

menopausal grandmothers who were prepared to receive an anonymous donor egg for their daughter - such an egg, of course, fertilized by the daughter's husband. There are no guidelines for these offbeat situations, thus each program must handle them on an individual basis. Calling for assistance might be appropriate, such as the utilization of sociologists, and/or an ethics committee, or other outside resources to establish guidelines and share responsibility for these decisions.

Suffice it to say, when donor eggs are used, and especially if the recipient's age is 40 or above, a preconception medical evaluation is in order. Such an evaluation would look for those conditions which might cause complications during pregnancy or those which might be aggravated by pregnancy, such as obesity, hypertension, and diabetes. Only those women who are totally medically fit should be considered as recipients.

An upper age limit for a prospective father is sometimes an issue *with or without* donor sperm. This seems to arise when a prospective father is 60 or above and marries a much younger wife. One must ask, "Does the program have a responsibility in this circumstance to consider the welfare of the child; specifically, is there any reason to be concerned about how a man of 60, 70 or 80 years of age can function responsibly, mentally and physically, with teenage children?" A program probably has no responsibility here, but the issue is thought provoking.

CONCLUSION AND A FINAL WORD

Prior to IVF it was common for physicians who treated infertility patients to tell them that everything had been tried, and it was now time to consider adoption or a childless future. Basic IVF technology changed much of that, as did the addition of donor gametes for those prepared to accept alien genetic material; the physician is now able to offer an option to essentially all couples. The era of IVF also has made it possible to go beyond

the mere solution of the problem of infertility. Preimplantation genetic diagnosis now makes it possible to eliminate disease-causing mutant genes. Thus, we are beginning to diminish the number of children born with handicaps. Such children previously were thought to represent an intrinsic risk of bearing children.

If the era of IVF has written a new chapter in the treatment of infertility, are there additional chapters to be written? To be sure! The aging oocytes represent a challenge. Can they be rejuvenated? I think it will be possible. IVF is inefficient, but changing this represents a problem. With eight fertilized two-cell zygotes in the dish, experience tells us that on average only two or three of these have the potential to progress to a term fetus. We are far from perfect in identifying which ones are the two or three. Can our selection potential be improved? I think it will be possible. Cryopreservation is very efficient for *sperm* but very inefficient for the *egg* due to its size. Can cryopreservation of the egg be achieved? I think it will be possible.

These are only examples. There are several other possibilities - some of which may be considered by some in the realm of science fiction, but all aimed at improving the human condition. Reproductive medicine and its developing technology have placed us in the midst of a reproductive revolution.

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Abstracts from the Literature

Genetic Screening for Maternal Uniparental Disomy of Chromosome 7 in Prenatal and Postnatal Growth Retardation of Unknown Cause

This very enlightening paper from Finland is worth reading by all pediatric subspecialists for its wealth of information. The authors first relate that uniparental disomy (UPD) associated with growth retardation has been found in at least 9 chromosomes (2,6,7,9,14,16,17,20 & 22) and concluded that UPD thus may provide explanations for some cases of growth retardation of unknown cause. Inheritance of *both*

parental genomes is essential for normal growth and development.

In their study, these authors focused on UPD of chromosome 7 and particularly on maternal or matUPD7. The study was prompted as matUPD7 has been reported in approximately 10% of patients with Russell Silver syndrome (RSS) and in a few patients with intrauterine growth retardation (IUGR) without RSS.

Basically 2 groups of patients were studied: (1) 39 patients with unequivocal RSS and, (2) 166 patients with unexplained growth retardation but who did not have RSS. The latter group was divided into 2 subgroups: (2a) those with IUGR and postnatal growth retardation (PNGR) and, (2b) those with only PNGR. For final analysis, the RSS patients were separated into 2 subgroups also: (1a) RSS with matUPD7, and (1b) those without mat-7-UPD.

Only 6 of the 205 patients studied had matUPD7 and all had RSS. Thirty-three of the 39 in the RSS group did not have UPD. Comparison of these two groups revealed that RSS infants (with or without matUPD7) were significantly shorter at birth than infants in group 2a and 2b. The birth weights and lengths of RSS patients with or without matUPD7 were equally small. However, birth weights did not differ between groups 1a, 1b, and 2a. Notable difference of parental age at birth was observed between group 1a and the other 3 groups. MatUPD7 patients had significantly higher ($p < .05$) maternal age (38 years) and paternal age (40 years) than those in the other 3 groups.

Midparental heights were near average for all groups. Maternal obstetrical complications known to possibly restrict fetal growth (e.g. toxemia, high blood pressure, and alcohol or tobacco use) were reported in 5 (15%) of 33 of group 1b, 24 (26%) of 91 in group 2a, and only in 5 (7%) of the 75 mothers of the PNGR (group 2b).

The authors point out that matUPD7 and growth hormone deficiency (GHD) can occur together as can

GHD and other causes of IUGR and PNGR, and emphasize that other metabolic disorders do not exclude matUPD7. MatUPD7 has been reported in 3 patients with cystic fibrosis, all of which were exceedingly short. Consequently the authors advise screening for matUPD7 if abnormally short stature occurs conjointly with cystic fibrosis or other recessive disorders mapped to chromosome 7. However, because matUPD7 is rare among IUGR and PNGR patients, except in RSS, screening will be primarily helpful in this group of RSS patients.

Hannula K, et al. *Pediatrics* 2002;109:441-448.

Editor's Comment: *The long-term natural history of matUPD7 is not yet clear. Fertility and possible transmission of UPD has not been evaluated. For these reasons, and others such as responsiveness to various therapies, screening in appropriate instances is important. All RSS patients should be screened and those RSS patients with and without matUPD7 should be further evaluated to determine the molecular biological differences between the two groups. The authors discuss some possibilities in their manuscript. The entire manuscript is very enlightening and is recommended both for theoretical considerations and factual data.*

Judith G. Hall, OC, MD

Quality of Life and Self-Esteem in Children Treated for Idiopathic Short Stature

This study from Leiden University in the Netherlands dealt with changes in health-related quality of life (HRQOL) and self-esteem in children with idiopathic short stature (ISS) participating in a study on the effects of growth hormone (GH) treatment. There were 36 pre-pubertal children who were randomly assigned to a treatment or to a control group. Children, their parents and their pediatricians completed a HRQOL and a self-esteem questionnaire, 3 times in 2 years. The data indicated that children with ISS did not have lower scores at the start as compared with the normal population, except for social functioning. The pediatricians noticed an improvement in HRQOL in the children in the treatment group. Those in the treatment group did grow significantly more than those in the control group. However, the parents and the children being treated reported no change in HRQOL. Indeed, in some instances they reported being worse than before. The child's satisfaction with height was more related to HRQOL than was measured height. The authors

concluded that the assumption that growth hormone treatment improves HRQOL or self-esteem in children with short stature could not be supported by this study.

Theunissen NCM, et al. *J Pediatr* 2002;140:507-515.

First Editor's Comments: *It is widely assumed that short stature may be a handicap and that this condition may result in psychosocial problems, such as ridicule, and mascotism. Indeed, short people might be victims of discrimination and prejudice, often referred to as "heightism". For that reason, many have opted to receive GH with the intent to accelerate growth and improve the final adult height, and in that way improve their psychosocial status. The response to GH treatment in these children appears to be modest, resulting in a possible gain in final height of 5–9 cm, after many years of treatment. However, few studies have approached the concept of HRQOL as an outcome measure of this treatment. In this study, children with a height of more*