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EDUCATION/TRAINING			
INSTITUTION AND LOCATION	DEGREE	YEAR(s)	FIELD OF STUDY
University of Utah, Salt Lake City, UT	B.S.	1997-2000	Biochemistry
Sackler School of Medicine, Tel Aviv University Tel Aviv, Israel	M.D.	2001-2005	Medicine
Rutgers New Jersey Medical School – UMDNJ, Newark, NJ	Residency	2005-2009	Obstetrics & Gynecology
Emory University School of Medicine, Atlanta, GA	Fellowship	2009-2012	Reproductive Endocrinology & Infertility

# **Professional Appointments:**

#### Current:

- Medical Director, West Coast Fertility Centers, Fountain Valley, CA
- Clinical Associate Professor OBGYN, University of California Irvine
- Attending Physician OBGYN, University of California Irvine Medical Center, Orange, CA

## Past:

- 2020-2022: Medical Director, Evicore Healthcare/Cigna
- 2019-2020: Medical Director, Eden Centers for Advanced Fertility, Newport Beach, CA
- 2015-2019: Director Division of Reproductive Endocrinology and Infertility, Wyckoff Heights Medical Center, Brooklyn, NY
- 2012-2019: Attending Physician OBGYN, Lenox Hill Hospital, New York, NY
- 2015-2019: Adjunct Assistant Professor OBGYN, Wake Forest School of Medicine, Winston-Salem, NC
- 2019: Medical Director, Neway Fertility, New York, NY
- 2012-2019: Director of Fertility Preservation Center, Director of Continuing Medical Education, Associate Scientist, Center for Human Reproduction, New York, NY
- 2012-2013: Consultant for Division of Reproductive Health, Centers for Disease Control and Prevention, Atlanta, GA
- 2013-2016: Attending Surgeon, Center for Specialty Care, New York, NY
- 2009-2019: Associate Faculty Member: Faculty of 1000
- 2006-2008: American Congress of Obstetricians and Gynecologists, Junior Fellow Chair, New Jersey Section

## **Accreditation:**

- ABOG Certified in OBGYN 11/11/11 and REI 4/6/16
- Active Medical Licenses: CA, NY, NJ, TX, IL, VA, PA, MA
- Past Medical Licenses: GA, CT, FL
- Fluent in English, Russian
- US Citizen
- CA Fluoroscopy
- ACLS/BLS
- DEA

# **Professional Memberships:**

- American College of Obstetrics and Gynecology
- American Society for Reproductive Medicine
- Society for Reproductive Endocrinology and Infertility
- Society for Gynecologic Investigation
- New York Obstetrical Society
- The Endocrine Society

## **Original Articles:**

- 1. **Kushnir VA**, Smith GD, Adashi EY. The Future of IVF: The New Normal in Human Reproduction. Reprod Sci. 2022 Mar;29(3):849-856.
- 2. Xu, Chen-Ming, et al. Preimplantation Genetic Testing Guidelines of International Society of Reproductive Genetics, Reproductive and Developmental Medicine 7(1):p 3-11, Mar 2023.
- 3. **Kushnir VA**, Kashani B, Adashi EY. Reproductive healthcare during a pandemic: a New York state of mind. Reprod Biomed Online. 2020 Sep;41(3):370-372
- 4. Weghofer A, Barad DH, Darmon SK, **Kushnir VA**, Albertini DF, Gleicher N, Euploid miscarriage is associated with elevated serum C-reactive protein levels in infertile women: a pilot study. Arch Gynecol Obstet. 2020 Mar;301(3):831-836.
- 5. Weghofer A, **Kushnir VA**, Darmon SK, Jafri H, Lazzaroni-Tealdi E, Zhang L, Albertini DF, Barad DH, Gleicher N. Age, body weight and ovarian function affect oocyte size and morphology in non-PCOS patients undergoing intracytoplasmic sperm injection (ICSI). PLoS One. 2019 Oct 24;14(10):e0222390.
- 6. Cicinelli E, Vitagliano A, et. al; International Working Group for Standardization of Chronic Endometritis Diagnosis. Unified diagnostic criteria for chronic endometritis at fluid hysteroscopy: proposal and reliability evaluation through an international randomized-controlled observer study. Fertil Steril. 2019 Jul;112(1):162-173.e2.
- 7. **Kushnir VA**, Darmon SK, Barad DH, Weghofer A, Gleicher N. Effects of dehydroepiandrosterone (DHEA) supplementation on sexual function in premenopausal infertile women. Endocrine. 2019 Mar;63(3):632-638.
- 8. Gleicher N, **Kushnir VA**, Barad DH. Worldwide decline of IVF birth rates and its probable causes. Hum Reprod Open. 2019 Aug 8;2019(3):hoz017
- 9. Wang Q, Barad DH, Darmon SK, **Kushnir VA**, Wu YG, Lazzaroni-Tealdi E, Zhang L, Albertini DF, Gleicher N. Reduced RNA expression of the FMR1 gene in women with low (CGGn<26) repeats. PLoS One. 2018 Dec 21;13(12):e0209309.

- 10. **Kushnir VA**, Darmon SK, Barad DH, Gleicher N. Observational retrospective study of U.S. national utilization patterns and live birth rates for various ovarian stimulation protocols for in vitro fertilization. BMJ Open. 2018 Nov 8;8(11):e023124
- 11. Roy S, Gandra D, Seger C, Biswas A, **Kushnir VA**, Gleicher N, Kumar TR, Sen A. Oocytederived factors (GDF9 and BMP15) and FSH regulate AMH expression via modulation of H3K27AC in granulosa cells, Endocrinology. 2018 Sep 1;159(9):3433-3445.
- 12. Gleicher N, **Kushnir VA**, Darmon S, Albertini DF, Barad DH. Older women using their own eggs? Issue framed with two oldest reported IVF pregnancies and a live birth. Reprod Biomed Online. 2018 Aug;37(2):172-177.
- 13. Shapiro AJ, Darmon SK, Barad DH, Gleicher N, **Kushnir VA**. Vitamin D levels are not associated with ovarian reserve in a group of infertile women with a high prevalence of diminished ovarian reserve. Fertil Steril. 2018 Sep;110(4):761-766.e1.
- 14. Wu YG, Barad DH, **Kushnir VA**, Wang Q, Zhang L, Darmon SK, Albertini DF, Gleicher N. With low ovarian reserve, Highly Individualized Egg Retrieval (HIER) improves IVF results by avoiding premature luteinization. J Ovarian Res. 2018 Mar 16;11(1):23.
- 15. **Kushnir VA**, Darmon SK, Barad DH, Gleicher N. Degree of mosaicism in trophectoderm does not predict pregnancy potential: a corrected analysis of pregnancy outcomes following transfer of mosaic embryos. Reprod Biol Endocrinol. 2018 Jan 26:16(1):6.
- 16. Gleicher N, **Kushnir VA**, Darmon SK, Wang Q, Zhang L, Albertini DF, Barad DH. Suspected ontogeny of a recently described hypo-androgenic PCOS-like phenotype with advancing age. Endocrine. 2018 Mar;59(3):661-676
- 17. **Kushnir VA**, Darmon SK, Barad DH, Gleicher N. New national outcome data on fresh versus cryopreserved donor oocytes. J Ovarian Res. 2018 Jan 5;11(1):2.
- 18. Barad DH, Darmon SK, **Kushnir VA**, Albertini DF, Gleicher N. Impact of Preimplantation Genetic Screening on Donor oocyte-recipient cycles in the United States. Am J Obstet Gynecol. 2017 Nov;217(5):576.e1-576.e8.
- 19. **Kushnir VA**, Seifer DB, Barad DH, Sen A, Gleicher N. Potential Therapeutic Applications of Human Anti-Müllerian Hormone (AMH) Analogues in Reproductive Medicine. J Assist Reprod Genet. 2017 Sep;34(9):1105-1113.
- 20. Shapiro AJ, Darmon SK, Barad DH, Albertini DF, Gleicher N, **Kushnir VA.** Effect of race and ethnicity on utilization and outcomes of assisted reproductive technology in the USA. Reprod Biol Endocrinol. 2017 Jun 8;15(1):44.
- 21. **Kushnir VA**, Choi J, Darmon SK, Albertini DF, Barad DH, Gleicher N. CDC-Reported Assisted Reproductive Technology Live Birth Rates May Mislead the Public. Reprod Biomed Online. 2017 Aug;35(2):161-164.
- 22. Barad DH, Darmon S, Weghofer A, Latham GJ, Filipovic-Sadic, Wang Q, **Kushnir VA**, Albertini DF, Gleicher N. Association of skewed X-chromosome inactivation with FMR1 CGG repeat length and anti-Mullerian hormone levels: a cohort study. Reprod Biol Endocrinol. 2017 Apr 28;15(1):34.
- 23. Gleicher N, Metzger J, Croft G, **Kushnir VA**, Albertini DF, Barad DH. A single trophectoderm biopsy at blastocyst stage is mathematically unable to determine embryo ploidy accurately enough for clinical use. Reprod Biol Endocrinol. 2017 Apr 27;15(1):33.
- 24. **Kushnir VA**, Safdie M, Darmon SK, Albertini DF, Barad DH, Gleicher N. Age-Specific IVF Outcomes in Infertile Women with Baseline FSH Levels ≥20 mIU/mL. Reprod Sci. 2018 Jun;25(6):893-898.
- 25. Gleicher N, **Kushnir VA**, Barad DH. Redirecting reproductive immunology research toward pregnancy as a period of temporary immune tolerance. J Assist Reprod Genet. 2017 Apr;34(4):425-430.

