Spring 2007

Fertility Update

A Quarterly Newsletter from the Colorado Center for Reproductive Medicine

Leaders in Fertility Care and Research

Preserving Fertility after Cancer...There is Hope

Being diagnosed with cancer changes everything. It is critical that patients be informed of their reproductive risks, educated about their choices, and empowered to make decisions.

A very real and unfortunate side effect of cancer and cancer treatment is infertility.

Various types of cancer and cancer treatments may have different effects on a woman's fertility. Keep in mind that timing may play a crucial role in preserving fertility and immediate action may be needed depending upon the severity of the diagnosis.

Fertility Options

Fortunately, there is hope for pregnancy depending on the type and extent of cancer. Below are some options for women facing cancer-related infertility.

Embryo Freezing

Currently, embryo freezing is the most widely available and most standard practice. The Colorado Center for Reproductive Medicine offers embryo freezing to patients with certain types of cancer.

This procedure involves removing mature eggs during In Vitro Fertilization (IVF), combining them with partner or donor sperm in the laboratory, freezing, and then storing them. In standard IVF, eggs are matured through the use of hormone therapy. Because of the effects of hormones on certain types of cancer, embryo freezing is not an option for all cancer patients. Whenever possible, we recommend embryo freezing prior to chemotherapy or radiation.

Once determined safe to attempt pregnancy, a CCRM physician will continue the IVF process by removing a limited number of frozen embryos from storage and implant them into the patient's uterus. Although there is no guarantee of pregnancy, we consistently achieve some of the highest pregnancy success rates from IVF in the United States.

Egg Freezing

For single women who do not wish to use donor sperm, egg freezing is a viable option. During this process, unfertilized eggs are removed, frozen and stored for use after the cancer has gone into successful remission. This procedure is still experimental and is currently being performed as part of an approved research protocol. The procedure is similar to embryo freezing and requires the use of hormone therapy. Because of the effects of hormones on certain types of cancer, egg freezing is not an option for all cancer patients.

The egg freezing process typically takes two to three weeks and is available for women after puberty.

Please see **Cancer** on Page 3

Colorado Center for Reproductive Medicine

"Making Dreams Conceivable"

Website: www.ColoCRM.com Email: CCRM@ColoCRM.com

Englewood—303-788-8300
William Schoolcraft, M.D.
Eric Surrey, M.D.
Robert Gustofson, M.D.
799 E. Hampden Ave., #300
Englewood, CO 80113

Denver—303-355-2555
Debra Minjarez, M.D.
4545 E. Ninth Ave., #420
Denver, CO 80220

Lone Tree—303-790-1363
William Schoolcraft, M.D
Eric Surrey, M.D.
10099 RidgeGate Pkwy., #200
Lone Tree, CO 80124

Louisville—303-665-0150
Robert Gustofson, M.D.
80 Health Park Dr., #240
Louisville, CO 80027

Gynecology • Reproductive Endocrinology • Infertility • MicroSurgery • Laser Surgery • IVF • Egg Donation

Dr. Schoolcraft Elected Medical Director of The AFA

Colorado infertility specialist, William B. Schoolcraft, M.D., medical director and founder of the Colorado Center for Reproductive Medicine, was unanimously elected 2007 Medical Director for The American Fertility Association, a national organization that educates the public about fertility options, reproductive health, and parenting.

"The AFA is thrilled to have Dr. Schoolcraft as part of its Board of Directors," said Pamela Madsen, Executive Director of the AFA. "His innovative scientific and medical approach to reproductive health and fertility reflect the AFA's commitment to its membership in providing the most comprehensive approach to family building."

In his new role as Medical Director, Dr. Schoolcraft will work closely with each Board member and the Executive Director to expand the association's mission

to include all aspects of reproductive health. He will act as ambassador and liaison to professional and medical groups gathering information about medical treatments, options, coping techniques, legal and insurance concerns, and other matters serving the unique needs of men and women confronted with infertility issues.

"I am looking forward to working with The AFA to support their understanding of reproductive health and fertility as a lifelong experience," said Dr. Schoolcraft. "Raising the public's awareness about new technologies and developments associated with reproductive medicine gives them options they may not have ever thought about, such as egg freezing, an increasingly important and successful option for many women."

Cor-

Clinicians

New Program for Mid-level Providers

The Colorado Center for Reproductive Medicine recognizes the vital role Nurse Practitioners (NP's), Physician Assistants (PA's), and Nurse Midwives (CNM's) play in reproductive healthcare by often being a patient's first point of contact in initiating an infertility work-up.

CCRM has developed an educational program to provide support and instruction exclusively to mid-level providers in this rapidly advancing and often confusing reproductive medicine specialty.

We are excited to offer mid-level providers an opportunity to spend a morning or afternoon with Rebecca Allen, NP learning about the basic infertility work-up and how to prepare the patient for what to expect once in our care.

Participants will learn to monitor an intrauterine insemination cycle and discover what happens during an IVF cycle. Special consideration will be given to new recommendations regarding managing polycystic ovarian syndrome and hypothyroid patients seeking conception along with information on genetic screening. Participants will also have an opportunity to observe an egg retrieval and embryo transfer with a CCRM physician, and will receive a binder of information including patient handouts.

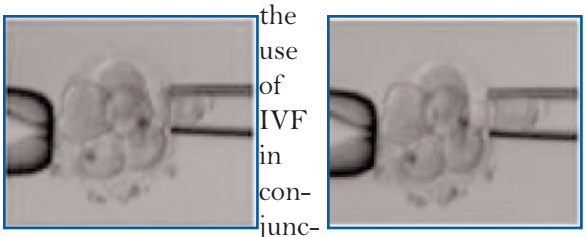
Mid-level providers have long been known to provide comprehensive and personalized healthcare and education to their patients. CCRM would like to be your infertility resource. If you are interested in the program, please contact Rebecca at 303-355-2555 or email rallen@colocrm.com.

