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Family members as gamete donors and surrogates

The Ethics Committee, American Society for Reproductive Medicine, Birmingham, Alabama

1. Use of family members as donors or surrogates is generally ethically acceptable.
2. Brothers may donate sperm to brothers and sisters may donate eggs to sisters.
3. Intergenerational gamete donation and surrogacy are especially challenging.
4. Consanguineous gamete donations from first-degree relatives are unacceptable.
5. Counseling is encouraged for all parties including partners of donors and surrogates.

Collaborative or third party reproduction is sometimes considered by couples or individuals who themselves lack the healthy eggs, sperm, or uterus they need to have children. Gamete donation is a recognized method to enable infertile couples without healthy eggs or sperm to conceive. Surrogacy is considered when the uterus is absent or unhealthy, or when the female partner for health reasons cannot gestate a pregnancy. The gestational carrier may provide the egg as well as the uterus (traditional surrogacy), or she may have embryos transferred to her uterus that were created from the eggs and sperm of the infertile couple (gestational surrogacy).

Collaborative reproduction usually involves anonymous or unrelated known individuals, but some couples prefer to involve a family member in the arrangement. This may occur *intragenerationally* between siblings or cousins of similar ages, such as a sister providing eggs for a sister or a brother donating sperm to a brother. It may also occur *intergenerationally*, as when a mother gestates her daughter's embryos or a father provides sperm to his infertile son.

Some possible collaborative reproductive arrangements that involve family members are listed in Table 1. This table and the following discussion involve primarily first-degree relatives. The use of second-degree relatives such as cousins, nephews, or aunts and uncles raises similar issues, but for simplicity these arrangements are omitted from the Table and most of the subsequent discussion. *Incest* refers to sexual relations between two closely related individuals. *Consanguinity* refers to marriage and reproduction between individuals who are closely related genetically.

While familial collaboration offers many advantages over the use of non-family donors and surrogates, it may present unique problems arising from the familial closeness of the arrangement. These include issues of apparent incest or consanguinity, undue influence to participate, and confused parentage for resulting children (1–6). However, no published studies or case reports describe the outcomes of these arrangements, so there is no way to judge the seriousness of these problems.

The Ethics Committee finds that the use of gamete donors and surrogates who are family members is in many cases ethically acceptable and satisfying for the participants, but that some cases raise serious problems and should not occur. To distinguish these cases, providers of assisted reproductive technology (ART) should pay special attention to issues of consanguinity, risks of undue influence on decisions to participate, and the chance that the arrangement in question will cause uncertainty about lineage and parenting relations.

EXTENT OF FAMILIAL COLLABORATION IN REPRODUCTION

There is a paucity of data about the use of familial gamete donors and surrogates in assisted reproduction. With regard to intragenerational gamete donation, a 1992 survey of members of the Society for Assisted Reproductive Technology (SART) found that almost all

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TABLE 1

Potential intrafamilial collaborative reproductive arrangements among first degree relatives.

Arrangement	Resulting genetic and social relationships of offspring	Comments
I. Sperm donation		
Brother-to-brother	Social paternal uncle is genetic father; other relationships unchanged	Most acceptable intrafamilial sperm donation
Brother-to-sister	Rearing mother is also genetic & gestational mother; social uncle is genetic father	Gives strong impression of incest, but not strictly illegal because neither sex nor marriage is involved. **Should be prohibited** because gametes from a consanguineous relationship are combined (sister is genetic mother and brother is genetic father)
Brother-to-sister (sister uses donated eggs)	Rearing mother is gestational mother, but has no genetic relationship to offspring; social uncle is genetic father; some cousins are half-siblings; most other relationships unchanged	Gametes are not from consanguineous relationship; not prohibited, but may create impression of incest or consanguinity
Father-to-son	Social paternal grandfather is genetic father; rearing father is genetic half-brother	Acceptability may depend upon attitude of female partner; ASRM guidelines discourage donors >40 y because of concerns for new mutations
Father-to-daughter (daughter uses donated eggs)	Social maternal grandfather is genetic father	A proposal for this arrangement involving a divorced daughter who lived with her father has been discussed (6). Gives strong impression of incest.
Son-to-father	Rearing father is genetic grandfather; offspring's social half-brother is genetic father; genetic paternal grandmother is usually rearing father's ex-wife	Usually second marriage for father; significant concerns for undue pressures on son; examine relationship of son to father's new wife
II. Ovum donation		
Sister-to-sister	Social aunt is genetic mother; some cousins are half-siblings; most other relationships unchanged	Probably most common and most accepted arrangement
Sister-to-sister-in-law (brother's wife)	Social aunt is genetic mother	**Should be prohibited** because gametes from consanguineous relationship are combined. Gives strong impressions of incest. Never reported
Daughter-to-mother	Rearing mother is genetic grandmother; offspring's social half-sister is genetic mother; rearing mother's ex-husband is usually genetic maternal grandfather	Usually second marriage for mother; concerns for coercion of daughter are significant; examine relationship of daughter to stepfather
Mother-to-daughter	Social maternal grandmother is genetic mother; offspring is half-sister of rearing mother	Not reported; age of mother would make success unlikely
III. Traditional surrogacy		
Sister-for-sister	Social maternal aunt is genetic & gestational mother; social cousins are half-siblings; most other relationships unchanged	Examine relationship of surrogate to her sister's husband
Sister-for-brother	Social aunt is gestational and genetic mother	**Should be prohibited** because gametes from consanguineous relationships are combined; gives strong impression of incest; never reported
Daughter-for-mother	Rearing mother is genetic grandmother; half-sister is genetic and gestational mother	Concerns for undue pressure are significant; examine relationship of daughter to stepfather
Mother-for-daughter	Social grandmother would be genetic and gestational mother; offspring is rearing mother's half-sibling	Not reported; age of mother would make success unlikely
IV. Gestational surrogacy		
Sister-for-sister	Genetic relationships unchanged; social maternal aunt is gestational mother	One of first reported cases of gestational surrogacy
Sister-for-brother	Social aunt is gestational mother. Genetic relationships unchanged	Gives impression of incest, but gametes are not from consanguineous relationship.
Mother-for-daughter	Genetic relationships unchanged; social maternal grandmother is gestational mother	Health of older mother should be considered; should ensure daughter is not obligated to mother
Daughter-for-mother	Genetic relationships unchanged; social half-sister is gestational mother	Not reported; age of mother would make success unlikely
Daughter-for-father	Genetic relationships unchanged; social half-sister is gestational mother	Not reported; gives impression of incest

