



Maria José de los Santos, PhD

IVIRMA Valencia

Plaza Policía Local 3 Valencia, Spain

E mail address: mariajose.delossantos@ivirma.com

PROFILE

I started my career in 1991 in the IVF laboratory of IVI Valencia. I received her PhD in Biology from University of Valencia in 1996, and from 1996-1999 I carried out my postdoctoral fellowship in Reproductive Immunology at Fearing Research Laboratory at Harvard Medical School. I also worked as embryologist at the Brigham and Women's Hospital. I belong to the editorial board of two recently created scientific journals (MEDRES and Fertility Research and Practice) and to Fertility and Sterility as a Global Associates.

I am author of many scientific publications on peer-reviewed journals and of several book chapters. I have addressed my research in clinical embryology and reproductive biology. Currently I am the IVF Laboratory Director of IVI RMA Valencia

PROFESSIONAL CERTIFICATIONS

Master in Biology of Reproduction. University of Valencia

HONORS

1991 Sociedad Española de Infertilidad Award . Alicante. Spain.

1994 American Fertility for Reproductive Medicine Award. Seattle. USA.

1995 Sociedad Española de Infertilidad Oral Communication Award. Tenerife. Spain.

2000 Sociedad Española de Infertilidad Oral Communication Award. Sevilla. Spain.

2009 ASEBIR Best Clinical Oral Communication Award. Valencia. Spain

MEMBERSHIPS AND PROFESIONAL ASSOCIATIONS

1992-present Member of Sociedad Española de Infertilidad (SEF)

1993-present Member of ASEBIR

1999-2004 Member of ESHRE

2004-2009 Board Member of ASEBIR

2009-2013 President of the Interest Group in Embryo Quality of ASEBIR

2013-2015 Deputy of the Interest Group in Embryo Quality of ASEBIR

2010-2013 Deputy Member of Special Interest Group in Embryology ESHRE

2013-2015 Coordinator of Special Interest Group in Embryology ESHRE

2009-present Member of the National Spanish Register of activity-SEF Registry.

2015-present Past -Coordinator of Special Interest Group in Embryology ESHRE

2015-present Designated participant from Spanish Government for the 3rd and 4th edition of "Guide to the Quality and Safety of Tissues and Cells for Human Application" of the European Council

PUBLICATIONS AND BOOK CHAPTERS

Labarta E; De los Santos MJ; Escribá MJ; Pellicer A; Herraiz S Mitochondria as tool for ovarian rejuvenation Fertil Steril 2018; Fertil sterility Accepted

Labarta E, De los Santos MJ, Herraiz S; Escribá MJ, Marzal A, Buigues A, Pellicer A. Autologous mitochondrial transfer as a complementary technique to improve embryo quality in IVF patients. A Randomized Pilot Study. Fertil sterility 2018; In press

De Los Santos MJ, Diez Juan A, Mifsud A, Mercader A, Meseguer M, Rubio C, et al. Variables associated with mitochondrial copy number in human blastocysts: what can we learn from trophectoderm biopsies? *Fertility and sterility* 2018; 109:110-7.

The Vienna consensus: report of an expert meeting on the development of ART laboratory performance indicators. *Reproductive biomedicine online* 2017; 35:494-510.

Fernando Bronet; M^a José De los Santos Molina. Posibilidad frente a realidad un enfoque práctico. Cuadernos de medicina reproductiva. 23 - 1, pp. 93 - 100. ANNAR Nuevo Siglo SL, 2017.

Motato Y; De los Santos MJ; Escriba MJ; Aparicio Ruiz B; Remohí J; Meseguer M. Morphokinetic analysis and embryonic prediction for blastocyst formation through an integrated time-lapse system. *Fertility and sterility* 2016; 105 - 2.

Belén Aparicio; M^a José De los Santos. Morphological cytoplasmic oocyte alterations: embryo kinetics of dysmorphic oocytes. *Time-Lapse Microscopy in In-Vitro Fertilization*. Cambridge University Press, 2016.

De los Santos MJ, Apter S, Coticchio G, Debrock S, Lundin K, Plancha CE, et al. Revised guidelines for good practice in IVF laboratories. *Hum Reprod* 2016; 31:685-6.

De los Santos MJ, Gámiz P, de los Santos JM; Romero J¹, Prados N³, C Alonso C⁴, Remohí J^{1,2}, F. Dominguez² Metabolomic profile of spent culture media of human day 3 embryos cultured under low oxygen tension. *PLoS one* 2015; 10:e0142724.

