

Shady Grove Fertility (SGF) Presented Key Findings at the 2020 American Society for Reproductive Medicine (ASRM) Scientific Congress & Expo

Shady Grove Fertility's (SGF) physician-scientists presented exciting, new research findings during the 2020 American Society for Reproductive Medicine (ASRM) Scientific Congress & Expo as part of the practice's commitment to advancing knowledge and improving assisted reproductive technology (ART) treatment outcomes. Remarkably, all 17 abstracts submitted by SGF to the ASRM meeting's scientific program committee were accepted for presentation.

Hosted virtually this year, the 2020 ASRM Scientific Congress and Expo took place October 17-21 and welcomed nearly 10,000 attendees from 94 countries. During a time when much of the world is connected from a distance, this year's theme of Dynamic Collaborations in Reproductive Medicine helped close the physical divide.

For the past 29 years, the physicians at SGF have demonstrated a sustained commitment to clinical research and to educating the next generation of reproductive endocrinologists. SGF is one of only a few private practice fertility centers in the country to employ a full-time dedicated research team, which operates under Director of Research, Kate Devine, M.D.

“ SGF believes that it is our responsibility to give back to our patients by conducting high-quality research and by training the physicians who will take care of them in the future. The findings of our studies enable us to provide the best possible information and treatment outcomes to those struggling with infertility.

– Kate Devine, M.D., Director of Research ”

Featured SGF Physician Research Team



KATE DEVINE, M.D.



ERIC A. WIDRA, M.D.



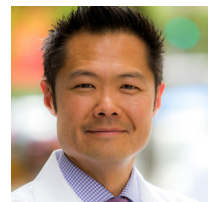
NANCY DURSO, M.D.



JEANNE E. O'BRIEN, M.D.



CORI TANRIKUT, M.D.



PAUL SHIN, M.D.

Total Motile Sperm Count (TMSC) Sheds Important Light on Likely Intrauterine Insemination (IUI) Pregnancy Rates

Large Data Set Confirms How Total Motile Sperm Counts (TMSC) during Intrauterine Insemination (IUI) Affects Pregnancy Rates

SGF Researchers: Samad Jahandideh, Ph.D., Sharon K. Shipley, M.S., Jeanne E. O'Brien, M.D., Paul R. Shin, M.D., Kate Devine, M.D., and Cigdem (Cori) Tanrikut, M.D.

Research Contributors: Akhil Muthigi, M.D., Lauren A. Bishop, M.D., and Firoozeh K. Naeemi, BS

THE STUDY

Intrauterine insemination (IUI) is one of the most basic forms of fertility treatment and has provided many who have struggled to conceive with the ability to build their families. Compared with more advanced treatments such as in vitro fertilization (IVF), IUI is less expensive but, in general, is associated with lower pregnancy rates.

At SGF, a semen analysis is part of any couple's initial fertility work-up. This helps determine if male factor infertility may be playing a role in the couple's inability to conceive. Before an IUI cycle, most patients will have a sperm wash to prepare the sample for insemination. At this time, the total motile sperm collected are counted. The sperm count can range from nearly zero to tens of millions.

When considering expected total motile sperm count for an IUI, two important variables need to be accounted for:

1. Total motile sperm count from the baseline semen analysis, and
2. The impact that sperm washing (a procedure in which a sperm sample is concentrated that is necessary for IUI) will have on that number.

The SGF research team reviewed 92,471 stimulated clomiphene citrate, letrozole, and/or injectable gonadotropin IUI cycles performed at a single location from 2002 through 2018. From these insemination cycles, the research team evaluated the relationship between TMSC and clinical pregnancy. The primary outcome was determined by successful clinical pregnancy reinforced by ultrasound confirmation of an intrauterine gestational sac.

THE RESULTS

IUI pregnancy is optimized with TMSC ≥ 9 million, below which rates gradually decline. The most optimal success from IUI was seen above ≥ 9 mil post-wash TMS. Although rare, pregnancies were achieved with TMSC < 0.25 million.

Relationship between Pregnancy Rates and TMSC

Total Motile Sperm Count (millions)	Number of Insemination Cycles	Number of Clinical Pregnancies	Clinical Pregnancy Rate per Cycle
<0.25	263	11	4.18%
0.25-0.49	341	14	4.11%
0.50-0.99	627	23	3.67%
1.00-1.99	1611	120	7.45%
2.00-3.99	4561	462	10.13%
4.00-4.99	2845	331	11.63%
5.00-5.99	3109	400	12.87%
6.00-6.99	3474	484	13.93%
7.00-8.99	6810	976	14.33%
≥ 9	68830	11496	16.70%

FOR YOUR PATIENTS

Backed by the results of over 92,000 IUI cycles, clinicians can advise patients regarding their odds of success from IUI and patients can make informed decisions between low-tech treatment and IVF.

