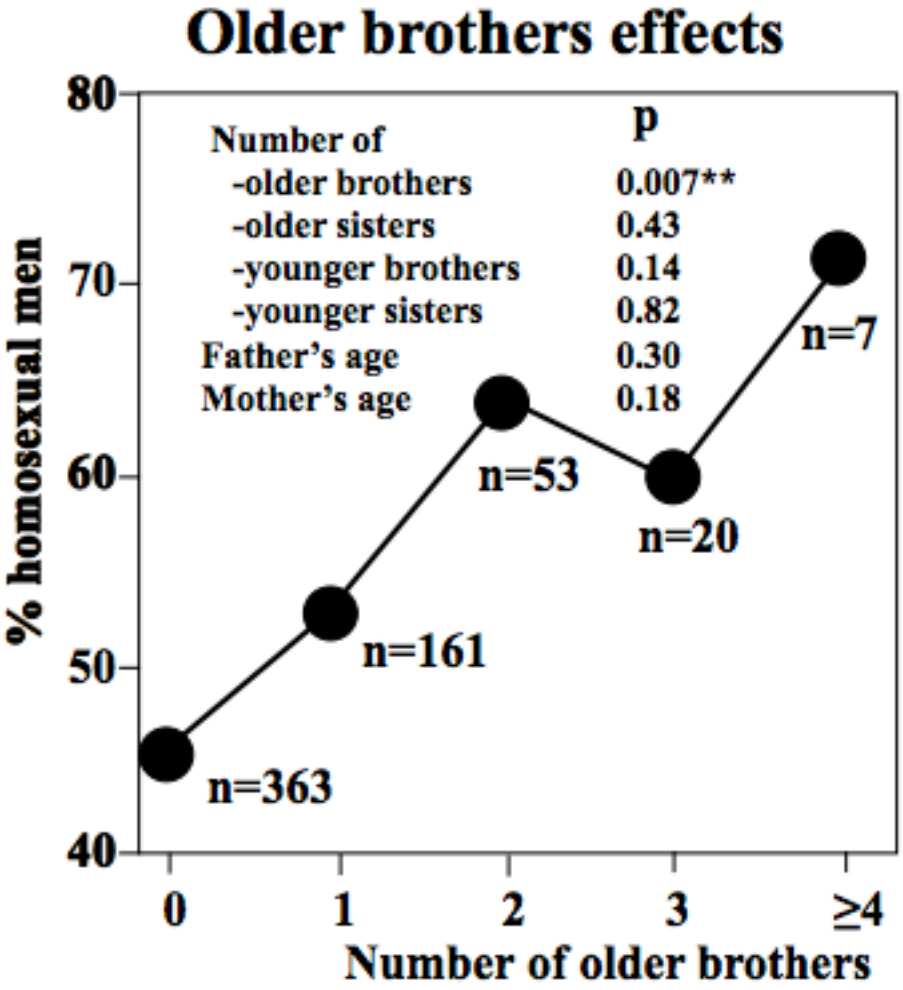
Genome-wide scan demonstrates significant linkage for male sexual orientation

A. R. Sanders[1,2*], E. R. Martin[3], G. W. Beecham[3], S. Guo[3], K. Dawood[4], G. Rieger[5], J. A. Badner[2], E. S. Gershon[2], R. S. Krishnappa[6], A. B. Kolundzija[7], J. Duan[1,2], P. V. Gejman[1,2] and J. M. Bailey[8]