- 26. **Kushnir VA**, Barad DH, Albertini DF, Darmon SK, Gleicher N. Systematic review of worldwide trends in assisted reproductive technology 2004–2013. Reprod Biol Endocrinol. 2017 Jan 10:15(1):6.
- 27. Gleicher N, **Kushnir VA**, Barad DH. Elective single-embryo transfer (eSET) reduces pregnancy rates and should only be used in exceptional circumstances: FOR: The statistically flawed model of eSET. BJOG. 2017 Apr;124(5):755.
- 28. Gleicher N, **Kushnir VA**, Darmon SK, Wang Q, Zhang L, Albertini DF, Barad DH. New PCOS-like phenotype in older infertile women of likely autoimmune adrenal etiology with high AMH but low androgens. J Steroid Biochem Mol Biol. 2017 Mar; 167:144-152.
- 29. **Kushnir VA**, Ďarmon SK, Shapiro AJ, Albertini DF, Barad DH, Gleicher N. Utilization of third party in vitro fertilization in the United States. Am J Obstet Gynecol. 2017 Mar;216(3):266.e1-266.e10.
- 30. Barad DH, **Kushnir VA**, Gleicher N. Focus on recurrent miscarriage phenotypes. Fertil Steril. 2017 Jan;107(1):64-65
- 31. **Kushnir VA**, Gleicher N. Fresh versus cryopreserved oocyte donation. Curr Opin Endocrinol Diabetes Obes. 2016 Dec;23(6):451-457.
- 32. Gleicher N, Vidali A, Braverman J, **Kushnir VA**, Barad DH, Hudson C, Wu Y, Wang Q, Zhang L, Albertini DF. Accuracy of preimplantation genetic screening (PGS) is compromised by degree of mosaicism of human embryos. Reprod Biol Endocrinol. 2016 Sep 5;14(1):54
- 33. Wu YG, Lazzaroni-Tealdi E, Wang Q, Zhang L, Barad DH, **Kushnir VA**, Darmon SK, Albertini DF, Gleicher N. Different effectiveness of closed embryo culture system with time-lapse imaging (EmbryoScope<sup>TM</sup>) in comparison to standard manual embryology in good and poor prognosis patients: a prospectively randomized pilot study. Reprod Biol Endocrinol. 2016 Aug 24;14(1):49
- 34. Vega M, Barad DH, Yu Y, Darmon SK, Weghofer A, **Kushnir VA**, Gleicher N. Anti-mullerian hormone levels decline with the presence of antiphospholipid antibodies. Am J Reprod Immunol. 2016 Oct;76(4):333-7.
- 35. Gleicher N, Darmon SK, Kushnir VA, Weghofer A, Wang Q, Zhang L, Albertini DF, Barad DH. How FSH and AMH reflect probabilities of oocyte numbers in poor prognosis patients with small oocyte yields. Endocrine. 2016 Nov;54(2):476-483.
- 36. Barad DH, **Kushnir VA**, Gleicher N. The importance of redundancy of functional ovarian reserve when investigating potential genetic effects on ovarian function. J Assist Reprod Genet. 2016 Sep;33(9):1157-60.
- 37. Vega MG, Gleicher N, Darmon SK, Weghofer A, Wu YG, Wang Q, Zhang L, Albertini DF, Barad DH, **Kushnir VA**. IVF outcomes in average- and poor-prognosis infertile women according to the number of embryos transferred. Reprod Biomed Online. 2016 Sep;33(3):370-5.
- 38. Gleicher N, **Kushnir VA**, Sen A, Darmon SK, Weghofer A, Wu YG, Wang Q, Zhang L, Albertini DF, Barad DH. Definition by FSH, AMH and embryo numbers of good-, intermediate- and poor-prognosis patients suggests previously unknown IVF outcome-determining factor associated with AMH. J Transl Med. 2016 Jun 10;14(1):172.
- 39. Hayes E, **Kushnir V**, Ma X, Biswas A, Prizant H, Gleicher N, Sen A. Intra-cellular mechanism of Anti-Müllerian hormone (AMH) in regulation of follicular development. Mol Cell Endocrinol. 2016 Sep 15;433:56-65
- 40. **Kushnir VA**, Barad DH, Albertini DF, Darmon SK, Gleicher N. Effect of Embryo Banking on U.S. National Assisted Reproductive Technology Live Birth Rates. PLoS One. 2016 May 9;11(5):e0154620.
- 41. Gleicher N, **Kushnir VA**, Albertini D, Barad DH. Improvements in IVF in women of advanced age. J Endocrinol. 2016 Jul;230(1):F1-6.
- 42. Gleicher N, **Kushnir VA**, Barad DH, Risks of spontaneously and IVF-conceived singleton and twin pregnancies differ, requiring reassessment of statistical premises favoring elective single embryo transfer (eSET). Reprod Biol Endocrinol. 2016 May 3;14(1):25.
- 43. Weghofer A, Barad DH, Darmon S, **Kushnir VA**, Gleicher N. What affects functional ovarian reserve, thyroid function or thyroid autoimmunity? Reprod Biol Endocrinol. 2016 May 10;14(1):26.
- 44. Gleicher N, **Kushnir VA**, Weghofer A, Barad DH. The importance of adrenal hypoandrogenism in infertile women with low functional ovarian reserve: a case study of associated adrenal insufficiency. Reprod Biol Endocrinol. 2016 Apr 26;14(1):23.

- 45. **Kushnir VA**, Darmon SK, Albertini DF, Barad DH, Gleicher N. Effectiveness of in vitro fertilization with preimplantation genetic screening: a re-analysis of United States Assisted Reproductive Technology Data 2011-2012. Fertil Steril. 2016 Jul;106(1):75-9.
- 46. **Kushnir VA**, Solouki S, Sarig-Meth T, Vega MG, Albertini DF, Darmon SK, Deligdisch L, Barad DH, Gleicher N. Systemic inflammation and autoimmunity in women with chronic endometritis. Am J Reprod Immunol. 2016 Jun;75(6):672-7.
- 47. Gleicher N, **Kushnir VA**, Barad DH. The impact of patient preselection on reported IVF outcomes. J Assist Reprod Genet. 2016 Apr;33(4):455-9.
- 48. Gleicher N, Seier K, **Kushnir VA**, Weghofer A, Wu YG, Wang Q, Albertini DF, Barad DH, Associations between peripheral androgens and cortisol in infertile women, J Steroid Biochem Mol Biol. 2016 Apr;158:82-9.
- 49. Lazzaroni-Tealdi E, Barad DH, Albertini DF, Yu Y, **Kushnir VA**, Russell H, Wu YG, Gleicher N. Oocyte Scoring Enhances Embryo-Scoring in Predicting Pregnancy Chances with IVF Where It Counts Most. PLoS One. 2015 Dec 2;10(12):e0143632.
- 50. Lee HJ, Barad DH, **Kushnir VA**, Shohat-Tal A, Lazzaroni-Tealdi E, Wu YG, Gleicher N. Rescue in vitro maturation (IVM) of immature oocytes in stimulated cycles in women with low functional ovarian reserve (LFOR). Endocrine. 2016 Apr;52(1):165-71
- 51. Gleicher N, Vega MV, Darmon SK, Weghofer A, Wu YG, Wang Q, Zhang L, Albertini DF, Barad DH, **Kushnir VA**. Live-birth rates in very poor prognosis patients, who are defined as poor responders under the Bologna criteria, with nonelective single embryo, two-embryo, and three or more embryo transfers. Fertil Steril. 2015 Dec;104(6):1435-41.
- 52. Gleicher N, **Kushnir VA**, Barad DH. Why Prospectively Randomized Clinical Trials Have Been Rare in Reproductive Medicine and Will Remain So? Reprod Sci. 2016 Jan;23(1):6-10.
- 53. **Kushnir VA**, Barad DH, Albertini DF, Darmon SK, Gleicher N. Outcomes of fresh and cryopreserved oocyte donation. JAMA. 2015 Aug 11;314(6):623-4
- 54. Wu Y, Barad DH, **Kushnir VA**, Lazzaroni E, Wang Q, Albertini D, Gleicher N. Aging-related premature luteinization of granulosa cells is avoided by early oocyte retrieval. J Endocrinol. 2015 Sep;226(3):167-80.
- 55. Gleicher N, Yu Y, Himaya E, Barad DH, Weghofer A, Wu YG, Albertini DF, Wang VQ, **Kushnir VA**. Early decline in functional ovarian reserve in young women with low (CGG<26) FMR1 gene alleles. Transl Res. 2015 Nov;166(5):502-507.e2
- 56. **Kushnir VA**, Halevy N, Barad DH, Albertini DF, Gleicher N. Relative importance of AMH and androgens changes with aging among non-obese women with polycystic ovary syndrome. J Ovarian Res. 2015 Jul 9;8(1):45.
- 57. Weghofer A, Himaya E, **Kushnir VA**, Barad DH, Gleicher N. The impact of thyroid function and thyroid autoimmunity on embryo quality in women with low functional ovarian reserve: a case-control study. Reprod Biol Endocrinol. 2015 May 15;13(1):43.
- 58. Gleicher N, McCulloh DH, **Kushnir VA**, Ganguly N, Barad DH, Goldman KN, Kushnir MM, Albertini DF, Grifo JA. Is there an androgen level threshold for aneuploidy risk in infertile women? Reprod Biol Endocrinol. 2015 May 6;13(1):38.
- 59. Shohat-Tal A, Sen A, Barad DH, **Kushnir Ý**, Gleicher N. Genetics of androgen metabolism in women with infertility and hypoandrogenism. Nat Rev Endocrinol. 2015 Jul;11(7):429-441
- 60. Weghofer A, Himaya E, **Kushnir VA**, Barad DH, Lazzaroni-Tealdi E, Yu Y, Wu YG, Gleicher N. Some aspects of interactivity between endocrine and immune systems required for successful reproduction. Reprod Biol Endocrinol. 2015 Apr 11;13(1):29.
- 61. Gleicher N, **Kushnir VA**, Barad DH. Prospectively assessing risk for premature ovarian senescence in young females: a new paradigm. Reprod Biol Endocrinol. 2015 Apr 18;13(1):34.
- 62. Gleicher N, **Kushnir VA**, Barad DH. Is it time for a paradigm shift in understanding embryo selection? Reprod Biol Endocrinol. 2015 Jan 11;13(1):3
- 63. **Kushnir VA**, Khanna P, Barad DH, Gleicher N. Establishment of comparative performance criteria for IVF centers: correlation of live birth rates in autologous and donor oocyte IVF cycles. Reprod Biol Endocrinol. 2014 Dec 4;12(1):122
- 64. **Kushnir VA**, Barad DH, Gleicher N. Ovarian reserve screening prior to contraception? Reprod Biomed Online. 2014 Nov;29(5):527-9
- 65. Gleicher N, **Kushnir VA**, Weghofer A, Barad DH. How the FMR1 gene became relevant to female fertility and reproductive medicine. Front Genet. 2014 Aug 29;5:284
- 66. **Kushnir VA**, Gleicher N. Male factor infertility: Prediction models for assisted reproductive technology. Nat Rev Urol. 2014 Sep;11(9):492-3