Patients Who Have Conceived Using Donated Eggs Are More Likely to Give Back by Donating Embryos

Just Over One-Third of Patients Interested in Embryo Donation Complete Embryo Donation

SGF Research Team: Samad Jahandideh, Ph.D., Kate Devine, M.D.

Additional Contributors: Olivia Carpinello, M.D., B. Mitchell Bodily, M.D., Morine Cebert, Ph.D., RN, Joshua C Combs, M.D., Micah J. Hill, DO, and Alan H. DeCherney, M.D.

THE STUDY

The path to parenthood is not always a direct one, especially for two important patient populations: those who elect to donate embryos and those who endeavor to achieve parenthood by receiving a donated embryo. SGF's growing and successful embryo donation program is leading the way to provide the data to support these patients. Embryo donation represents a highly effective and efficient option for women of advanced reproductive age who are unable to conceive with their own eggs, especially those choosing to conceive without a partner.

The studies sought to elucidate factors that lead patients to donate embryo(s) or to receive donated embryo(s), as well as to better understand cycle outcomes using donated embryos. Patients at a single infertility practice who expressed interest in embryo donation from 2015 to January 2020 were referred to the SGF's embryo donation team.

Criteria for embryo donation included:

- embryos vitrified onsite at blastocyst stage on day 5 or 6,
- egg age <40 years,
- sperm age <50 years,
- PGT-M/SR excluded,
- PGT-A euploid permitted, and
- embryos were accepted if associated clinical data indicated ≥ 40 -45% odds of live birth, assuming no recipient uterine factor.

THE RESULTS

Of the 438 patients who expressed interest in donating supernumerary embryos, 42.2% completed embryo donation. Of those who donated, a surprisingly high number (48.0%) of patients utilized donor eggs in embryo creation. These numbers are much higher than the approximate 10% of IVF cycles that utilize donor egg at Shady Grove Fertility.

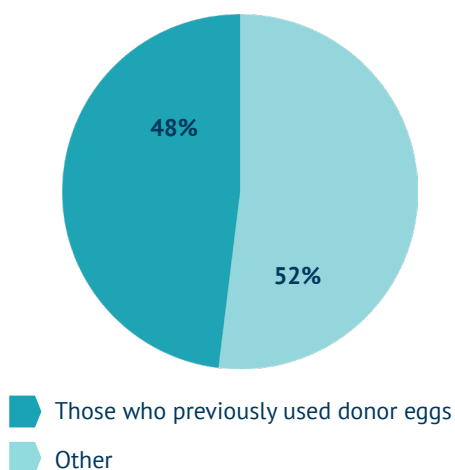
An impressive 43% of embryo transfers with donated embryo(s) resulted in successful pregnancies. In addition to demonstrating high live birth rates resulting from transfer of donated embryos, SGF's research demonstrated that women and couples who conceived using donor egg IVF were more likely to go on to become embryo donors, perhaps due to a desire to give back, and help others achieve their family building goals as well.

There are likely complex social, cultural, psychological, and ethical components to embryo donation. It is possible that these patients have a less genetically-centered definition, and experience, of family, which makes them more inclined both to use donor eggs and to donate embryos.

FOR YOUR PATIENTS

An impressive 43% of embryo transfers with donated embryo(s) result in successful pregnancy.

PATIENTS WHO DONATED EMBRYOS



WHAT CAN PATIENTS DO WITH UNUSED EMBRYOS?

SGF is pleased to offer patients the option to donate their embryos either to a known (direct) recipient or an unidentified recipient—another patient at SGF.

SGF's program helps alleviate the concern of what to do with excess embryos and eliminates the monthly storage fee required to continue storing frozen embryos.

Embryo donors do not incur any costs related to their donation.

A Healthy Weight Increases the Odds of a Healthy Pregnancy

Obese Patients are Less Likely to Pursue Fertility Treatment and Take a Longer Time to Do So, after Initial Infertility Consultation

SGF Research Team: Samad Jahandideh, Ph.D., Kate Devine, M.D., and Nancy Durso, M.D.

Research Contributors: Anne E. Martini, DO, Jaclyn Kwal, M.D., Alan H. DeCherney, M.D., and Micah J. Hill, DO

THE STUDY

Weight can often be a sensitive topic, but it is important to address, not only because the rate of obesity is increasing but also because it can have a significant impact on patients' – men and women – overall health and ability to get pregnant.