Immune reaction toward male embryos



Ray Blanchard



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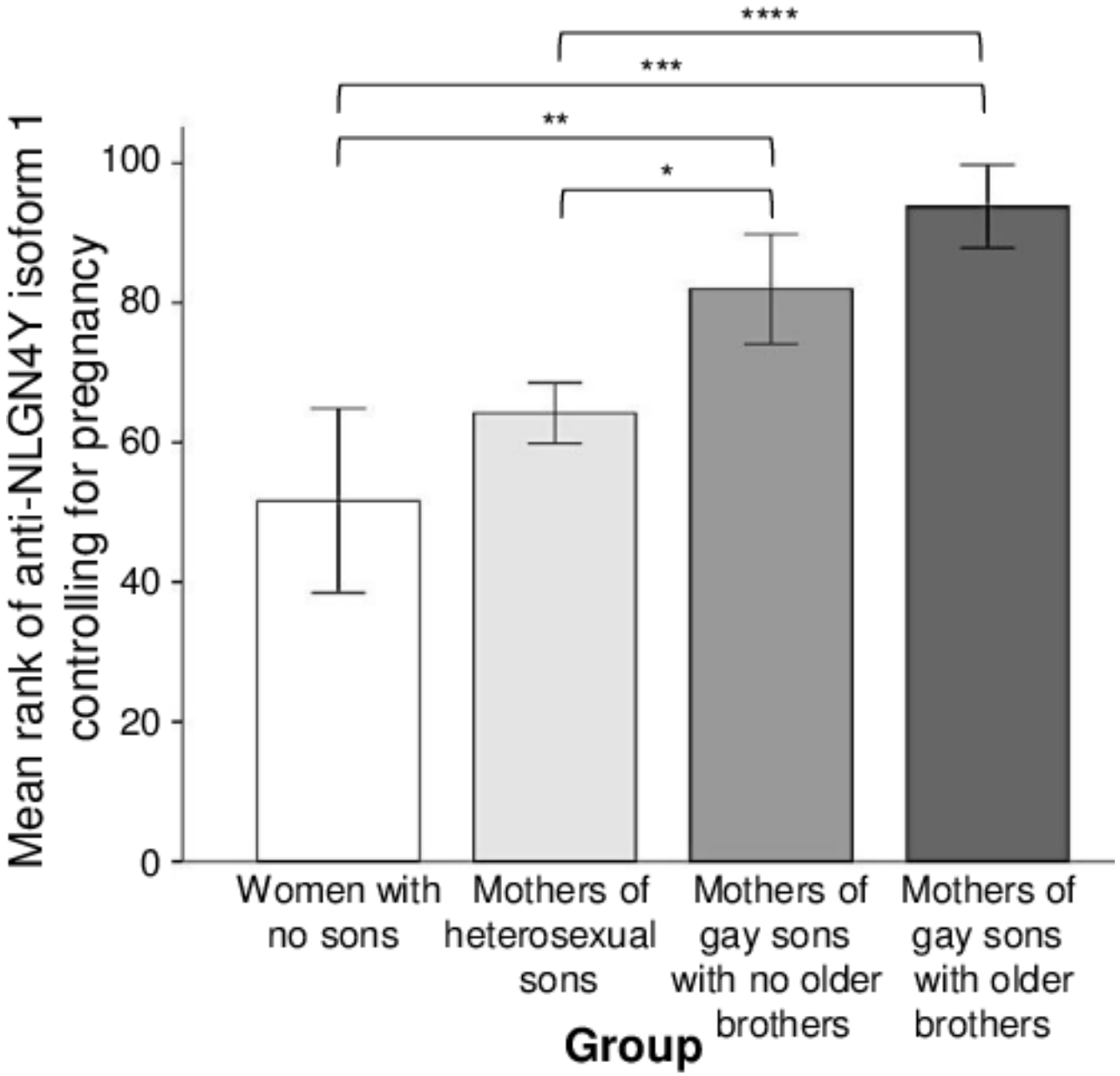
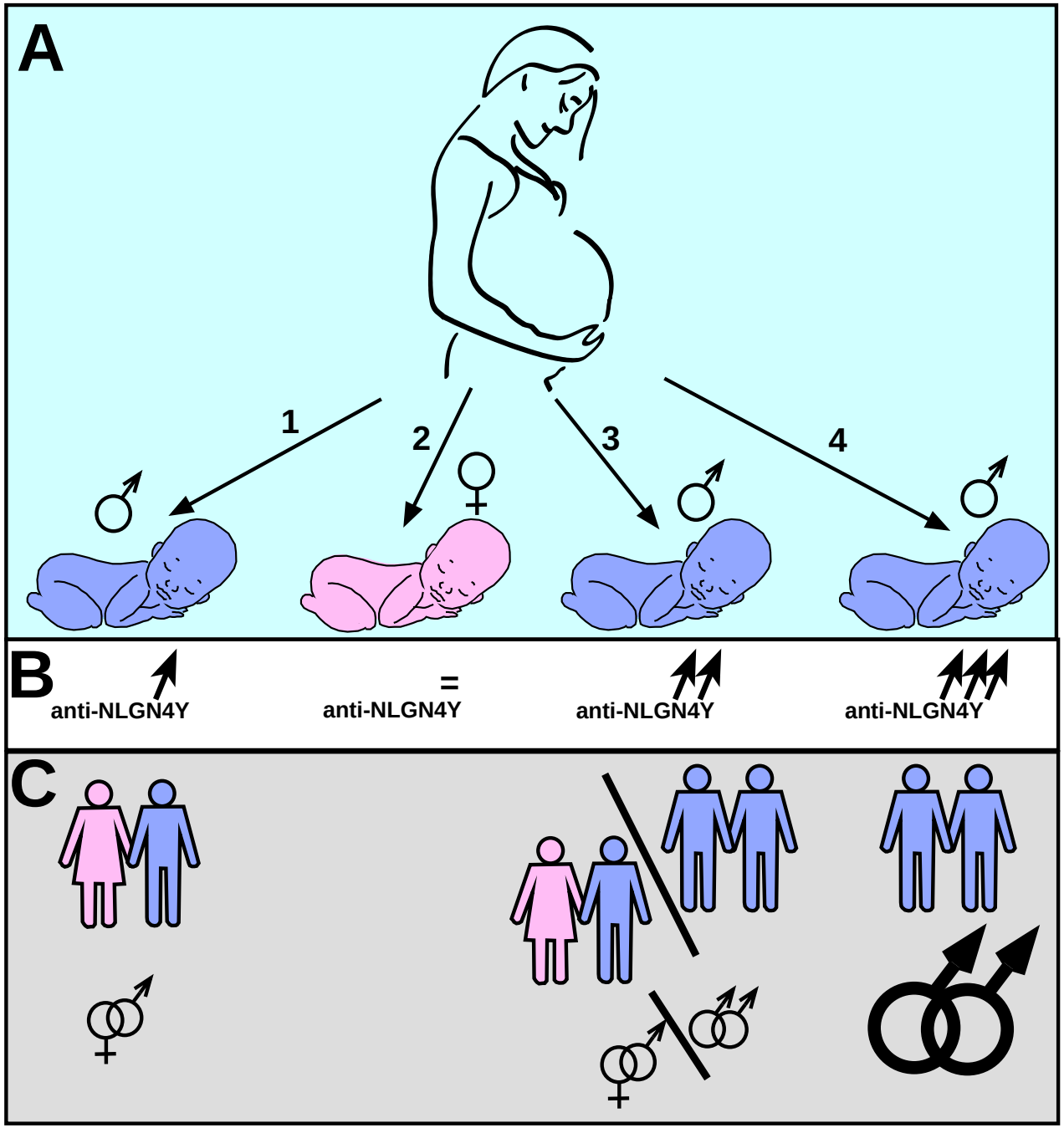
Homosexuality in Men and Number of Older Brothers