- 67. **Kushnir VA**, Yu Y, Barad DH, Weghofer A, Himaya E, Lee HJ, Wu YG, Shohat-Tal A, Lazzaroni-Tealdi E, Gleicher N. Utilizing FMR1 gene mutations as predictors of treatment success in human in vitro fertilization. PLoS One. 2014 Jul 14;9(7):e102274.
- 68. Gleicher N, McAlpine JN, Gilks CB, **Kushnir VA**, Lee HJ, Wu YG, Lazzaroni-Tealdi E, Barad DH. Absence of BRCA/FMR1 Correlations in Women with Ovarian Cancers. PLoS One. 2014 Jul 18;9(7):e102370.
- 69. Gleicher N, **Kushnir VA**, Weghofer A, Barad DH. The "graying" of infertility services: an impending revolution nobody is ready for. Reprod Biol Endocrinol. 2014 Jul 9;12(1):63.
- 70. Barad DH, **Kushnir VA**, Lee HJ, Lazzaroni E, Gleicher N. Effect of inter-cycle interval on oocyte production in humans in the presence of the weak androgen DHEA and follicle stimulating hormone: a case-control study. Reprod Biol Endocrinol. 2014 Jul 21;12(1):68.
- 71. Gleicher N, **Kushnir VA**, Barad DH. Preimplantation genetic screening (PGS) still in search of a clinical application: a systematic review. Reprod Biol Endocrinol. 2014 Mar 15;12(1):22.
- 72. Barad DH, Yu Y, **Kushnir VA**, Shohat-Tal A, Lazzaroni E, Lee HJ, Gleicher N. A randomized clinical trial of endometrial perfusion with granulocyte colony-stimulating factor in in vitro fertilization cycles: impact on endometrial thickness and clinical pregnancy rates. Fertil Steril. 2014 Mar;101(3):710-5.
- 73. Kissin DM, Kulkarni AD, **Kushnir VA**, Jamieson DJ; Number of Embryos Transferred After In Vitro Fertilization and Good Perinatal Outcome. Obstet Gynecol. 2014 Feb;123(2 Pt 1):239-47.
- 74. Sen A, **Kushnir VA**, Barad DH, Gleicher N. Endocrine Autoimmune Diseases and Female Infertility. Nat Rev Endocrinol. 2014 Jan;10(1):37-50.
- 75. Gleicher N, **Kushnir VA**, Barad DH. Therapeutic Interventions into Early Stages of Follicle Maturation: A New Treatment Paradigm After Over 50 Years of Modern Infertility Therapy. Endocrinology 2013 154: 3498-3501.
- 76. Gleicher N, Kim A, Barad DH, Shohat-Tal A, Lazzaroni E, Michaeli T, Lee HJ, **Kushnir VA**, Weghofer A. FMR1-dependent variability of ovarian aging patterns is already apparent in young oocyte donors. Reprod Biol Endocrinol. 2013 Aug 16;11(1):80.
- 77. Gleicher N, Weghofer A, **Kushnir VA**, Shohat-Tal A, Lazzaroni É, Lee HJ, Barad DH. Is androgen production in association with immune system activation potential evidence for existence of a functional adrenal/ovarian autoimmune system in women? Reprod Biol Endocrinol. 2013 Jun 27;11(1):58.
- 78. **Kushnir VA**, Vidali A, Barad DH, Gleicher N. The status of public reporting of clinical outcomes in assisted reproductive technology. Fertil Steril. 2013 Sep;100(3):736-741.e2.
- 79. Gleicher N, Kim A, **Kushnir V**, Weghofer A, Shohat-Tal A, Lazzaroni E, Leé HJ, Barad DH. Clinical Relevance of Combined FSH and AMH Observations in Infertile Women. J Clin Endocrinol Metab. 2013 May;98(5):2136-45
- 80. **Kushnir VA**, Kim A, Gleicher N, Barad DH. A pilot trial of large versus small diameter needles for oocyte retrieval. Reprod Biol Endocrinol. 2013 Mar 20;11(1):22.
- 81. Gleicher N, Kim A, Weghofer A, **Kushnir VA**, Shohat-Tal A, Lazzaroni E, Lee HJ, Barad DH Hypoandrogenism in association with diminished functional ovarian reserve. Hum Reprod. 2013 Apr;28(4):1084-91.
- 82. **Kushnir VA**, Ludaway T, Russ RB, Fields EJ, Koczor C, Lewis W, Reproductive aging is associated with decreased mitochondrial abundance and altered structure in murine oocytes. J Assist Reprod Genet. 2012, Jul;29(7):637-42.
- 83. **Kushnir VA**, Lewis W., HIV/AIDS and Infertility: Emerging Problems in the Era of Highly Active Antiretrovirals. Fertil Steril 2011; 96(3):546-53.
- 84. **Kushnir VA**, Frattarelli JL, Aneuploidy in abortuses following IVF and ICSI, J Assist Reprod Genet. 2009; 26(2-3):93-7
- 85. **Kushnir VA**, Mosquera C. Novel technique for management of Bartholin gland cysts and abscesses. J Emerg Med. 2009;36 (4):388-90.
- 86. **Kushnir VA**, Scott RT, Frattarelli JL, Effect of paternal age on aneuploidy rates in first trimester pregnancy loss, J Med Genet Genom. 2010; 2(3): 38-43
- 87. Ragel BT, Gillespie DL, **Kushnir V**, Polevaya N, Kelly D, Jensen RL, Calcium channel antagonists augment hydroxyurea and RU486 induced inhibition of meningioma growth in vivo and in vitro. Neurosurgery,2006; 59(5):1109-20

## Other Publications:

- Gleicher N, Kushnir VA, Barad DH. Unexplained infertility. Lancet. 2018 Oct 27;392(10157):1516-1517
- 2. Gleicher N, **Kushnir VA**, Barad DH. How PGS/PGT-A laboratories succeeded in losing all credibility. Reprod Biomed Online. 2018 Aug;37(2):242-245.
- Gleicher N, Kushnir VA, Barad DH. Impact of androgen supplementation on the follicular endocrine milieu in women with hypoandrogenism. Reprod Biomed Online. 2018 Jun;36(6):719-720.
- 4. Gleicher N, **Kushnir VA**, Albertini DF, Barad DH. Letter to the Editor: Including the Zona Reticularis in the Definition of Hypoadrenalism and Hyperadrenalism. J Clin Endocrinol Metab. 2017 Sep 1;102(9):3569-3570.
- 5. Gleicher N, **Kushnir VA**, Albertini DA, Barad DH. First birth following spindle cell transfer. Reprod Biomed Online. 2017 Nov;35(5):542-543.
- 6. Gleicher N, Vidali A, Braverman J, **Kushnir VA**, Barad DH, Hudson C, Wu YG, Wang Q, Zhang L. Response to comment on: Gleicher N et al., 2016. Reprod Biol Endocrinol Sep 5;14(1):54. Reprod Biol Endocrinol. 2017 Apr 5;15(1):23.
- 7. Gleicher N, **Kushnir VA**, Barad DH. In reference to 'Strategies to manage refractory endometrium: state of the art 2016'. Reprod Biomed Online. 2016 Nov;33(5):604.
- 8. **Kushnir VA**, Barad DH, Gleicher N. Fresh vs Cryopreserved Donor Oocytes—Reply. JAMA. 2015 Dec 15;314(23):2570.
- 9. Gleicher N, **Kushnir VA**, Barad DH. RCT of Minimal Stimulation IVF versus Conventional IVF. Am J Obstet Gynecol. 2016 Mar;214(3):412-3.
- 10. Shohat-Tal A, Sen A, Barad DH, **Kushnir VA**, Gleicher N. More on the conversion of DHEA to testosterone. Nat Rev Endocrinol. 2015 Sep;11(9):521.
- 11. Barad DH, **Kushnir VA**, Albertini D, Gleicher N. CDC analysis of ICSI/autism: association is not causation. Hum Reprod. 2015 Jul;30(7):1745-6.
- 12. **Kushnir VA**, Barad DH, Gleicher N. Intracytoplasmic Sperm Injection and Reproductive Outcomes. JAMA. 2015 Apr 28;313(16):1672.
- 13. **Kushnir VA**, Barad DH, Gleicher N. Advanced Reproductive Age and Maternal Mortality. Obstet Gynecol. 2015 Apr;125(4):984.
- 14. Gleicher N, Barad DH, **Kushnir VA**, Sen A, Weghofer A. Poor responders and androgen ajuvant treatment: "Still haven't found what I'm looking for..." Reprod Biomed Online. 2014 Aug 7. pii: S1472-6483(14)00422-2.
- 15. Gleicher N, **Kushnir VA**, Barad D. Letter to the editor regarding 'Euploid' single embryo transfer: The new IVF paradigm'. Contemporary OB/GYN Aug 1 2014
- 16. Gleicher N, **Kushnir VA**, Barad D. Fertility treatments and multiple births in the United States. N Engl J Med. 2014 Mar 13;370(11):1069.
- 17. Gleicher N, **Kushnir VA**, Barad DH. The danger of ignoring pregnancy and delivery rates in ART. Hum Reprod. 2014 Aug;29(8):1828-9.
- 18. Gleicher N; **Kushnir VA**; Barad DH, What 'misguided campaign' against single embryo transfer? Hum Reprod. 2014 Feb;29(2):380-1.
- 19. Gleicher N, **Kushnir V**: F1000Prime Recommendation of [Kang E et al., Nature 2014]. In F1000Prime, 09 Apr 2014; DOI: 10.3410/f.718326499.793493465. 1000Prime.com/718326499#eval793493465
- 20. Gleicher N, **Kushnir VA**, Barad DH. Preimplantation genetic screening is alive and very well: really? Fertil Steril. 2013 Nov;100(5):e36.
- 21. **Kushnir VA**, Barad DH, Gleicher N. Defining assisted reproductive technology success. Fertil Steril. Fertil Steril. 2013 Oct;100(4):e30.
- 22. **Kushnir VA**, Barad DH, Gleicher N, Vidali A. Reply of the Authors. Fertil Steril. 2013 Oct;100(4):e26.
- 23. **Kushnir VA**, Vidali A, Barad DH, Gleicher N. Reply of the Authors. Fertil Steril. 2013 Sep;100(3):e18.
- 24. **Kushnir VA**, Barad DH, Gleicher N. Association of abnormal ovarian reserve parameters with a higher incidence of aneuploid blastocysts. Obstet Gynecol. 2013 Jun;121(6):1361.

- 25. Gleicher N, **Kushnir V**: F1000Prime Recommendation of [Okwundu CI and Afolabi BB, Cochrane Database Syst Rev 2013, 1:CD007885]. In F1000Prime, 12 Apr 2013; DOI: 10.3410/f.717985647.793473961. F1000Prime.com/717985647#eval793473961
- 26. **Kushnir VA**, Berga S, Evaluation of: [Negro R et al. Increased pregnancy loss rate in thyroid antibody negative women with TSH levels between 2.5 and 5.0 in the first trimester of pregnancy. J Clin Endocrinol Metab. 2010 Sep; 95(9):E44-8; doi: 10.1210/jc.2010-0340]. Faculty of 1000, 10 Jun 2011. F1000.com/6822957
- 27. **Kushnir VA**, Berga S, Evaluation of: [Hogan MC et al. Maternal mortality for 181 countries, 1980-2008: a systematic analysis of progress towards Millennium Development Goal 5. Lancet. 2010 May 8; 375(9726):1609-23; doi: 10.1016/S0140-6736(10)60518-1]. Faculty of 1000, 09 Sep 2010. F1000.com/5017959
- 28. **Kushnir VA**, Berga S, Endocrine self-assessment Program: Female Reproduction: Virilizing Hyperthecosis, 2010
- 29. **Kushnir VA**, Berga S, Evaluation of: [Lidegaard Ø et al. Hormonal contraception and risk of venous thromboembolism: national follow-up study. BMJ. 2009; 339:b2890; doi: 10.1136/bmj.b2890]. Faculty of 1000, 09 Nov 2009. F1000.com/1163822
- 30. **Kushnir VA**, Circumcision. CREOG Resident Quiz Series #168, American College of Obstetricians and Gynecologists, Washington, DC 2008

#### **Chapters:**

- Shapiro AJ, Kushnir VA, Seifer DB. (2022). Anti-Mullerian Hormone Signaling: Relevance for Pathophysiology of PCOS and Implications for Novel Therapeutic Approaches to Managing Ovulatory Dysfunction of PCOS. In: Pal L, Seifer DB. (eds) Polycystic Ovary Syndrome. Springer, Cham. https://doi.org/10.1007/978-3-030-92589-5\_25
- 2. Shapiro AJ, Shea C, **Kushnir VA**, Fate of non-transferred screened embryos from IVF: current challenges & future directions. In: E. Sills Gianpiero Palermo, eds. Human Embryos and Preimplantation Genetic Technologies, Academic Press, Elsevier, 2019:
- 3. Gleicher N, **Kushnir VA**, Barad DH, The Ovarian Factor in Assisted Reproductive Technology, In: Leung PCK, Adashi EY, eds. The Ovary, 3rd edition, chapter 24, Academic Press, Elsevier, 2019: 379-401
- Kushnir VA, Karyotype and hormones help differentiate mullerian agenesis from complete androgen insensitivity, In: Roberts CP, Broomfield DP, eds. Avoiding Common Obstetrics and Gynecology Errors, Section XV: Reproductive Endocrinology. Philadelphia PA: Lippincott Williams and Wilkins; 2010: 308-309.
- 5. **Kushnir VA**, Imperforate hymen vs. transverse vaginal septum: How are they corrected? In: Roberts CP, Broomfield DP, eds. Avoiding Common Obstetrics and Gynecology Errors, Section XV: Reproductive Endocrinology. Philadelphia PA: Lippincott Williams and Wilkins; 2010: 310-311.
- 6. **Kushnir VA**, Identify the shape of the fundus to determine a septate uterus, In: Roberts CP, Broomfield DP, eds. Avoiding Common Obstetrics and Gynecology Errors, Section XV: Reproductive Endocrinology. Philadelphia PA: Lippincott Williams and Wilkins; 2010: 315-316.