Just as serious medical diagnoses like diabetes, hypothyroidism, and hypertension must be under control before pregnancy, so must weight. In considering the impact of obesity on maternal and fetal health, evidence-based body mass index (BMI) thresholds for fertility treatment are being more commonly implemented. BMI measures the percentage of body fat based on height and weight. A normal (or ideal) BMI falls between 19 and 25.



A 5-10% weight loss can help a woman resume regular ovulation.*

*If her inability to conceive is associated with weight alone.

SGF's research goal was to evaluate drop-out rates and time to first treatment by BMI in patients presenting for infertility care. During this study, charts of patients presenting for infertility care in the first 3 months of 2016 were reviewed to allow 4 years of follow up. Data collected includes age and BMI at initial consult, time to first treatment (if pursued), infertility diagnosis, treatment type, and cycle outcome.

THE RESULTS

Research found that obese women are less likely to proceed with fertility treatment after an initial consultation with a fertility specialist and that there is a longer average duration before treatment begins for such patients.

From the study, 2,061 patients met study inclusion criteria, 60.4% of which initiated treatment after initial consult. The mean age and BMI were 33.7 years and 28.2 kg/m², respectively. Infertility diagnosis was listed as an-/oligo-ovulation for ≥18% of obese vs ≤12.8% for non-obese women.

Drop-out rate and time to treatment increased linearly with BMI, however underweight patients also had longer time to treatment. If a treatment cycle was pursued, rates of clinical pregnancy decreased as BMI increased.

	All	Under-weight (<18.5)	Normal (18.5-24.9)	Over-weight (25.0-29.9)	Class 1 (30.0-34.5)	Class II (35.0-39.9)	Class III (≥40.0)		
							All	40-43.9	≥44
Patients (n)	2061	28	844	525	278	204	157	79	78
BMI (kg/m ²)	28.2 ± 7.3	17.7 ± 0.8	22.3 ± 1.7	27.3 ± 1.4	32.0 ± 1.3	37.3 ± 1.5	45.4 ± 5.1	41.8 ± 1.3	49.0 ± 4.9
Age (y)	33.7 ± 5.3	32.1 ± 4.0	33.6 ± 5.2	34.0 ± 5.2	33.8 ± 5.7	33.1 ± 5.3	34.3 ± 5.6	34.2 ± 6.0	34.4 ± 5.1
Drop-out rate (%)	39.6	25.0	32.7	36.0	42.4	51.0	67.5	55.7	79.5
Time to treatment (if pursued) (d)	171.69 ± 215.4	214.7 ± 343.2	157.8 ± 193.7	166.6 ± 204.1	186.1 ± 227.4	208.8 ± 269.5	219.8 ± 269.4	180.5 ± 205.1	315.1 ± 376.5
Clinical Pregnancy Rate for first treatment (if pursued) (%)	14.6	25.0	16.4	15.2	14.4	11.8	5.1	2.5	7.7

mean ± SD unless otherwise stated



IMPACT OF WEIGHT ON MALE FERTILITY

A higher BMI in men can affect male fertility in important ways:

1. Obesity can cause changes in hormone production and may impair the man's ability to make sperm on a regular basis. These changes can also affect sex drive and erectile function.
2. Obesity can lead to warming of the scrotum. If the scrotal temperature increases by 1 or 2 percent, it can impact sperm production or survival.

Sperm takes about 74 days to mature, which means that men who lose weight or make positive lifestyle changes only need to wait about 3 months before seeing improvements in sperm quality—and an increase in their chances of reproductive success.

FOR YOUR PATIENTS

With more effective strategies to achieve healthy weight loss, patients can improve fertility treatment outcomes and enable healthier pregnancies and delivery for mom and baby. SGF offers virtual nutrition counseling that is covered by most insurances. Patients are advised on setting realistic goals to support their fertility and a healthy pregnancy. To schedule, call 301-610-7753.



Treatment Guidelines for Female Patient BMI

	IVF	IUI
Target BMI	Less than 40	Less than 44

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MEDICAL UPDATE

ASRM 2020 Scientific Congress & Expo

SGF Research Informs How to Safely Improve Outcomes for Your Patients

Look inside for an in-depth view into some of SGF's recent research presented at the American Society for Reproductive Medicine's (ASRM) 2020 Scientific Congress and Expo. Our commitment to research and innovation leads to safer and more efficient ways of helping your patients overcome infertility.

TOP FINDINGS

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Findings inside >>>