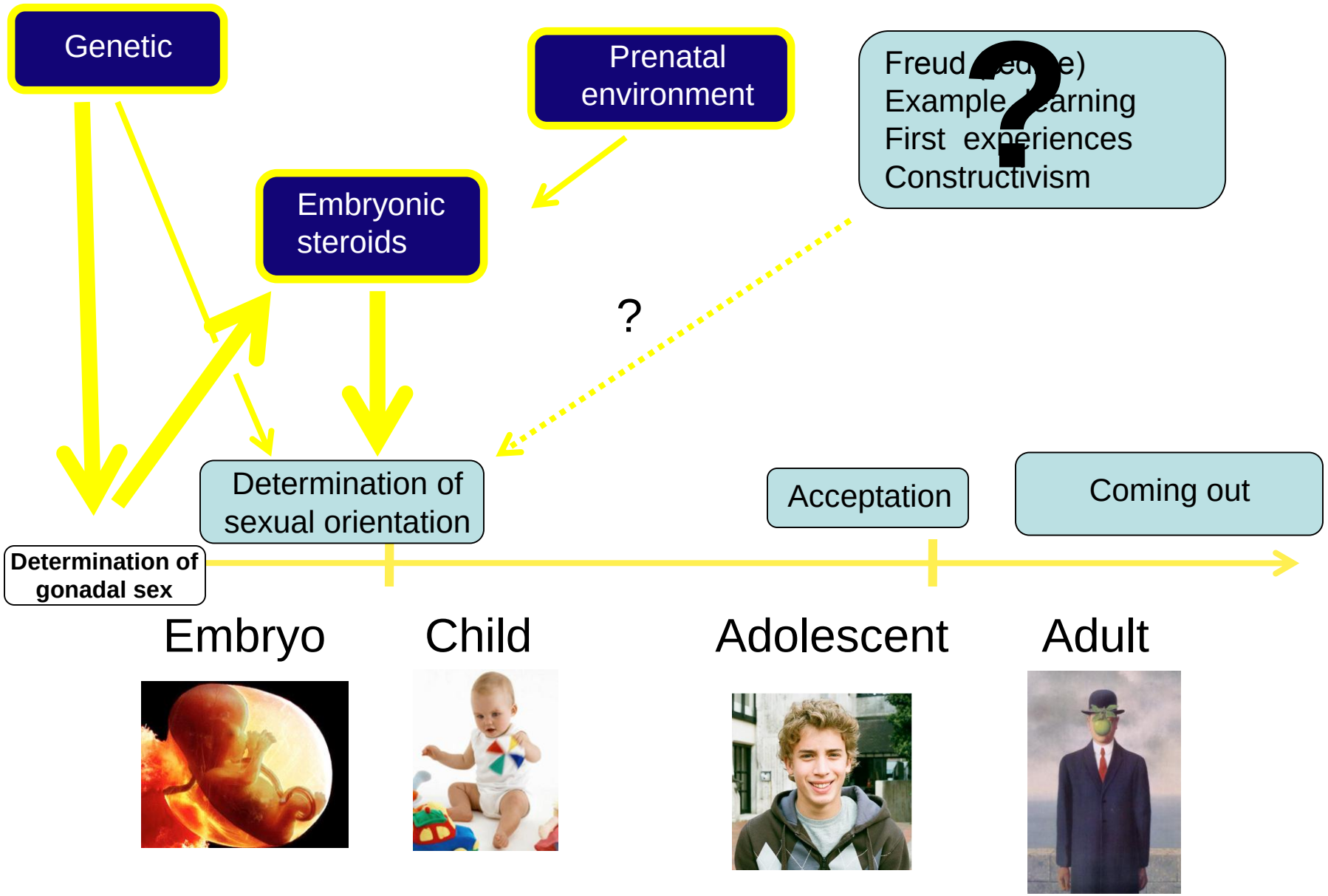
Ray Blanchard, Ph.D., and Anthony F. Bogaert, Ph.D.