Kovacic B, Plas C, Woodward BJ, Verheyen G, Prados FJ, Hreinsson J, De los Santos MJ, Magli MC, Lundin K and Plancha CE. The educational and professional status of clinical embryology and clinical embryologists in Europe. *Hum Reprod* 2015; 30:1755-1762.

Bellver, J., De los Santos, M. J., Alama, P. et al. Day-3 embryo metabolomics In the spent culture media is altered in obese women undergoing in vitro fertilization, *Fertil sterility* 2015, 103, 1407-1415.

Virginia García-Láez , Vicente Serra, José Bellver , Jaime Ferro , Carmina Vidal , José María De los Santos, Mari Carmen Rubio , Julio Martín, Carmen Martínez , María José De los Santos. Gene polymorphisms and HLA-G expression in spontaneous abortions s *Medicina Reproductiva y Embriología Clínica* (2015) 2, 82-92

Mendoza R., Pérez S., De los Santos MJ., Larreategui Z., Alberdi F., Expósito A., Burgos J., Martínez Indart L., Pijoan J., Matorras R. Congenital malformations, chromosomal abnormalities and perinatal results in IVF/ICSI newborns resulting from very poor quality embryos: a case-control study. *Gynecologic and Obstetric Investigation*.

Evaluación morfológica del estadio de mórula a blastocisto. Criterios ASEBIR de Valoración morfológica de Oocitos, embriones tempranos y blastocistos. Góbal, 2015

Herrero J; Tejera A; Alberto A; Vidal C; De los Santos MJ; Meseguer M. A time to look back: analysis of morphokinetic characteristics of human embryo development. *Fertility and sterility*. 100 - 6, pp. 2013.

De Los Santos MJ, Gámiz P, Albert C, Galán A, Viloría T, Pérez S, et al. Reduced oxygen tension improves embryo quality but not clinical pregnancy rates: a randomized clinical study into ovum donation cycles. *Fertility and sterility*. 2013;100 (2):402-7.

Hortal L, de los Santos MJ. Multinucleación y desarrollo embrionario *Revis Asoc Est Rep* 17: 23-28 2012

De los Santos JM; De los Santos MJ . Estudio del fracaso de fecundación. Casos Clínicos de Reproducción Asistida. Editorial Médica Panamericana, 2014

Escrich L, Grau N, De Los Santos MJ, Romero JL, Pellicer A and Escriba MJ. The dynamics of in vitro maturation of germinal vesicle oocytes. *Fertility and Sterility* 2012, 98:1147-1151.

Cobo A, Castelló D, Vallejo B, Albert C, De los Santos JM, Remohí J. Outcome of cryotransfer of embryos developed from vitrified oocytes: double vitrification has no impact on delivery rates. *Fertility and sterility*. 2013;99(6):1623-30.

De los Santos MJ, García-Laez V., Beltrán D, Labarta E., Zuzuarregui JL. Alamá P., Gámiz P., Crespo J., Bosch E. m Pellicer A. The follicular hormonal profile in low-responder patients undergoing unstimulated cycles: is it hypoandrogenic? *Hum Reprod* 2012, 28:224.229,

De los Santos MJ, Garcia-Laez V, Beltran-Torregrosa D, Horcajadas JA, Martinez-Conejero JA, Esteban FJ, Pellicer A, Labarta E. 2012. Hormonal and molecular characterization of follicular fluid, cumulus cells and oocytes from pre-ovulatory follicles in stimulated and unstimulated cycles. *Hum Reprod* 2012, 27:1596-605 .

C. Vidal, M^a J. de los Santos, J. Giles. Protocolos orientados a los pacientes (MEGASET). En Cuadernos de Medicina Reproductiva. Adalia. Madrid 2012; 18 (2): 29- 38.

Cobo A, Romero JL, Perez S, de los Santos MJ, Meseguer M, Remohi J. Storage of human oocytes in the vapor phase of nitrogen. *Fertil sterility*; 94: 1903-1907..

Eva Piñero-Sagredo, Sofía Nunes, M^a José de los Santos, Bernardo Celda, Vicente Esteve. NMR metabolic profile of human follicular fluid. *NMR In Biomedicine* 2010, 22:1-11

Herrero J, Tejera A, de los Santos MJ, Garrido N, Ramsing N, Meseguer M. Nuevos métodos de selección embrionaria: una nueva tendencia para transferencias únicas. *Revista Iberoamericana de Fertilidad* 26: 393-402. 2009.