### **Abstracts and Presentations:**

- 1. Bogaard K, Darmon S, **Kushnir VA**, Impact of declining fertility rates on US state policies, Poster presentation at he ASRM 78<sup>th</sup> Scientific Congress, Oct 22-26, 2022, Anaheim, CA
- Qu Y, Kwok A, Howard J, Darmon SK, Kushnir VA, Luk J, Nejat EJ. Characteristics and outcomes
  of patients undergoing endometrial receptivity analysis (ERA) in a private NYC fertility clinic. Poster
  presentation at the ASRM 77th Scientific Congress, Oct 17-21, 2021, Baltimore, MD
- 3. Qu Y, Darmon S, **Kushnir VA**, Luk J, Nejat EJ. Outcomes of PGT-A Euploid Frozen Embryo Transfers Based on Endometrial Receptivity Analysis, Poster Presentation at the 68th annual meeting of Society for Reproductive Investigation (SRI), July 6-9, 2021, Boston, MA

- 4. Darmon S, Weghofer A, **Kushnir V**, Jafri H, Lazzaroni-Tealdi E, Zhang L, Albertini D, Barad D, Gleicher N. Oocyte size and morphology are predictive of embryo quality. Presented at the ESHRE 2019 annual meeting, June 23-26, Vienna, Austria
- 5. Lazzaroni-Tealdi E, Weghofer A, **Kushnir V**, Darmon S, Jafri H, Zhang H, Albertini D, Barad D, Gleicher N. Oocyte size and morphology are related to female age, ovarian reserve and body weight in non-polycystic ovary syndrome patients. Presented at the ESHRE 2019 annual meeting, June 23-26, Vienna, Austria
- 6. Albertini D, Hu J, Gleicher N, **Kushnir V**, Ohara Y, De Grand A, Barad D. Pilot study of novel noninvasive imaging approach for determination of meiotic status in intact human cumulus-oocyte-complexes. Presented at the ESHRE 2019 annual meeting, June 23-26, Vienna, Austria
- 7. Barad D, Weghofer A, Darmon S, **Kushnir V**, Albertini D, Gleicher N. The ovarian sensitivity index (OSI) is in infertile patients predictive of live birth chances after IVF. Presented at the ESHRE 2019 annual meeting, June 23-26, Vienna, Austria
- 8. Kushnir MM, Staseski JA, **Kushnir VA**. Association of Free and Total 25 Hydroxy Vitamin D with Biomarkers of Polycystic Ovary Syndrome. Clinical Mass Spectrometry, MSACL 2019 US. 11th Annual Conference & Exhibit, Mar 31- Apr 4, 2019. Palm Springs, CA.
- Kushnir MM, Kushnir VA, Staseski JA.Total and Free 25 Hydroxy Vitamin D are Associated with AMH and Androgens in Women with Biochemical Evidence of Polycystic Ovary Morphology. 71<sup>st</sup> AACC Annual Scientific Meeting & Clinical Laboratory Expo; Aug 4-8, 2019. Anaheim, CA
- 10. Albertini DF, Ohara Y, De Grand A, **Kushnir VA**, Barad DH, Gleicher N. A new optical system allows gauging of human oocyte maturation status without cumulus cell removal. Fertil Steril. 2018 Sep;110(4):e19.
- 11. **Kushnir VA**, Darmon SK, Barad DH, Weghofer A, Gleicher N. Effects of dehydroepiandrosterone (DHEA) supplementation on sexual function in older pre-menopausal infertile women. Fertil Steril. 2018 Sep;110(4):e23.
- 12. **Kushnir VA**, Darmon SK, Barad DH, Weghofer A, Gleicher N. Sexual function in older premenopausal infertile women does not correlate with patient demographics and endocrine parameters. Fertil Steril. 2018 Sep;110(4):e157.
- 13. Weghofer A, Darmon SK, **Kushnir VA**, Gleicher N, Barad DH. Euploid miscarriage is associated with elevated serum C-reactive protein levels in infertile women. Fertil Steril. 2018 Sep;110(4):e129–e130.
- 14. Weghofer A, Darmon S, **Kushnir VA**, Albertini DF, Barad D, Gleicher N. The ovarian sensitivity index (OSI) is predictive of live birth chances after IVF in infertile patients with relative poor prognosis. Fertil Steril. 2018 Sep;110(4):e317–e318.
- 15. Weghofer A, **Kushnir VA**, Darmon SK, Jafri H, Lazzaroni-Tealdi E, Zhang L, et al. Oocyte size and morphology predict embryo quality oocyte size and morphology predict embryo quality. Fertil Steril. 2018 Sep;110(4):e309–e310.
- 16. Weghofer A, Darmon SK, **Kushnir VA**, Albertini DF, Barad DH, Gleicher N. The ovarian sensitivity index (OSI) predicts embryo quality in oocyte donors. Fertil Steril. 2018 Sep;110(4):e317.
- 17. Weghofer A, **Kushnir VA**, Darmon SK, Jafri H, Lazzaroni-Tealdi E, Zhang L, et al. Association between characteristics of infertile patients and oocyte measurements. Fertil Steril. 2018 Sep;110(4):e310.
- 18. **V. Kushnir**, S. Darmon, D. Albertini, D. Barad, N. Gleicher. O-175: ACTH-stimulation in women with low functional ovarian reserve (LFOR) confirms adrenal origin of hypo-androgenism. Presented at the ESHRE 2018 annual meeting, July 1-4, Barcelona, Spain
- 19. S. Darmon, D. Barad, N. Gleicher, V. Kushnir. P-368: National U.S. utilization patterns and live birth rates of various ovarian stimulation protocols for IVF. Presented at the ESHRE 2018 annual meeting, July 1-4, Barcelona, Spain
- 20. N. Gleicher, S. Soldin, V. Kushnir, D. Barad, S. Darmon, D. Albertini, C. Stratakis. P-646: Further characterization of a newly described hypo-androgenic PCOS-like phenotype based on adrenal

- and ovarian hormone profiles. Presented at the ESHRE 2018 annual meeting, July 1-4, Barcelona, Spain
- 21. Q. Wang, **V.A. Kushnir**, S. Darmon, D.H. Barad, Y. Wu, L. Zhang, D. Albertini, N. Gleicher: Reduced mRNA levels of the FMR1 gene and changes of gene expression of cyp19 and FSHR in infertile women with low (CGG n < 26) repeats. Fertil Steril. 09/2017; 108(3):e143.
- 22. N. Gleicher, D.H. Barad, S. Darmon, **V.A. Kushnir**: Deterioration of inherent treatment prognosis of infertility patients over the last 5 years (2012-2016). Fertil Steril. 09/2017; 108(3):e344-e345.
- 23. A. Shapiro, S. Darmon, D.H. Barad, N. Gleicher, **V.A. Kushnir**: Do serum vitamin d and antimullerian hormone levels correlate in reproductive-age women?. Fertil Steril. 09/2017; 108(3):e219-e220.
- 24. N. Gleicher, D.H. Barad, S. Darmon, **V.A. Kushnir**: Declining birth rates from IVF over the last decade due to commoditization and industrialization. Fertil Steril. 09/2017; 108(3):e344.
- 25. **V.A. Kushnir**, J. Choi, S. Darmon, D. Albertini, D.H. Barad, N. Gleicher: CDC reported assisted reproductive technology (art) live birth rates are misleading to the public. Fertil Steril. 09/2017; 108(3):e333.
- 26. D.H. Barad, **V.A. Kushnir**, D. Albertini, S. Darmon, N. Gleicher: Does gender selection in donor-recipient cycles affect IVF cycle outcomes?. Fertil Steril. 09/2017; 108(3):e342-e343.
- 27. Barad DH, **Kushnir VA**, Albertini DF, Darmon SK, Gleicher N. Prevalence and impact of elective gender selection in oocyte donor recipient cycles in the United States 2005-2013. Presented at the ESHRE 2017 annual meeting, July 1-4, Geneva, Switzerland
- 28. Albertini DF, **Kushnir VA**, Darmon SK, Wang Q, Zhang L, Barad DH, Gleicher N. Ontogeny of newly described hypo-androgenic PCOS phenotype in infertile women from younger through older ages. Presented at the ESHRE 2017 annual meeting, July 1-4, Geneva, Switzerland
- 29. Shapiro A, Barad DH, Darmon S, Albertini D, Gleicher N, **Kushnir VA**. Racial and ethnic disparities in use of third-party ART, Poster Presentation at New York Obstetrical Society, April 4, 2017
- 30. Hayes E, **Kushnir VA**, Gleicher N, Sen A. Regulation of Anti-Mullerian Hormone (AMH) Expression during Follicular Development, Poster presentation at ENDO 2017, Orlando, FL, April 1, 2017
- 31. Wu Y, **Kushnir VA**, Darmon S, Wang Q, Zhang L, Albertini D, Barad DH, Gleicher N. What is the best lead follicle size for ovulation induction in older women ≥43 years to avoid premature luteinization of follicles? Fertil Steril. 2016. 106; e349-e350
- 32. **Kushnir VA**, Barad DH, Darmon S, Albertini D, Gleicher N. Effects of newly introduced practices over 10 years (2004-2013) on worldwide trends in assisted reproductive technology Fertil Steril. 2016. 106; e365
- 33. Barad DH, Darmon S, **Kushnir VA**, Lazzaroni-Tealdi E, Wang Q, Albertini D, Gleicher N. Effect of PGS on IVF outcomes following elective single embryo transfer (eSET) in oocyte donation in the United States: 2005 to 2013 Fertil Steril. 2016. 106; e209
- 34. Shapiro A, Barad DH, Darmon S, Albertini D, Gleicher N, **Kushnir VA**. Racial and ethnic disparities in the use of third-party art in the U.S. Fertil Steril. 2016. 106; e108-e109
- 35. Barad DH, Darmon S, **Kushnir VA**, Lazzaroni-Tealdi E, Wang Q, Zhang L, Albertini D, Gleicher N. Prevalence and effect of preimplantation genetic screening (PGS) on oocyte donation cycles in the United States: 2005 to 2013 Fertil Steril. 2016. 106; e330
- 36. **Kushnir VA**, Barad DH, Darmon S, Albertini D, Gleicher N. Utilization and effects of embryo banking on ART outcome reporting in the U.S. Fertil Steril. 2016. 106; e333
- 37. **Kushnir VA**, Barad DH, Darmon S, Albertini D, Gleicher N. Contribution of third party reproduction to the birth cohort following art in the U.S.A. Fertil Steril. 2016. 106; e108
- 38. Shapiro A, Barad DH, Darmon S, Albertini D, Gleicher N, **Kushnir VA**. Effect of race and ethnicity on live birth rates in third-party ART cycles in the U.S. Fertil Steril. 2016. 106; e367