Rebecca Allen is a Women's Health Nurse Practitioner who has worked at CCRM for over three years as both an IVF Nurse Coordinator and Nurse Practitioner.

PGS: An Exciting and Important Technology

by Dr. William Schoolcraft

Preimplantation genetic diagnosis, or PGD, now known as preimplantation genetic screening, or PGS, is an exciting technology and an important adjunct to in vitro fertilization. It can allow for the detection of disease-causing mutations and chromosomal abnormalities in embryos prior to conception. This allows the couple to prevent the conception of genetically abnormal pregnancies. Patients with single-gene disorders can use this technology to minimize their risk of having an affected child. Patients with a balanced translocation can use PGS to screen their embryos as well. Women undergoing in vitro fertilization with advanced maternal age, typically greater than 39 years, can benefit from this technique since it has been reported that up to 50% of their embryos can be chromosomally abnormal. In addition, patients with recurrent spontaneous miscarriage whose workup has revealed no other cause for their losses, can expect a marked reduction in their risk of miscarriage rate through the use of IVF in conjunction with PGS.



A single cell is removed from the embryo for analysis

Currently, the technique of PGS requires the standard steps of in vitro fertilization. Once the embryo is created , a single cell or cells (depending on the stage of development) is removed from the embryo through a procedure known as embryo biopsy (see photos). That cell/s is then analyzed for genetic abnormalities. In the case of single-gene defects, a method known as PCR is used to amplify and study the DNA for mutations known to exist in the parents. For chromosomal analysis, a method known as FISH, or fluorescence in situ hybridization, is used to assess the 10 chromosomes that are most often found to cause aneuploidy in developing embryos. Embryos affected with either a single-gene defect or chromosomal abnormalities are then identified, and only normal embryos are selected for transfer.

There are limitations to PGS. There is a small risk of misdiagnosis with the procedure, and it is important for patients to understand that they must still undergo prenatal genetic diagnosis, such as CVS or amniocentesis, to rule out the conception of an affected child. This error rate is estimated to be less than 10% in the case of aneuploidy testing and fewer than 5% when single-gene defects are assessed. At the Colorado Center for Reproductive Medicine, we performed one of the first prospective randomized trials evaluating PGS in the world, and we have performed this technique now for approximately 10 years. Our research division is actively pursuing newer applications of this technique, and we believe the future of PGS over the next two to three years is extremely promising. Technology that allows the amplification of the entire genome in combination with micro array (chip) technology may allow for the screening of all 23 pairs of chromosomes simultaneously in an embryo, thereby improving the accuracy and success of PGS.

For patients with a known chromosomal abnormality such as a translocation carriers, patients with a known single-gene disorder, patients considering IVF with advanced maternal age, and patients with a history of recurrent miscarriage, PGS represents an important option for these couples. This application may significantly increase a couple's

Cancer from Page 1

Embryo Transfer with Donor Eggs

In the event that a woman's ovarian function is diminished as a result of chemotherapy or radiation, she may have the option of embryo transfer using donor eggs. During this procedure, a known or anonymous donor contributes eggs to be combined with a partner's sperm. The fertilized embryo is then transferred into the patient's uterus in an attempt at pregnancy.

Partnering with Fertile Hope's 'Sharing Hope' Program

The Colorado Center for Reproductive Medicine is delighted to align itself with Fertile Hope's Sharing Hope Program. Through the program, qualified applicants are provided access to fertility medications, discounted services from reproductive endocrinologists, and continued support from the Lance Armstrong Foundation.

Although this is a difficult time for patients, giving them well-timed information now about their reproductive options can help preserve their future fertility.

For more information, contact Suzie Lietz, Infertility Nurse, at 303-788-8300 ext. 47.

2006 Pregnancy Success Rates

A baby is a wonderful reflection of success, and the Colorado Center for Reproductive Medicine is consistently successful at achieving high pregnancy rates.

The CCRM 2006 statistics as stated are current as of March 1, 2007 and are based on information available to CCRM at the time of printing. This data may change as additional information becomes available from patients.

The information is based on pregnancy rates per egg retrievals. This does not include information on live birth.

Final data including the 2006 live birth rates will be reported to the Society for Reproductive Technology (SART) in late 2007 for inclusion in its national report comparing all in vitro fertilization centers.

Type of Cycle	Age of Woman				
Fresh Embryos from Non-Donor Eggs	**<35**	**35-37**	**38-40**	**41-42**	**>42**
Number of transfers	259	181	157	70	27
Transfers resulting in pregnancy (+FHT**)	72.2%	58.6%	51.0%	34.3%	33.3%
Average number of embryos transfered	2.3	2.7	3.0	3.5	3.5

Frozen Embryos from Non-Donor Eggs	**All Ages Combined**
Number of transfers	177
Transfers resulting in pregnancy (+FHT**)	54.2%
Average number of embryos transfered	2.4

Donor Eggs	**All Ages Combined**	
	Fresh Embryos	**Thawed Embryos**
Number of transfers	199	80
Transfers resulting in pregnancy (+FHT**)	85.9%	47.5%
Average number of embryos transfered	2.1	2.3

** Presence of fetal cardiac activity on ultrasound exam

Colorado Center for Reproductive Medicine
799 E. Hampden Avenue, Suite 300
Englewood, CO 80113