Blockeel C, Mock P, Verheyen G, Bouche N, Le Goff P, Heyman Y, Wrenzycki C, Hoffmann K, Niemann H, Haentjens P, de Los Santos MJ, Fernandez-Sanchez M, Velasco M, Aebischer P, Devroey P, Simon C. An in vivo culture system for human embryos using an encapsulation technology: a pilot study. *Hum Reprod* 2009; 24: 790-796.

García Láz V, De los Santos JM, Serra V, Pellicer A, De los Santos MJ. Expresión del complejo principal de histocompatibilidad (MHC) clase I y clase II en gametos humanos. *Revista Iberoamericana de Fertilidad* 2008,25: 333-344.

A Cobo, S Perez, J Zulategui, MJ De los Santos, J Domingo, J Remohí. Effect of different cryopreservation protocols on the metaphase II spindle in human oocytes *RBMonline* 2008; 17:350-359

Escribá MJ, Zulategui JF, Galán A, Mercader A, Remohí J, de Los Santos MJ. Vitrification of preimplantation genetically diagnosed human blastocysts and its contribution to the cumulative ongoing pregnancy rate per cycle by using a closed device. *Fertil sterility* 2007

Gestación por sustitución. Comentarios científicos-jurídicos de la ley de técnicas de reproducción humana asistida. Comentarios científicos-jurídicos de la ley de técnicas de reproducción humana asistida. 10, Dykinson S.L, 2007

Cobo A, Bosch E, Alvarez C, de los Santos MJ, Pellicer A, Remohi J. Effect of sharp serum oestradiol fall before HCG administration during ovarian stimulation in donors. *Reprod Biomed Online* 2007; 15: 169-174.

M^a José de los Santos, María Pilar Ferrer Vanrell. Artículo 10. Gestación por sustitución. Comentarios científicos-jurídicos de la ley de técnicas de reproducción humana asistida. Editorial Dykinson S.L. 2007;157-166

Rubio, C. Rodrigo, L. Mercader, A. Mateu, E. Buendia, P. Pehlivan, T. Vilorio, De Los Santos, M. J. Simón, C. Remohi, J. Pellicer, A. "Impact of chromosomal abnormalities on preimplantation embryo development." *Prenat Diagn* 2007.

Gimeno L. MA, Meseguer M., De los Santos JM, Pellicer A., Remohí J., De los Santos MJ. Estudio comparativo de dos medios de cultivo HTF e ISM-1: implicaciones en el fenotipo embrionario y resultados clínicos. *Revista Iberoamericana de Fertilidad*. 23: 375-382 2006.

Meseguer M, de los Santos MJ, Simon C, Pellicer A, Remohi J, Garrido N. Effect of sperm glutathione peroxidases 1 and 4 on embryo asymmetry and blastocyst quality in oocyte donation cycles. *Fertil sterility* 2006; 86: 1376-1385.

Escribá MJ, Escobedo Lucea C, Mercader A, De los Santos MJ, Pellicer A, Remohí J,. Ultrastructure of preimplantation genetic diagnosis derived human blastocysts grown in a coculture system alter vitrification. *Fertile Sterility* 86: 664-671. 2006

Muriel L, Garrido N, Fernández JL, Remohí J, Pellicer A, De los Santos MJ, Meseguer M. Value of sperm deoxyribonucleic acid fragmentation level, as measured by the sperm chromatine dispersion test, in the outcome of the in vitro fertilization and intracytoplasmic sperm injection. *Fertil Steril* 85: 371-383. 2006.

De los Santos JM, de los Santos MJ, Remohí J, Pellicer A, Serra V Mecanismos inmunológicos de la gestación. *Revista Iberoamericana de Fertilidad*, 22: 213-223, 2005.

De los Santos MJ, Mercader A, Galán A, Albert C, Romero JL, Pellicer A. Implantation rates after two, three, or five days of embryo culture. *Placenta* S13-S19. 2003.

Pilar Gámiz, Rubio C, De los Santos MJ, Mercader A, Simón C, Remohí J, Pellicer A. The effect of pronuclear morphology on early development and chromosomal abnormalities in cleavage-stage embryos. *Hum Reprod* 2413-2419. 2003.

