

Dr. Hari Goyal

Publications:

- 1) Low androgen induced penile maldevelopment involves altered gene expression of biomarkers of smooth muscle differentiation and a key enzyme regulating cavernous smooth muscle cell tone. Okumu LA, Braden TD, Vail K, Simon L, **Goyal HO**. J Urol. 2014 Jul;192(1):267-73. doi: 10.1016/j.juro.2013.11.101. Epub 2013 Dec 6. PMID: 24316094 [PubMed - indexed for MEDLINE]
- 2) Estrogen-induced maldevelopment of the penis involves down-regulation of myosin heavy chain 11 (MYH11) expression, a biomarker for smooth muscle cell differentiation. Okumu LA, Brinton S, Braden TD, Simon L, **Goyal HO**. Biol Reprod. 2012 Nov 8;87(5):109. doi: 10.1095/biolreprod.112.103556. Print 2012 November. PMID: 22976277 [PubMed - indexed for MEDLINE] Free PMC Article
- 3) Exposure of neonatal rats to anti-androgens induces penile mal-developments and infertility comparable to those induced by oestrogens. Simon L, Avery L, Braden TD, Williams CS, Okumu LA, Williams JW, **Goyal HO**. Int J Androl. 2012 Jun;35(3):364-76. doi: 10.1111/j.1365-2605.2011.01232.x. Epub 2011 Dec 13. PMID: 22150386 [PubMed - indexed for MEDLINE]
- 4) The effects of chronic ingestion of mercuric chloride on fertility and testosterone levels in male Sprague Dawley rats. Heath JC, Abdelmageed Y, Braden TD, **Goyal HO**. J Biomed Biotechnol. 2012;2012:815186. doi: 10.1155/2012/815186. Epub 2012 Jul 4. PMID: 22829750 [PubMed - indexed for MEDLINE] Free PMC Article
- 5) Genetically induced estrogen receptor α mRNA (Esr1) overexpression does not adversely affect fertility or penile development in male mice. Heath J, Abdelmageed Y, Braden TD, Williams CS, Williams JW, Paulose T, Hernandez-Ochoa I, Gupta R, Flaws JA, **Goyal HO**. J Androl. 2011 May-Jun;32(3):282-94. doi: 10.2164/jandrol.110.010769. Epub 2010 Oct 7. PMID: 20930192 [PubMed - indexed for MEDLINE] Free PMC Article
- 6) Mal-development of the penis and loss of fertility in male rats treated neonatally with female contraceptive 17 α -ethinyl estradiol: a dose-response study and a comparative study with a known estrogenic teratogen diethylstilbestrol. Mathews E, Braden TD, Williams CS, Williams JW, Bolden-Tiller O, **Goyal HO**. Toxicol Sci. 2009 Dec;112(2):331-43. doi: 10.1093/toxsci/kfp207. Epub 2009 Sep 3. PMID: 19729556 [PubMed - indexed for MEDLINE] Free PMC Article
- 7) Estrogen-induced developmental disorders of the rat penis involve both estrogen receptor (ESR)- and androgen receptor (AR)-mediated pathways. Goyal HO, Braden TD, Williams CS, Williams JW. Biol Reprod. 2009 Sep;81(3):507-16. doi: 10.1095/biolreprod.108.071951. Epub 2009 May 6. PMID: 19420389 [PubMed - indexed for MEDLINE] Free PMC Article

- 8) Activation of Penile Proadipogenic Peroxisome Proliferator-Activated Receptor gamma with an Estrogen: Interaction with Estrogen Receptor Alpha during Postnatal Development. Mansour MM, Goyal HO, Braden TD, Dennis JC, Schwartz DD, Judd RL, Bartol FF, Coleman ES, Morrison EE. PPAR Res. 2008;2008:651419. doi: 10.1155/2008/651419. PMID: 18769493 [PubMed] Free PMC Article
- 9) Role of estrogen in induction of penile dysmorphogenesis: a review. **Goyal HO**, Braden TD, Williams CS, Williams JW. Reproduction. 2007 Aug;134(2):199-208. Review. PMID: 17660230 [PubMed - indexed for MEDLINE] Free Article
- 10) Estrogen receptor alpha mediates estrogen-inducible abnormalities in the developing penis. **Goyal HO**, Braden TD, Cooke PS, Szewczykowski MA, Williams CS, Dalvi P, Williams JW. Reproduction. 2007 May;133(5):1057-67. PMID: 17616734 [PubMed - indexed for MEDLINE] Free Article

