

Psychiatry Grand Rounds

WCM Department of Psychiatry
Psychology CE Announcement

Early androgen exposure and human gender development

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11:00am – 12:30pm

<https://weillcornell.zoom.us/j/92812036154>

Meeting ID: 928 1203 6154

Password: 12345

1.5 CE credit available to WCM Department of Psychiatry full time and voluntary faculty Psychologists and Social Workers who sign in with their full name, attend the majority of the lecture and complete a survey which will be emailed following the completion of the lecture. Note the survey must be completed within 30 days of the lecture. Please contact wcmpsychiatryce@med.cornell.edu for additional CE information

SPEAKER: Dr. Hines has no relevant financial relationship(s) with ineligible companies to disclose and DOES NOT INTEND to discuss off-label or investigational use of products or services.

Melissa Hines is Professor of Psychology and Director of the Gender Development Research Centre at the University of Cambridge. She also is a Fellow at Churchill College, Cambridge. She is a past president of the International Academy of Sex Research, and the author of the book, *Brain Gender* (Oxford University Press). She is interested in factors influencing the development of gender-related behavior, including sexual orientation, gender identity, aggression, characteristics related to autism, and children's play behavior. In particular, she studies how gonadal steroids, such as testosterone, prenatally and neo-natally, shape human brain development and behavior, and in how these early hormonal influences interact with postnatal socialization to shape gendered outcomes. Melissa was educated at Princeton University (BA) and at the University of California, Los Angeles (UCLA) (PhD). Funders of her research include the United States Public Health Service, the United Kingdom Economic and Social Research Council, and the Wellcome Trust.

Abstract:

Androgenic hormones influence neurobehavioral development during sensitive periods of prenatal or neonatal life. Thousands of experimental studies of non-human mammals document these influences. Studies of people with genetic syndromes that cause unusual androgen exposure suggest similar influences on human development. For instance, girls and women exposed to high concentrations of androgens prenatally because they have congenital adrenal hyperplasia (CAH) show increased male-typical childhood play behavior, reduced identification with female gender assignment and reduced heterosexual interest. Similarly, the behavior of XY females who experience no effective androgen exposure because of complete androgen insensitivity syndrome (CAIS) generally show female-typical behavior. Normal variability in early androgen exposure also relates to later childhood play with higher androgen exposure predicting increased male-typical behavior. Other evidence suggests that androgenic influences work with social and cognitive influences to shape later behavior. In addition, some sex/gender related behaviors appear to develop independent of early androgen exposure. Overall androgens appear to influence human gender development, but social and cognitive factors are also influential. Future research might usefully investigate not only the range of outcomes influenced by early androgen exposure, but also how social and cognitive factors enhance or limit androgenic influences on sex/gender-related outcomes.

Learning Objectives:

1. Discuss how human gender development involves multiple psychological and behavioral characteristics (e.g., sexual orientation, gender identity, childhood play behavior, cognition, personality, psychiatric diagnoses).
2. Describe how early (prenatal / neonatal) androgen exposure contributes to some, but not all, gender related characteristics.
3. Discuss how early androgen exposure acts with other factors (e.g., postnatal socialization, culture) in different ways to influence specific gender related characteristics.

References:

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2. Davis, J., & Hines, M. (2020). How large are gender differences in toy Preferences? A Systematic Review and Meta-Analysis of Toy Preference Research. *Archives of Sexual Behavior*, 49(2), 373–394. <https://doi.org/10.1007/s10508-019-01624-7>
3. Hines, M. (2019). Neuroscience and Sex/Gender: Looking back and forward. *The Journal of Neuroscience/the Journal of Neuroscience*, 40(1), 37–43. <https://doi.org/10.1523/jneurosci.0750-19.2019>
4. Hines, M., Spencer, D., Kung, K. T. F., Browne, W. V., Constantinescu, M., & Noorderhaven, R. M. (2016). The early postnatal period, mini-puberty, provides a window on the role of testosterone in human neurobehavioural development. *Current Opinion in Neurobiology*, 38, 69–73. <https://doi.org/10.1016/j.conb.2016.02.008>
5. Hines, M., Pasterski, V., Spencer, D., Neufeld, S., Patalay, P., Hindmarsh, P. C., Hughes, I. A., & Acerini, C. L. (2016). Prenatal androgen exposure alters girls' responses to information indicating gender-appropriate behaviour. *Philosophical Transactions - Royal Society. Biological Sciences*, 371(1688), 20150125. <https://doi.org/10.1098/rstb.2015.0125>