De los Santos MJ, Romero JL, Ruiz A. *El laboratorio de Reproducción Humana Asistida. Reproducao Humana Asistida* . Editorial Atheneu 2003 CL-

De los Santos MJ, Cobo A, Ruiz A, Romero JL, Galán A, Pellicer A, Remohí J. *El nuevo laboratorio de fecundación in Vitro, una "cleanroom"*. *Reproducción Humana* 2ª Edición. Editorial Mc Graw Hill. 2002 CL.

Antonio Pellicer; José Remohi; M^a José de los Santos; Josep Lluís Romero; Ana Cristina Cobo; Amparo Ruiz. *Actual papel de la Fecundación In vitro. Reproducción Humana* 2. Edición. Mc Graw Hill, 2002.

Ruiz A, Cobo A, Romero JL, De los Santos MJ, Remohí J, Pellicer A. *Actual papel de la Fecundación In vitro. Reproducción Humana* 2. Edición. Editorial Mc Graw Hill ,2002.

Wang CZ, Yunis EJ, Xiao L, De los Santos MJ, Anderson DJ, Hill JA. The HLA-DQ pocket influences susceptibility to recurrent pregnancy loss mediated by T-helper type 1 immunity to trophoblast. *Am J. Obstet Gynecol.* 2002..

Wang CZ, Yunis EJ, De los Santos MJ, Xiao L, Anderson DJ, Hill JA. T helper 1- type immunity to trophoblast antigens in women with a history of recurrent pregnancy loss is associated with polymorphisms of the IL1- β promoter region. *Genes and Immunity* 3: 38-42, 2002..

Mercader A, Galán A, Albert C, Herrer R, Pellicer A, Remohí J, De los Santos MJ. Predictive value of three or more eight-cell embryos on day 3 of development on blastocyst formation and pregnancy rates in a coculture system. *Reproductive Technologies* 10. 2001.

De los Santos MJ. Condiciones óptimas de trabajo en el laboratorio de FIV. *Revista Iberoamericana de Fertilidad* 18: 34-39. 2001.

De los Santos MJ ; D J Anderson; C Racowsky; C Simón; J A Hill. Expression of interleukin-1 system genes in human gametes. *Biology of reproduction* 1998 . 59 - 6

C Rubio; Y Minguez; M J De Los Santos; A Ruiz; J Romero. Intracytoplasmic sperm injection (ICSI). *Frontiers in bioscience : a journal and virtual library* 1997. 2

Remohí J; Gallardo E; Levy M; Valbuena D; de los Santos MJ; Simón C; Pellicer A. Oocyte donation in women with recurrent pregnancy loss. *Human Reprod* 1996. 11-9.

M Gil Salom; J Romero; Y Minguez; C Rubio; M J De los Santos; J Remohí; A Pellicer. Pregnancies after intracytoplasmic sperm injection with cryopreserved testicular spermatozoa. *Human Reprod* 1996 11 – 6

De los Santos MJ ; A Mercader; A Francés; E Portolés; J Remohí; A Pellicer; C Simón. Role of endometrial factors in regulating secretion of components of the immunoreactive human embryonic interleukin-1 system during embryonic development. *Biology of reproduction* 1996, 54

Gil Salom M;Mínguez Y; Rubio C; De los Santos M J; Remohí J; Pellicer A. Efficacy of intracytoplasmic sperm injection using testicular spermatozoa. *Human Reprod* 1995 10 - 12,

Tarín J; de los Santos M J; de Oliveira N; Pellicer A; Bonilla Musoles F. Ascorbate-supplemented media in short-term cultures of human embryos. *Human Reprod* 1994 9 - 9

A Pellicer; M Marí; M J de los Santos; C Simón; J Remohí; J J Tarín. Effects of aging on the human ovary: the secretion of immunoreactive alpha-inhibin and progesterone. *Fertility and sterility* 1994. 61 - 4.

Simón C; A Gutiérrez; A Vidal; M J de los Santos; J J Tarín; J Remohí; A Pellicer. Outcome of patients with endometriosis in assisted reproduction: results from in-vitro fertilization and oocyte donation. *Human Reprod* 1994, 9 - 4

De los Santos MJ Tarín; J J; Gómez E; Remohí J; Pellicer A. Daily measurements and in-vitro effects of human chorionic gonadotrophin in the early luteal phase. *Human Reprod* 1993 , 8 - 12,