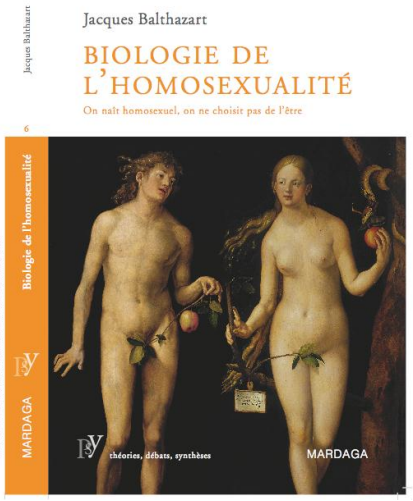
Tony Bogaert

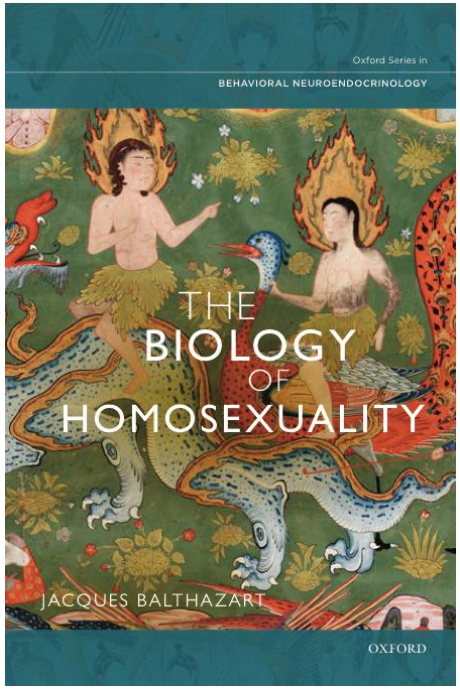
Antibodies to Neuroligin 4 Y-linked protein




A
1
2
3
4
B
anti-NLGN4Y
=
anti-NLGN4Y
anti-NLGN4Y
anti-NLGN4Y
C


Genetic
Prenatal environment
Freud (Oedipe)
Example, learning
First experiences
Constructivism
?
Embryonic steroids
?
Determination of sexual orientation
Acceptation
Coming out
Determination of gonadal sex
Embryo
Child
Adolescent
Adult





ΠΑΝΕΠΙΣΤΗΜΙΑΚΕΣ ΕΚΔΟΣΕΙΣ ΚΡΗΤΗΣ

Οι Πανεπιστημιακές Εκδόσεις Κρήτης σας προσκαλούν
την Πέμπτη 22 Φεβρουαρίου στο Impact Hub Athens,
Καραϊσκάκη 28, Ψυρρή, στις 19:00, στην παρουσίαση του βιβλίου

Η ΒΙΟΛΟΓΙΑ ΤΗΣ ΟΜΟΦΥΛΟΦΙΛΙΑΣ

ΘΑ ΜΙΛΗΣΟΥΝ ΟΙ:

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συγγραφέας του βιβλίου, Καθηγητής Συμπεριφορικής Νευροενδοκρινολογίας, GIGA Κέντρο Νευροεπιστημών, Πανεπιστήμιο Λιέγης, Βέλγιο

Χριστίνα Δάλλα
Επίκουρη Καθηγήτρια Ψυχοφαρμακολογίας, Ιατρική Σχολή, ΕΚΠΑ & Πρόεδρος της Ελληνικής Εταιρείας για τις Νευροεπιστήμες

Νίκος Βαϊδάκης
π. Αναπληρωτής Καθηγητής Α΄Ψυχιατρικής Κλινικής ΕΚΠΑ

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