- 39. Barad DH, Darmon S, **Kushnir VA**, Lazzaroni-Tealdi E, Wang Q, Zhang L, Albertini D, Gleicher N. Effect of time trends of preimplantation genetic screening (PGS) utilization on oocyte donation cycle live birth rates in the United States: 2005 to 2013 Fertil Steril. 2016. 106; e326
- 40. Barad DH, Darmon S, **Kushnir VA**, Lazzaroni-Tealdi E, Wang Q, Albertini D, Gleicher N. Contribution of cryopreservation cycles to cumulative live birth outcomes following oocyte donation with preimplantation genetic screening (PGS) in the United States: 2005 to 2013 Fertil Steril. 2016. 106; e321
- 41. **Kushnir VA**, Shapiro A, Barad DH, Darmon S, Albertini D, Gleicher N. Effect of race and ethnicity on fertility rates and utilization of ART in the USA. Fertil Steril. 2016. 106; e367-e368
- 42. Gleicher N, Vidali A, **Kushnir VA**, Barad DH, Hudson C, Wang Q, Zhang L, Albertini D. Preimplantation genetic screening (PGS) appears unable to correctly determine ploidy of embryos from a single trophectoderm biopsy (TEB) Fertil Steril. 2016. 106; e371
- 43. **Kushnir VA**, Barad DH, Albertini DF, Darmon SK, Gleicher N, World trends in Assisted Reproductive Technology (ART) 2004-2013, Presented at the ESHRE 2016 annual meeting, July 3-6, Helsinki, Finland
- 44. Wang Q, **Kushnir VA**, Darmon SK, Barad DH, Wu YG, Zhang L, Albertini DF, Gleicher N, Reduced mRNA Levels and Isoforms of the FMR1 Gene in Infertile Women with Low CGG n<26 Repeats, Presented at the ESHRE 2016 annual meeting, July 3-6, Helsinki, Finland
- 45. Gleicher N, Vidali A, Braverman J, **Kushnir VA**, Barad DH, Hudson C, Wu YG, Wang Q, Zhang L, Albertini DF. Mosaicism in Human Embryos Compromises Accuracy of Preimplantation Genetic Screening (PGS), Oral Presentation at the 63<sup>rd</sup> annual meeting of Society for Reproductive Investigation (SRI), March 19, 2016, Montreal, Canada
- 46. Gleicher N, Vidali A, Braverman J, **Kushnir VA**, Albertini DF, Barad DH. Further evidence against use of PGS in poor prognosis patients: report of normal births after transfer of embryos reported as aneuploid. Fert Stert. 2015; 104:e59.
- 47. **Kushnir VA**, Barad DH, Albertini DF, Darmon SK, Gleicher N. Cryopreserved donor oocytes yield significantly lower birth rates than fresh oocytes. Fert Stert. 2015;104:e192-e3.
- 48. Vega MG, Barad DH, Darmon SK, Gleicher N, **Kushnir VA**. Live birth rates in very poor prognosis patients with non-elective single (neSET), 2-embryo (2-ET) and ≥3-emrbyo transfers (≥3-ET). Fert Stert. 2015; 104:e256.
- 49. Vega MG, Barad DH, Darmon SK, Gleicher N, **Kushnir VA**. Utility of autologous fresh IVF cycles in extremely poor prognosis patients. Fert Stert. 2015;104:e252.
- 50. Wu Y, Albertini DF, Wang Q, Barad DH, **Kushnir VA**, Lazzaroni-Tealdi E et al. Functional characterization of cultured human granulosa cells in serum free culture system. Fert Stert. 2015; 104:e309.
- 51. Wu Y, Lazzaroni-Tealdi E, Wang Q, Albertini DF, Barad DH, **Kushnir VA** et al. Randomized comparison of embryo development in closed time-lapse photography system with traditional standard embryology culture with day-3 embryo transfers. Fert Stert. 2015; 104:e319.
- 52. Weghofer A, **Kushnir VA**, Barad DH, Gleicher N. The impact of thyroid stimulating hormone (TSH) on Anti Mullerian hormone (AMH) levels in infertile women. Does TSH affect follicular recruitment? Poster presentation at the 31st Annual Meeting of the ESHRE, Lisbon, Portugal, June 14-17, 2015
- 53. Vega M, Barad DH, Seier K, Yu Y, Kushnir VA, Lazzaroni-Tealdi E, Wu YG, Wang Q, Weghofer A, Albertini DF, Gleicher N. Immunologic and inflammatory markers in prediction models of clinical pregnancy and live birth in association with in vitro fertilization (IVF) in women receiving immune-suppressive therapy. Poster presentation at the 31st Annual Meeting of the ESHRE, Lisbon, Portugal, June 14-17, 2015
- 54. Barad DH, Weghofer A, Latham GL, Filipovic-Sadic S, **Kushnir VA**, Gleicher N. Significant skews in methylation fractions in previously described genotypes and sub-genotypes of the FMR1 gene. Poster presentation at the 31st Annual Meeting of the ESHRE, Lisbon, Portugal, June 14-17, 2015

- 55. Bisplinghoff E, **Kushnir VA**, Barad DH, Weghofer A, Gleicher N. Comparison of FMR1 mutations distribution between Indian and other Asian patients. Poster presentation at the 31st Annual Meeting of the ESHRE, Lisbon, Portugal, June 14-17, 2015
- 56. Gleicher N, **Kushnir VA**, Barad DH, Burning out PCOS: How the adrenals can assume control over the ovaries, 21st COGI Congress, Frankfurt, May 14-16, 2015
- 57. Wu Y-G, Barad DH, **Kushnir VA**, Wang Q, Albertini D, Gleicher N. Aging-related Premature Luteinization of Human Granulosa Cells is Avoided by Early Oocyte Retrieval, Poster presentation at Society for the Study of Reproduction 48th Annual Meeting, San Juan, Puerto Rico, June 18-22 2015
- 58. **Kushnir VA**, Halevy N, Barad DH, Gleicher N. The Relative Importance of AMH and Androgens in Women with a Non-Obese PCOS Phenotype Changes with Advancing Age. Poster presentation at ENDO 2015, San Diego, CA, March 5-8, 2015
- 59. Hayes E, **Kushnir VA**, Gleicher NG, Hammes SR, Sen A. Regulation of Follicular Development By in-Vivo Anti-Müllerian Hormone (AMH) Administration. Poster presentation at ENDO 2015, San Diego, CA, March 5-8, 2015
- 60. **Kushnir VA**, Yu Y, Himaya E, Barad DH, Weghofer A, Wu YG, Lazzaroni-Tealdi E, Gleicher N. Accelerated Ovarian Aging in Young Women With Low (CGGn<26) FMR1 Repeats, Poster presentation at Women's Health 2015 Congress, Washington, DC, April 16-19, 2015.
- 61. **Kushnir VA**, Wu YG, Barad DH, Gleicher N. Assessing risk toward premature ovarian senescence prospectively: a new paradigm in gynecology, Poster presentation at Women's Health 2015 Congress, Washington, DC, April 16-19, 2015.
- 62. Barad DH, Khanna P, **Kushnir VA**, Lazzaroni-Tealdi E, Wu YG, Lee HJ et al. Differences in AMH assessments between standard and new high sensitivity AMH assays and impact on prediction of IVF outcomes. Fertil Steril;102:e147.
- 63. Khanna P, **Kushnir VA**, Barad DH, Gleicher N. Live births rates following oocyte donation reflect performance of IVF centers in autologous IVF cycles. Fertil Steril;102:e340.
- 64. **Kushnir VA**, Khanna P, Barad DH, Gleicher N. Assessment of practice in IVF clinics in which success in autologous and donor oocyte cycles do not correlate. Fertil Steril;102:e113-e4.
- 65. **Kushnir VA**, Wu YG, Chen IC, Lee HJ, Barad DH, Lazzaroni-Tealdi E et al. Mitochondrial DNA abundance declines in human cumulus granulosa cells with age. Fertil Steril;102:e331.
- 66. Vega M, Barad DH, Weghofer A, **Kushnir VA**, Gleicher N. Evidence that a degree of mucosal inflammation is beneficial for pregnancy success in association with IVF. Fertil Steril;102:e279-e80.
- 67. Wu YG, Lee HJ, Barad DH, **Kushnir VA**, Lazzaroni-Tealdi E, Gleicher N. Effects of advancing female age on proliferation and gene expression in cultured human granulosa cells from post-hCG retrieved follicles. Fertil Steril;102:e331-e2.
- 68. Wu YG, Lee HJ, Barad DH, **Kushnir VA**, Lazzaroni-Tealdi E, Sen A et al. The effects of dehydroepiandrosterone (DHEA) on cultured human granulosa cells from postovulatory human follicles after in vitro fertilization (IVF). Fertil Steril;102:e272.
- 69. Lee HJ, Wu YG, Lazzaroni-Tealdi E, Barad DH, **Kushnir VA**, Gleicher N. Aging is associated with differential gene expression in human granulosa and cumulus cells leading to rapid progression of meiotic and oocyte maturation competence. Fertil Steril 102:e200-e1.
- 70. **Kushnir VA**, Sen A, Hammes SR, Barad DH, Lazzaroni-Tealdi E, Wu Y-G, Lee H-J, Gleicher N. Proof of concept in a mouse model for beneficial effects of dehydroepiandrosterone (DHEA) on small growing follicles. Poster presentation at ICE/ENDO 2014, Chicago, IL, June 21-24. 2014.
- 71. Barad DH, Khanna P, **Kushnir VA**, Gleicher N. Clinical in vitro fertilization (IVF) outcomes based on comparative anti-Müllerian hormone (AMH) testing with a standard and new highly sensitive assay. Poster presentation at ICE/ENDO 2014, Chicago, IL, June 21-24. 2014.
- 72. Wu Y-G, Lee H-J, Barad DH, **Kushnir VA**, Lazzaroni-Tealdi E, Gleicher N. The impact of advancing female age on gene expression of human granulosa cells. Poster presentation at ICE/ENDO 2014, Chicago, IL, June 21-24. 2014.

