THE MALE FACTOR IN HUMAN REPRODUCTION
THE MARS - MALE REPRODUCTIVE SURGERY and MICROSURGERY - ROLE

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THE STATE OF THE ART: Four majors surgical areas in Men's Health Medicine have been defined: Sexual Surgery and Male Sexual Surgery-MAS, GERS and GERMS (Genital Reconstructive Surgery / Gender Reassignment Surgery, Gender Reassignment Male Surgery), MARS (Male Reproductive Surgery), MIMIS (Male Infertility Micro Surgery), MIRES (Male Infertility Reconstructive Surgery)

MaRS - Male Reproductive Surgery is using Surgery in the field of Male Reproductive Medicine. It can be used for contraception too, as in reversible vasectomy, but is used plentifully in assisted reproductive technology, especially for sperm retrieval, in vasectomy reversal or in vas deferens obstruction. Male Reproductive Surgery has largely increased the indications, due to the introduction of Microsurgery and Microsurgical Technologies and Techniques, launching the new areas of MIMIS and MiReS.

MIMIS - Male Infertility Micro Surgery: Our MIMIS Team has extensively applied 1a. the microsurgical tubulo-vasostomy procedures, with the different variations, end-to-end, side-to-end, side-to-side and 1b. the special techniques of pull-through end-to-end tubulo-vasostomy, and the intraepididymal tubulo-tubulostomy, described, refined and standardized by prof. G. Tritto, 2. the LUSTT-Lobular Unrolling Spermatic Tubule Trimming, from prof. G. Tritto for testicular tubules spermatogenesis analysis and in vitro culture, 3. the end-to-end vaso-vasostomy on three layers, 4. the Microsurgical correction of bilateral varicocele through subinguinal and scrotal approaches with microthermic and infrared monitoring with a double regular and micro-infrared cameras on operative microscope

MiReS - Micro Reconstructive Surgery is using a combination of Microsurgical Techniques with Plastic Reconstructive Techniques: Our MiReS Team has introduced 1. Innovative Techniques of GeRS-Genital Plastic Reconstructive Surgery to correct the visible asymmetries of the scrotum, using scrotum reshaping techniques, called Scrotoplasties, including ROP (Raphe Oscheo-Plasty) augmentation scrotoplasties and sculptured intrascrotal lipectomies (LIPS-Lipectomy of the Scrotum) 2. the elongation techniques with spermatic cord suspension for high, maldiscendent and malpositioned testes (SPECS - Spermatic Cord Suspension) 3. MIVAS (Micro Vascular Surgery), MIRES (Micro Reconstructive Surgery), IRMIS (InfraRed MicroSurgery), TACAB (Testis Augmentation Capacity Building) are the main techniques currently applied in the Male Infertility Factor with severe impairment of sperm production and testosterone level through 1. the selective microsurgical correction of the microvenous compartments, sparing artery branches, lymphatics and nerves, 2. the re-setting of the metabolic and thermoregulatory recovery of the testes-scrotal complex 3. through the augmentation capacity of production of testosterone from Leydig cells in associated hypogonadism,
using microsurgical augmentation orchidoplasty. All these techniques have been realized in Microsurgery with the assistance of MicroInfrared Technology (MIR Tech) in azoospermia or severe OATS with or without varicocele to perform in the same time MESA, TESE and Micro-TESE for specific ARTs, including ICSI and IMSI. The improvements on the Morphology of Sperm have been evaluated through Kruger morphology score and through Bartov (MSOME) and Cassuto (SICSI) high magnification criteria in selection of spermatozoa for IMSI, as well as the endogenous testosterone production.