Presentations:

1. **Goyal, H.**, T. Braden, C. Williams, and J. Williams, Role of estrogen in inducing penile dysmorphogenesis and loss of fertility, a review. National Symposium on Animal Resource Development Through Physiological, Nuclear, Genetic, and Biotechnological Interventions and 16th Conference of Society for Animal Physiologists of India. Assam Agricultural University, Guwahati, Assam, India, January 12, 2007
2. Heath J. C., Y. Abdelmageed, and **H. O. Goyal**, The Effects of Chronic Ingestion of Mercuric Chloride on the Fertility Rates of Male and Female Rats. 8th Annual Biomedical Research Symposium, Tuskegee University, Tuskegee, AL. September 19-21, 2007
3. Heath, J. C., Y. Abdelmageed, and **H. O. Goyal**, The Effects of Chronic Ingestion of Mercuric Chloride on the Fertility Rates of Female Rats. Paper presented at the 47th Teratology Society Annual Meeting, Pittsburgh, PA. June 23-28, 2007
4. **Goyal H.O.**, Role of estrogen in induction of penile dysmorphogenesis, SAVMA Symposium, College of Veterinary Medicine, Tuskegee and Auburn Universities, Auburn, Conference Center, Auburn, AL, March 21, 2008
5. **Goyal, H.O.**, T.D. Braden, C.S. Williams, and J.W. Williams, Estrogen receptor (ER) antagonist ICI 182,780, as well as androgen receptor (AR) agonist dihydrotestosterone (DHT) or testosterone (T), mitigates estrogen-induced developmental disorders of the penis. 41st Annual Meeting of the Society for the Study of Reproduction, Kailua-Kona, Hawaii, May 27-30, 2008
6. Heath, J.C., Abdelmageed, Y., Braden, T.D., Nichols, A.C., Steffy, D.A. & **Goyal, H.O.** The Comparative Effects of Chronic Ingestion of Methylmercury on Fertility in

male and female Sprague Dawley Rats. 48th Annual Teratology Society Meeting. Monterey, CA, June 28th – July 2nd 2008

7. **Goyal H.O.**, Environmental Estrogens and Reproductive Disorders. Invited lecture at Raising the Bar: Celebrating 28 Years of Scholastic Achievement, Distinguished Faculty and Cutting-Edge Research: A Program in Honor of President Benjamin F. Payton's Retirement and His Legacy of Outstanding Leadership. Tuskegee University, Tuskegee, AL, April 14, 2010
8. Mathews, Ensa*, O. Bolden-Tiller, C. Williams, and **H.O. Goyal**, The effect of estrogen analogues on the testis, epididymis and penis in rats. Society for the Study of Reproduction, Pittsburgh, PA, July 20, 2009
9. Heath J, Y Abdelmageed, TD Braden, CS Williams, JW Williams, T Paulose, I Hernandez-Ochoa, RGupta, J A Flaws, **HO Goyal**: Genetically-induced estrogen receptor alpha (ESR1) overexpression does not adversely affect fertility or penile development in male mice (43rd Annual Meeting for the Study of Reproduction, July 30, 2010; Milwaukee, WI)
10. **Goyal HO**, Braden TD, Mansour M, Simon L, Williams CS, and Williams JW: Mechanism of Estrogen-Induced Developmental Penile Disorders. Invited Plenary Lecture at the International Symposium on Current Trends in Endocrine and Reproductive Health, Mysore, India, February 9-12, 2011
11. **Goyal HO**, Braden TD, Mansour M, Simon L, Williams CS, and Williams JW: Estrogen-induced mal-development of the penis: Summary of five-year study. Presentation at the American Society of Andrology Meeting, April 2-5, 2011; Montreal, Canada
12. Simon L, Avery L, Braden TD, Williams CS, Okumu LA, Williams JW, **Goyal HO**: Exposure of anti-androgens to neonatal rats induces mal-development of the penis and infertility similar to that of estrogen exposure. Presentation at the 44th Annual Meeting for the Study of Reproduction, July 31, 2011; Portland, OR)
13. **Goyal HO**, Braden TD, Mansour M, Simon L, Williams CS, and Williams JW: Mechanism of Estrogen-Induced Developmental Penile Disorders. Invited Plenary Lecture at the International Congress on Reproduction, New Delhi, February 19-21, 2012
14. Okumu, LA., Simon L, Braden T, **Goyal HO**: Penile dysmorphogenesis in rats treated neonatally with diethylstilbestrol (DES) is mediated through stromal cell reprogramming towards increased adipogenesis and loss of smooth muscle. Presentation at the 37th American Society of Andrology Meeting, April 21-24, 2012; Tucson, Arizona