- 73. Vega M, Barad DH, **Kushnir VA**, Lazzaroni-Tealdi E, Wu Y-G, Lee H-J, Gleicher N. Low functional ovarian reserve (FOR) is in infertile women associated with presence of antiphospholipid antibodies. Poster presentation at ICE/ENDO 2014, Chicago, IL, June 21-24. 2014.
- 74. Wu Y-G, Lee H-J, Barad DH, **Kushnir VA**, Lazzaroni-Tealdi E, Gleicher N. Proliferation and gene expression are affected by advancing female age in cultured human granulosa cells. Poster presentation at ICE/ENDO 2014, Chicago, IL, June 21-24. 2014.
- 75. Wu Y-G, Lee H-J, Barad DH, **Kushnir VA**, Lazzaroni-Tealdi E, Gleicher N. Dehydroepiandrosterone (DHEA) Stimulates Aromatase and FSH Receptor Expression in Cultured Human Primary Granulosa Cells. Poster presentation at Society for the Study of Reproduction annual meeting, Grand Rapids, MI, July 20, 2014
- 76. Barad, D. H., **Kushnir, V. A.,** Shohat-Tal, A., Lazzaroni, E., Lee, H. J., & Gleicher, N. (2013a). Prospective randomized study of endometrial perfusion with granulocyte colony-stimulating factor (G-CSF) in unselected IVF cycles: impact on endometrial thickness and clinical pregnancy rates. Fertil Steril, 100(3), S144.
- 77. Barad, D. H., **Kushnir, V. A.**, Shohat-Tal, A., Lazzaroni, E., Lee, H. J., & Gleicher, N. (2013b). Synergistic effects of androgen supplementation and follicle stimulating hormone (FSH) on 3 consecutive IVF cycles in women with diminished functional ovarian reserve (DFOR). Fertil Steril, 100(3), S519-S520.
- 78. Barad, D. H., Latham, G. J., Filipovic-Sadic, S., **Kushnir, V. A.**, Shohat-Tal, A., & Gleicher, N. (2013). Following previously described ovarian phenotypes of the FMR1 gene, methylation fractions were significantly skewed between FMR1 genotypes and sub-genotypes. Fertil Steril, 100(3), S345.
- 79. Himaya, E., Barad, D. H., **Kushnir, V. A.**, Shohat-Tal, A., Lee, H. J., & Gleicher, N. (2013). Does the FMR1 gene affect ivf pregnancy rates via oocyte and embryo quality? Fertil Steril, 100(3), S93.
- 80. Himaya, E., Weghofer, A., **Kushnir, V. A.**, Shohat-Tal, A., Barad, D. H., & Gleicher, N. (2013). Association of FMR1 sub-genotypes with embryo aneuploidy and miscarriage rates following invitro fertilization (IVF). Fertil Steril, 100(3), S190.
- 81. Kissin, D. M., Kulkarni, A., **Kushnir, V. A.**, & Jamieson, D. J. (2013). Using good perinatal outcome as a measure of success of assisted reproductive technology (ART). Fertil Steril, 100(3), S487-S488.
- 82. **Kushnir**, V. A., Himaya, E., Barad, D. H., Shohat-Tal, A., & Gleicher, N. (2013). Adrenal response to cosyntropin (ACTH) stimulation in patients with premature ovarian senescence. Fertil Steril, 100(3), S161-S162.
- 83. **Kushnir, V. A.**, Himaya, E., Barad, D. H., Weghofer, A., & Gleicher, N. (2013). Functional ovarian reserve assessments in young oocyte donors based on FMR1 genotypes and sub-genotypes. Fertil Steril, 100(3), S114.
- 84. **Kushnir, V. A.,** Vidali, A., Barad, D. H., & Gleicher, N. (2013). Transparency of public reporting of clinical outcomes in assisted reproductive technology. Fertil Steril, 100(3), S146.
- 85. Lazzaroni, E., Gleicher, N., Yu, Y., **Kushnir, V. A**., Shohat-Tal, A., & Barad, D. H. (2013). A new oocyte scoring system with better predictability for clinical pregnancy than day 3 embryo quality. Fertil Steril, 100(3), S502.
- 86. Lee, H. J., Barad, D. H., **Kushnir, V. A.**, Shohat-Tal, A., Lazzaroni, E., & Gleicher, N. (2013). Differences observed during in vitro maturation (IVM) of immature oocytes from women with diminished functional ovarian reserve (DFOR) and women with normal ovarian reserve (NOR). Fertil Steril, 100(3), S232.
- 87. Lee, H. J., Sen, A., Barad, D. H., **Kushnir, V. A.**, Shohat-Tal, A., & Gleicher, N. (2013). NPR2, SMAD2/3, BMP and GDF-9 expressions in human granulosa and cumulus cells during oocyte maturation. Fertil Steril, 100(3), S233.
- 88. Shohat-Tal, A., **Kushnir, V. A.**, Barad, D. H., & Gleicher, N. (2013). Genetics of exogenous dehydroepiandrosterone (DHEA) conversion to testosterone (T) in hypoandrogenic women as tool to individualized infertility treatments. Fertil Steril, 100(3), S162.
- 89. Shohat-Tal, A., Lazzaroni, E., **Kushnir, V. A.**, Barad, D. H., & Gleicher, N. (2013). Correlation between fragile-x mental retardation protein (FMRP) levels in peripheral blood lymphocytes and in granulosa cells of preovulatory follicles in IVF cycles. Fertil Steril, 100(3), S230.

- 90. Weghofer, A., Himaya, E., **Kushnir, V. A.**, Barad, D. H., & Gleicher, N. (2013). The impact of thyroid function on embryo quality for in vitro fertilization (IVF). Fertil Steril, 100(3), S333.
- 91. Weghofer, A., Himaya, E., **Kushnir, V. A.**, Shohat-Tal, A., Barad, D. H., & Gleicher, N. (2013a). Further evidence for an association between immune system activation/systemic inflammation and androgen levels in infertile women. Fertil Steril, 100(3), S329.
- 92. Weghofer, A., Himaya, E., **Kushnir, V. A.**, Shohat-Tal, A., Barad, D. H., & Gleicher, N. (2013b). Is immune system activation/systemic inflammation a prerequisite for successful reproduction? association of immune system activation with embryo quality during in vitro fertilization (IVF). Fertil Steril, 100(3), S329.
- 93. Lee HJ, Weghofer A, **Kushnir VA**, Shohat-Tal A, Lazzaroni E, Barad DH, Gleicher N. Is androgen production in association with immune system activation potential evidence for the existence of a functional adrenal/ovarian autoimmune system in women? The Annual Meeting of the ESHRE, London, UK, July 7-10, 2013.
- 94. **Kushnir VA**, Ludaway T, Russ RB, Fields EJ, Koczor C, Lewis W, Transgenic HIV/AIDS Mice Treated with NRTIs Have Reduced Fertility, Poster Presentation at SGI 58th Annual Scientific Meeting, Miami, FL March 17<sup>th</sup>, 2011
- 95. **Kushnir VA**, Ludaway T, Russ RB, Fields EJ, Koczor C, Lewis W, Reproductive aging is associated with decreased mitochondrial DNA in murine oocytes. Poster Presentation at SGI 59th Annual Scientific Meeting, San Diego, CA March 24<sup>th</sup>, 2012
- 96. **Kushnir VA**, Pompeo L; Recruitment of Medical Students to OBGYN in New Jersey, Poster Presentation at ACOG Annual District Meeting in Banff, Canada, August 22<sup>nd</sup>, 2008
- 97. **Kushnir V**, ACOG collaboration with Women's Health Organizations: Model for Mutual Growth, Presented at the ACOG District III annual meeting, Santo Domingo, Dominican Republic, November 9-11, 2007.
- 98. Frattarelli, J. L., **Kushnir, V. A.**, Miller, K. A., Bergh, P. A., Drews, M. R., & Scott, R. T. (2008). Media and air bubble flash pattern at time of ultrasound guided embryo transfer predicts pregnancy outcome: an analysis of 2266 consecutive embryo transfers. Fertil Steril, 90, S241.
- 99. **Kushnir, V. A.**, Scott, R. T., & Frattarelli, J. L. (2007). The impact of paternal age on aneuploidy rates in first trimester pregnancy losses. Fertil Steril, 88, S20-S21.
- 100. **Kushnir, V. A.**, Scott, R. T., & Frattarelli, J. L. (2008). Aneuploidy in first trimester pregnancy loss following in vitro fertilization and intracytoplasmic sperm injection. Fertil Steril, 90, S61.
- 101. Beal P, **Kushnir V**, Regulation of dsRNA-Dependent Protein Kinase (PKR)-RNA complex, 36th Intermountain Sciences and Humanities Symposium, Salt Lake City, UT, Jan 2001
- 102. Jensen RL, Kushnir V, Ragel BT, and Gillespie D: Calcium Channel Antagonists Increase the Efficacy of Chemotherapeutic Agents Commonly Used for Treatment of Refractory Meningiomas. North American Skull Base Society. New Orleans, LA, February 14-17, 2004.
- 103. Jensen RL, **Kushnir V**, Ragel BT, and Gillespie D: Growth inhibition of chemotherapy for meningiomas is potentiated by calcium channel antagonists. Presented at the 39th annual meeting of the Rocky Mountain Neurosurgery Society, Squaw Valley, CA, June 12-16, 2004.
- 104. Jensen RL, **Kushnir V**, Ragel BT, Gillespie D: Growth inhibition of meningiomas by combined chemotherapeutic and calcium channel antagonists. In vitro and in vivo studies. Presented at the Congress of Neurological Surgeons, San Francisco. October 16-21, 2004.

# **Grand Rounds and Lectures**

- 1. Challenges during pregnancy for young cancer survivors, AIIMS, New Delhi, India, Feb 12, 2022.
- 2. IVF: the new normal in human reproduction, International Society of Reproductive Genetics, Beijing, China, 6/2021
- 3. Resident and Medical Student Didactics: University of California Irvine, Department of OBGYN, 2022
- 4. Resident and Medical Student Didactics: University of California Irvine, Department of OBGYN, 2021

- 5. IVF: the new normal in human reproduction, University of California Irvine, Department of OBGYN, Jan 31, 2020
- 6. Resident and Medical Student Didactics: University of California Irvine, Department of OBGYN, 2020
- 7. Reproductive Endocrinology and Infertility, Wyckoff Heights Medical Center 7/2019
- 8. Elective Egg Freezing 8th annual UAE Reproductive Symposium, Dubai, UAE, Mar 22-23, 2019
- 9. PGT-A 8<sup>th</sup> annual UAE Reproductive Symposium, Dubai, UAE, Mar 22-23, 2019
- 10. Menopause Wyckoff Heights Medical Center 03/2019
- 11. Stump the experts: Clinical case discussion and troubleshooting in ART Panel discussion, 3<sup>rd</sup> FERTICON, AIIMS, New Delhi, India, Feb 2-3, 2019
- 12. The future of IVF, 3rd FERTICON, AIIMS, New Delhi, India, Feb 2-3, 2019
- 13. Elective egg freezing debate, 3rd FERTICON, AIIMS, New Delhi, India, Feb 2-3, 2019
- 14. The present, future and new non-invasive PGT-A, 3<sup>rd</sup> FERTICON, AIIMS, New Delhi, India, Feb 2-3, 2019
- 15. Understanding the importance of adrenal in female reproduction, 3<sup>rd</sup> FERTICON, AIIMS, New Delhi, India, Feb 2-3, 2019
- 16. Hirsutism and hyperandrogenism Wyckoff Heights Medical Center 1/2019
- 17. Fertility preservation: When should a woman worry about her future fertility, and what are then her options? Translational Reproductive Biology and Clinical Reproductive Endocrinology, New York City, Nov 15-18, 2018
- 18. HIER Highly Individualized Egg Retrieval Translational Reproductive Biology and Clinical Reproductive Endocrinology, New York City, Nov 15-18, 2018
- Evidence for existence of a pituitary-adrenal-ovarian axis that controls ovarian function. Translational Reproductive Biology and Clinical Reproductive Endocrinology, New York City, Nov 15-18, 2018
- 20. How effective is egg freezing as a preventative treatment for young women in securing their ability to reproduce later in life? Translational Reproductive Biology and Clinical Reproductive Endocrinology, New York City, Nov 15-18, 2018
- 21. Are frozen donor eggs in donor-recipient cycles really the equal of fresh oocytes? Translational Reproductive Biology and Clinical Reproductive Endocrinology, New York City, Nov 15-18, 2018
- 22. Why and how worldwide trends in utilization of eggs donation differ. Translational Reproductive Biology and Clinical Reproductive Endocrinology, New York City, Nov 15-18, 2018
- 23. Preimplantation Genetic Screening Wyckoff Heights Medical Center 11/2018
- 24. Recent Advances in Assisted Reproductive Technology for Women with Severe Diminished Ovarian Reserve ASRM 74th Scientific Congress, Denver, 10/2018
- 25. Debate: Do Natural Supplements Enhance Fertility? ASRM 74<sup>th</sup> Scientific Congress, Denver, 10/2018
- 26. Medical Treatment of Infertility Wyckoff Heights Medical Center 5/2018
- 27. Evaluation of Infertility Wyckoff Heights Medical Center 2/2018
- 28. Adrenal Gland and Female Reproduction Reproductive Endocrinology Conference, Guangzhou, China, 03/2018
- 29. The Truth about Preimplantation Genetic Screening Sun Yat-Sen Memorial Hospital, Guangzhou, China, 03/2018
- 30. Precautious Puberty Wyckoff Heights Medical Center 12/2017
- 31. PGD/PGS: Applying Molecular Technologies to Improve Pregnancy Outcomes Early Pregnancy Symposium, Philadelphia, PA, Dec 1-2, 2017
- 32. Is there any reason for embryo banking but to artificially inflate outcomes? Translational Reproductive Biology and Clinical Reproductive Endocrinology, New York City, Nov 16-19, 2017
- 33. Can we prevent female infertility through proactive screening programs? Translational Reproductive Biology and Clinical Reproductive Endocrinology, New York City, Nov 16-19, 2017

- 34. Social, medical and economic realities of egg donation Translational Reproductive Biology and Clinical Reproductive Endocrinology, New York City, Nov 16-19, 2017
- 35. Why in IVF outcome reporting based on "intent to treat" is essential Translational Reproductive Biology and Clinical Reproductive Endocrinology, New York City, Nov 16-19, 2017
- 36. Sex Determination and Differentiation Wyckoff Heights Medical Center 8/2017
- 37. Why current national outcome reporting of ART is highly misleading Center for Human Reproduction 05/2017
- 38. Procedures in REI Wyckoff Heights Medical Center 5/2017
- 39. Menopause management and considerations Wyckoff Heights Medical Center 01/2017
- 40. PCOS, Hirsutism and hyperandrogenism work up and management Wyckoff Heights Medical Center 11/2016
- 41. How introduction of unproven new treatment modifications to IVF has negatively affected treatment outcomes around the world Translational Reproductive Biology and Clinical Reproductive Endocrinology, New York City, Nov 17-20, 2016
- 42. Risk-screening algorithm for young women to detect premature ovarian senescence at younger ages Translational Reproductive Biology and Clinical Reproductive Endocrinology, New York City, Nov 17-20, 2016
- 43. Fertility preservation in young cancer patients Translational Reproductive Biology and Clinical Reproductive Endocrinology, New York City, Nov 17-20, 2016
- 44. Are frozen eggs really equivalent to fresh donor eggs? Translational Reproductive Biology and Clinical Reproductive Endocrinology, New York City, Nov 17-20, 2016
- 45. Amenorrhea: Primary and Secondary —Wyckoff Heights Medical Center 10/2016
- 46. Infertility treatment and management: Clomid induction, IVF —Wyckoff Heights Medical Center 09/2016
- 47. Infertility: Overview, approach and evaluation. —Wyckoff Heights Medical Center 06/2016
- 48. Worldwide trends in Assisted Reproductive Technologies 2004-2013—Center for Human Reproduction 06/2016
- 49. Role of Inflammation in Reproductive Outcome—Center for Human Reproduction 06/2015
- 50. Scientific approach to evaluation and management of diminished ovarian reserve— Wake Forest School of Medicine 01/2015
- 51. New considerations in family planning: Premature ovarian aging—Center for Human Reproduction 06/2014
- 52. Evaluation and Management of Diminished Ovarian Reserve –Russian Fertility Society 04/2014
- 53. Manipulation of IVF Outcome Reporting to SART(webcast)-- Center for Human Reproduction 09/2013
- 54. Federally Mandated IVF Outcome Reporting—Center for Human Reproduction 05/2013
- 55. Mitochondrial Role in Female Reproductive Aging—Center for Human Reproduction 11/2012
- 56. Mitochondrial Role in Female Reproductive Aging-- University of Utah, 12/2011
- 57. Fertility Preserving Surgery for the GYN-ONC Patient -- Emory University School of Medicine, 09/2011
- 58. Journal Club: Thyroid Disease in Pregnancy Emory University School of Medicine, 03/2011
- 59. HIV and Fertility in the Era of HAART Emory University School of Medicine, 11/2010
- 60. Genetics of Sex Determination Emory University School of Medicine, 08/2010
- 61. Evolution of Sexual Reproduction Emory University School of Medicine, 06/2010
- 62. Reproduction and the Mitochondria Emory University School of Medicine, 11/2009
- 63. Endometriosis and Chronic Pelvic Pain Emory University School of Medicine, 11/2009
- 64. Endometrial Hyperplasia and Cancer Hackensack University Medical Center 03/2009
- 65. Female Fertility Preservation New Jersey Medical School, 05/2009
- 66. Fertility Sparing Surgery for Gynecologic Malignancies- Albert Einstein School of Medicine, 03/2008
- 67. Aromatase Inhibitors New Jersey Medical School, 02/2008

- 68. Meconium in Utero Morristown Memorial Hospital, 08/2005
- 69. Supracervical Hysterectomy: review of the current evidence Overlook Hospital, 11/2007
- 70. Hemoglobinopathy in Pregnancy Hackensack University Medical Center, 07/2007
- 71. Hirsutism New Jersey Medical School, 07/2006

## Research:

2012-2019, Co-Investigator, Center for Human Reproduction, PI – David Barad M.D., Norbert Gleicher M.D.

- Effect of Testosterone Treatment on Embryo Quality (NCT01662466)
- Effect of Influenza Vaccination on IVF Outcomes (NCT02947217)
- Effect of Influenza Vaccination on Donor Egg Recipient Outcomes (NCT02946177)
- Human Growth Hormone Pre-treatment for 6 Weeks Prior to Ovulation Induction for IVF (NCT02179255)
- Prospectively Randomized Study of Intra-ovarian Injections of Autologous PRP in Women With Primary Ovarian Insufficiency (NCT03542708)
- Comparison of The Embryoscope Time-Lapse System With Standard Embryo Culture: an Open Label Randomized Clinical Trial (NCT02246309)

2014-2019, PI, Center for Human Reproduction; University of Rochester, PI- Aritro Sen Ph.D.

• Development of recombinant Anti-Müllerian hormone (AMH) for regulation of follicular recruitment

2015-2017, PI, Center for Human Reproduction

 Utilization of third parties in assisted reproductive technology in the United States, analysis of SART data

2015-2019, PI, Center for Human Reproduction, multicenter RCT

• Study of the IVF cycle performed with intrauterine instillation of peripheral blood mononuclear cells prior to embryo transfer (# M2015-01-001)

2014-2019, PI, Center for Human Reproduction, PI – David Albertini Ph.D.

Effect of Age on Mitochondrial Function in Human Cumulus Granulosa Cells

2012, PI, Center for Human Reproduction; Oregon Health & Science University, PI- Shoukhrat Mitalipov Ph.D.

Mitochondrial DNA content in euploid and aneuploid embryos

2012-2014, PI, Center for Human Reproduction; Université Laval, Québec, CA, PI- Marc-André Sirard Ph.D.

Effect of androgens on follicular environment in patients undergoing IVF

2010-2012, Co-Investigator, Emory University School of Medicine, Pathology Department, PI – William Lewis M.D.

The Role of Mitochondrial Biogenesis in Reproductive Aging and Infertility

- 2007-2010, Co-Investigator, Emory University School of Medicine, Reproductive Endocrinology and Infertility, PI Robert N. Taylor M.D., Ph.D.
  - The Role of Endometriosis in Infertility
- 2008-2010, Co-Investigator, Emory University School of Medicine, Reproductive Endocrinology and Infertility, PI Neil Sidell Ph.D.
  - The Role of Retinoids in Oocyte Development during IVF
- 2009-2011, Co-Investigator, Emory University School of Medicine, Reproductive Endocrinology and Infertility, PI Robert N. Taylor M.D., Ph.D.
  - Effects and Mechanisms of Ethanol Exposure on Human Placental Angiogenesis
- 2009, Co-Investigator, Emory University School of Medicine, Reproductive Endocrinology and Infertility, PI Donna Session M.D.
  - Optimizing Ovulation Induction in the Poor Responder: A Randomized Clinical Trial of Luteal Phase Estradiol vs. Combined Oral Contraceptive Pill
- 2006-2008, Co-Investigator, Robert Wood Johnson Medical School, Reproductive Endocrinology and Infertility, PI John Frattarelli M.D., Richard Scott M.D,
  - The Impact of Paternal Age on Aneuploidy Rates in First Trimester Pregnancy Loss
  - Aneuploidy in First Trimester Pregnancy Loss following Intracytoplasmic Sperm Injection
  - Utility of Ultrasonography in Predicting Embryo Transfer Outcome
- 2003, University of Utah, Huntsman Cancer Center, Neurosurgery Department, PI Randy Jensen M.D. PhD.
  - In vivo and in vitro effects of calcium channel antagonists on the growth of human meningioma cells
- 2000-2001, Idaho Technologies Inc., Biotechnology Department, PI Brian Kaplan PhD.
  - Developed new tests to detect bio-terrorism agents using RAPID PCR with a built in fluorine detection system for real-time DNA quantification. Developed PCR based diagnostic tests for single gene mutation disorders (including sickle cell anemia). This project was conducted in collaboration with researchers at the Mayo Clinic.
- 1999-2000, University of Utah, Department of Biochemistry, PI Peter Beal PhD.
  - Investigated the interaction of intra cellular proteins and viral RNA's with the goal of stimulating the immune mechanism of an infected cell. Intercalating molecules were used to modulate the interferon signaling response. Funded by the Undergraduate Research Opportunities Program grant.