15. Okumu, LA, Simon L, Braden TD, and **Goyal HO**: Penile dysmorphogenesis in rats treated neonatally with Diethylstilbestrol (DES) is mediated through stromal cell reprogramming toward increased adipogenesis and loss of smooth muscle. Presented at the 37th Annual Conference of the American Society of Andrology, April 21-24, 2012; Tucson, Arizona
16. Heath J, Y Abdelmageed, TD Braden, CS Williams, JW Williams, T Paulose, I Hernandez-Ochoa, RGupta, J A Flaws, **HO Goyal**: Genetically-induced estrogen receptor alpha (ESR1) overexpression does not adversely affect fertility or penile development in male mice (43rd Annual Meeting for the Study of Reproduction, July 30, 2010; Milwaukee, WI)
17. Simon L, Avery L, Braden TD, Williams CS, Okumu LA, Williams JW, **Goyal HO**: Exposure of anti-androgens to neonatal rats induces mal-development of the penis and infertility similar to that of estrogen exposure. Presentation at the 44th Annual Meeting for the Study of Reproduction, July 31, 2011; Portland, OR)
18. Bruinton S, Okumu LA, Braden TD, Simon L, and **Goyal HO**: Exposure of neonatal rats to anti-androgens induces mal-development and fat accumulation in the penis. Presented at the 45th Annual Meeting for the Society for the Study of Reproduction, August 12-15, 2012; Pennsylvania State University, Pennsylvania
19. Bidot W, Okumu LA, Simon L, and **Goyal HO**: Neonatal oral administration of 17 alpha-ethinyl estradiol to male rats induces accumulation of fat and decreases smooth muscle cell differentiation in the penis. Presented at Phi Zeta Research Day; September 20-21, 2012; Tuskegee University, Alabama
20. Vail K, Okumu LA, Simon L, and **Goyal HO**: Anti-androgen exposure neonatally suppresses the testosterone surge resulting in decreased proliferation of stromal cells in the rat penis. Presented at Phi Zeta Research Day; September 20-21, 2012; Tuskegee University, Alabama
21. Clements C, Okumu LA, Simon L, and **Goyal HO**: Neonatal DES exposure inhibits steroidogenesis resulting in mal-development of the penis. Presented at Phi Zeta Research Day; September 20-21, 2012; Tuskegee University, Alabama
22. **Goyal HO**, Okumu LA, Braden TD, and Simon L: Neonatal anti-androgen exposure of male rats alters gene expression for smooth muscle and fat cell differentiation in the penis: Presented at the International Symposium on Health Disparities, December 9-13, 2012; San Juan, Puerto Rico
23. **Goyal HO**, Braden TD, Simon L, and Okumu LA: Endocrine Disruptors and Mal-development of Male Reproductive Organs: Effects of Estrogen and Anti-androgen: Invited Plenary Lecture at the International Conference on Reproductive Health, February 7-9, 2013; Trivandrum, India (invited presentation, PI)

24. **Goyal HO**, Braden TD, and Okumu LA: Mechanism of Estrogen- or Antiandrogen-Induced Penile Development: Presented at the European Congress of Andrology, Barcelona, Spain, October 15-17, 2014

25. **Goyal HO**, Braden TD, and Okumu LA: Mechanism of Estrogen-Induced Penile Development: Summary of 10-years of Study: Invited Plenary Lecture at the International Congress on Reproductive Health with Emphasis on Occupational, Environmental and Lifestyle Factors, Ahmedabad, India, February 18-20, 2016