# Media Coverage:

- AMH based contraceptive
  - https://www.bostonglobe.com/2022/05/19/business/this-startup-aims-makecontraceptives-that-prolong-fertility-delay-menopause-improve-womens-health/
- Eden Fertility
  - https://www.newportbeachindy.com/eden-fertility-clinic-opens/
  - https://www.beckersasc.com/new-asc-development/california-fertility-clinic-opensnew-location-with-surgery-center-3-insights.html
- Everyday Habits and Fertility
  - https://www.doctoroz.com/article/8-everyday-habits-might-harm-your-fertility
- Number of Embryos Transferred during IVF
  - https://www.romper.com/p/how-many-embryos-are-inserted-during-ivf-the-number-might-surprise-you-17019433

- Effects of DHEA supplementation on Female Sexual Function
  - https://www.medscape.com/viewarticle/903241
  - https://www.asrm.org/news-and-publications/news-and-research/press-releases-and-bulletins/dhea-supplementation-improves-sexual-function-in-older-pre-menopausal-infertile-women/
  - https://rose.pharmaintelligence.informa.com/RS121868/Proof-Suggested-For-DHEA-Improving-PreMenopausal-Womens-Sex-Drive
  - https://700wlw.iheart.com/featured/bill-cunningham/, Radio Interview 10/9/18
  - Metro News Radio, Houston
  - o WBZ Radio, Boston
  - o KRLD Radio, Dallas
- 40 years of IVF
  - https://www.medscape.com/viewarticle/899896?src=wnl\_edit\_tpal&uac=112578AT&i mpID=1696856&faf=1
- Embryo Freezing
  - o https://tonic.vice.com/en\_us/article/paqgym/how-long-can-frozen-embryos-last
- Elective Egg Freezing
  - https://www.webmd.com/infertility-and-reproduction/news/20170922/egg-freezinggives-you-options-but-has-risks
  - http://www.huffingtonpost.co.uk/entry/why-freezing-your-eggs-isnt-the-sure-thingsome uk 5a6f25e2e4b0290826014b0a
- Minimal Stimulation IVF
  - http://www.healthline.com/health-news/minimal-ivf-process
- Ovarian Tissue Cryopreservation
  - https://www.wired.com/story/reboot-reproduction-modern-fertility/
  - https://www.glamour.com/story/could-freezing-ovarian-tissue-be-the-next-reproductive-breakthrough
  - WebMD
  - http://www.healthline.com/health-news/is-ovarian-tissue-freezing-better-than-egg-freezing#3
- Misconceptions, 40 years of IVF
  - https://www.revealnews.org/topic/healthcare/
- Third Party Reproduction
  - http://www.huffingtonpost.com/entry/sperm-egg-donation-app-just-baby\_us\_58ffa2d5e4b091e8c71100af
- Patient Autonomy
  - https://psmag.com/when-it-comes-to-ivf-who-should-call-the-shots-66752d574e97#.qe5xtigjd
- Embryo Banking Inflates IVF success rates
  - http://www.24-7pressrelease.com/press-release/study-demonstrates-that-currentcdc-reports-on-national-us-ivf-clinic-outcomes-are-misleading-439228.php
  - http://www.24-7pressrelease.com/press-release/study-reveals-significantly-inflated-live-birth-rates-due-to-increasing-utilization-of-embryo-banking-in-national-in-vitro-fertilization-ivf-data-set-422927.php
- Fertility Tracking App
  - http://www.wired.com/2015/10/does-glow-fertility-app-really-help-women-getpregnant/
- Frozen Eggs Have a Lower Live Birth Rate Than Fresh Eggs
  - Time.com http://time.com/3990776/ivf-egg-freezing-birth-rates/
  - The LA Times http://www.latimes.com/science/sciencenow/la-sci-sn-ivf-frozen-vsfresh-donor-eggs-20150811-story.html
  - Washington Post
    - http://www.washingtonpost.com/news/wonkblog/wp/2015/08/11/extending-fertility-with-egg-freezing-is-not-a-sure-thing/
  - Daily Mail http://www.dailymail.co.uk/health/article-3193937/Why-freezing-eggs-DOESN-T-work-IVF-successful-fresh-eggs-used-thawing-process-causedamage.html

- United Press International http://www.upi.com/Health\_News/2015/08/11/Study-Fresh-eggs-better-than-frozen-for-successful-IVF/6971439314544/
- US News and World Report http://health.usnews.com/healthnews/articles/2015/08/11/frozen-donor-eggs-may-lead-to-fewer-births-than-freshones?linkId=16224179
- Medscape http://www.medscape.com/viewarticle/849394
- Medical Daily http://www.medicaldaily.com/frozen-eggs-versus-fresh-eggs-ivfcryopreserved-donor-eggs-resulted-fewer-live-births-347158
- MedicalXPress http://medicalxpress.com/news/2015-08-vitro-fertilization-frozeneggs-birth.html
- Healthline http://www.healthline.com/health-news/lower-birth-rate-for-frozen-eggsstudy-says-081115
- The Telegraph http://www.telegraph.co.uk/news/health/news/11796942/Delaying-motherhood-by-freezing-eggs-could-harm-birth-chances.html
- The Boston Globe https://www.bostonglobe.com/news/science/2015/08/11/whencomes-ivf-frozen-and-fresh-eggs-may-notequal/nk2KBnuM5aoQfQx4EfrnQP/story.html
- Young Health Magazine http://www.youthhealthmag.com/articles/21075/20150812/freezing-eggs-could-harm-chances-of-successful-birth.htm
- Health Aim http://www.healthaim.com/fresher-eggs-better-frozen-ones-ivf/26342
- UK Health News via WebMD http://www.webmd.boots.com/fertility/news/20150812/ivf-fresh-eggs-or-frozen
- Utah People's Post http://www.utahpeoplespost.com/2015/08/fresh-eggs-preferablefor-ivf/
- Mirror Daily http://www.mirrordaily.com/frozen-eggs-result-in-fewer-ivfpregnancies/23510/
- NYC Today http://nycity.today/content/284075-freezing-eggs-method-may-not-bebestway-ensure-pregnancy
- Latinos Health http://www.latinoshealth.com/articles/8451/20150812/frozen-eggs-ivf-success-rate-not-as-good-as-fresh-ones-study.htm
- Wired http://www.wired.com/2015/08/everything-still-dont-know-egg-freezing/
- Huffington Post http://www.huffingtonpost.com/deborah-anderson-bialis/hidden-meaning-of-fertili\_b\_7980376.html
- NPR http://www.npr.org/sections/health-shots/2015/08/28/435251307/freezingeggs-may-reduce-a-womans-odds-of-success-with-ivf
- BMJ 2015;351:h4352 doi: http://dx.doi.org/10.1136/bmj.h4352
- IVF success rates may be misleading
  - New Scientist https://www.newscientist.com/article/mg23631542-700-fertility-clinicsare-fudging-ivf-stats-to-look-more-successful/
  - Digital Journal http://www.digitaljournal.com/pr/3368122
  - Fertility Authority http://www.fertilityauthority.com/articles/transparency-fertility-clinic-reporting
  - Reuters http://www.reuters.com/article/2013/07/04/us-reported-ivf-success-rates-canbe-mis-idUSBRE9630L320130704
  - Chicago Tribune http://articles.chicagotribune.com/2013-07-04/lifestyle/sns-rt-us-reported-ivf-success-rates-can-be-misleading-20130704\_1\_clinics-ivf-cycles
  - Fertility Authority http://www.fertilityauthority.com/articles/ivf-success-rates-may-be-misleading
- Fertility Treatment Costs
  - Fox News http://www.foxnews.com/health/2013/09/18/average-out-pocket-fertilitycosts-top-5000/

- Reuters http://www.reuters.com/article/2013/09/17/us-fertility-costsidUSBRE98G13J20130917
- Data on Fertility Rates
  - New York Times http://well.blogs.nytimes.com/2014/04/28/data-murky-on-fertility-rates/?\_php=true&\_type=blogs&\_r=0
- HIV and antiretroviral therapy may affect fertility
  - AIDS Beacon http://www.aidsbeacon.com/news/2011/07/14/hiv-aids-and-antiretroviral-therapy-may-affect-fertility/

# **Innovation and Commercialization:**

- US Patents and Applications
  - Anti-Müllerian Hormone (AMH) administration to improve oocyte retrieval probabilities, US Patent # 9,974,834; 5/22/2018
  - Composition and Methods of Using Anti-Müllerian Hormone for Treatment of Infertility. US Patent # 10,478,473; 11/19/2019
  - Diagnosis, and Anti-Müllerian Hormone (AMH) administration for treatment of infertility for good, intermediate, and poor prognosis patients for in vitro fertilization in view of logistic regression models, US Patent # 10,175,252, 1/8/2019; and US Patent # 10,884,003, 01/05/2021
  - Oocyte retrieval probabilities based on anti- mullerian hormone (amh) levels in poor pregnancy prognosis patients with small oocyte yields -- selection and amh administration thereof, US20170252404A1; 05/22/2018
  - Dehydroepiandrosterone (DHEA) supplementation on female sexual desire and function in pre-menopausal women
- Co-Founder OvaNova Laboratories, LLC
- Co-Founder Generation Medical Associates, PLLC
- Co-Founder Genova Laboratories, LLC
- Medical Advisory Board Thread Robotics
- Medical Director Cysterhood Fertility
- Medical Director TruCheck Health

#### **Honors:**

- CA Magazine Top Doctors, 2020
- NY Top Docs 2019, 2020
- Session Chairman, Translational Reproductive Biology and Clinical Reproductive Endocrinology, New York City, Nov 15-18, 2018
- Presidential Poster Competition Winner, ENDO 2017, Orlando, FL, April 1, 2017
- Session Chairman, Translational Reproductive Biology and Clinical Reproductive Endocrinology, New York City, Nov 16-19, 2017
- Session Co-Chairman, Translational Reproductive Biology and Clinical Reproductive Endocrinology, New York City, Nov 17-20, 2016
- Vitals On-Time Doctor Award
- Vitals Compassionate Doctor Award
- Vitals Patient Choice Recognition Award
- Excellence in Research by a Fellow, Emory University, 2012
- Best Research Proposal by a Fellow, Emory University, 2010

- Resident Research Award, New Jersey Medical School, 2007
- Operation Smile Fund Raising Chair, University of Utah Chapter, 1998-2001
- Department of Science Scholarship, University of Utah 2000
- Henry Eyring Chemistry Scholarship, University of Utah 2000
- Handley Memorial Scholarship, University of Utah 1999
- Herbert and Elsa Michael Foundation Scholarship, University of Utah 1999
- Presidential Scholarship, University of Utah 1998

## **Peer Review:**

- JAMA
- BMC Medicine
- BMC Pregnancy and Childbirth
- Israel Science Foundation Grants
- Fertility Sterility
- Human Reproduction
- American Journal of Obstetrics & Gynecology
- Climacteric
- PLoS ONE
- Journal of Assisted Reproduction and Genetics (JARG)
- Mechanisms of Ageing and Development
- Cellular Physiology and Biochemistry
- Journal of Ovarian Research
- Reproductive Bio-Medicine Online
- Reproductive Biology and Endocrinology
- Gynecologic and Obstetric Investigation
- European Journal of Obstetrics & Gynecology and Reproductive Biology
- Steroids
- Endocrine
- Scientific Reports
- Sexual Medicine
- Leukemia and Lymphoma
- Medical Devices: Evidence and Research
- Saudi Medical Journal
- Faculty of 1000

#### Funding:

• Foundation for Reproductive Medicine 2012- 2019

#### Committees:

- Alumni Committee Sackler School of Medicine
- Program Committee Translational Reproductive Biology and Clinical Reproductive Endocrinology 2016-2018
- International Society of Reproductive Genetics, Board of Directors, 2021