ASRM Ethics Committee. Family members as donors or surrogates. Fertil Steril 2003.

North American ART programs accepted sister-to-sister ovum donation, but only 43.3% would allow brothers to be sperm donors (7). A 1998 survey of ART clinics found that 60% of clinics would accept sperm from brothers, whereas

many more would accept sisters (90%) and friends (80%) as egg donors (8).

The number of requests for intergenerational familial gamete donation and the number of these procedures performed are also unknown. The 1992 survey of SART members found that intergenerational gamete donation was allowed in 39.3% of 52 oocyte donation programs and in 26.4% of 60 programs using sperm donation. Child-to-parent donation (37.5%) was more often permitted than parent-to-child donation (28.6%) in oocyte donation programs. The converse was true in programs using sperm donation, with 26.4% allowing parent-to-child and 18.9% allowing child-to-parent donation (7).

There are no specific data on intrafamilial surrogacy. Surrogacy arrangements in general are less common than gamete donation. They are expensive, complex, and restricted by law in some states. However, cases of intrafamilial surrogacy do occur, and sometimes receive great publicity. Sister-for-sister gestational surrogacy using donor sperm was reported in 1988 (9). Soon thereafter, the case of a South African woman carrying triplets for her daughter and son-in-law was highly publicized (10), as was the case of an American woman providing gestational surrogacy for a daughter who could not carry a pregnancy (11).

THE CASE FOR FAMILIAL COLLABORATION

The reasons for seeking a familial donor or surrogate are varied. While some individuals are willing to use an unrelated or anonymous donor or surrogate, others would much prefer finding third party reproductive assistance in the family. For some couples or individuals, gametes from family members may be preferred because they are thought to preserve the family's genetic inheritance, or reduce the risk of genetic or sexually transmitted infections. For others, a family member may be selected as a donor or surrogate to speed the process or to reduce costs.

The Committee finds that there is nothing unethical per se with many instances of familial collaboration, including both intragenerational and intergenerational arrangements. Couples faced with infertility and the need to resort to a donor or surrogate face a novel set of issues and relationships when an unrelated or an anonymous donor is used. The relationships associated with familial collaboration are also novel, but may be easier for some persons to resolve. Familial collaboration may have the advantages of maintaining genetic or kinship connections between the infertile partner and offspring, and of reducing the cost and increasing the availability of these procedures.

Familial gamete donation ensures that some portion of the infertile person's genes will be passed to the offspring, thus maintaining a kinship tie that would be lost if an unrelated donor were used. In one of the few reports about known sperm donors, family involvement was chosen so that the infertile male could feel a "genetic closeness" to his child (12). Thus using a sibling's gametes will result in rearing a genetic nephew or niece who has some, but usually less than 50%, of the infertile person's genes. Intergenerational donations, such as father-to-son sperm donation or daughter-to-mother egg donation, also involve the transfer of some of the recipient's genes to the offspring. Maintaining this kinship connection may be especially important for people who find anonymous ovum or sperm donors unacceptable.

Family members who donate may also view the process favorably. They obtain additional progeny without the demands of rearing, while contributing to the wellbeing of a kin relation.

An important factor in selecting a familial donor or surrogate is reduction of costs and waiting times. Reproductive technologies are expensive, often not covered by insurance plans, and in some areas may require long waits for certain procedures. The involvement of a family member may result in significant financial savings for the infertile couple, and enable some to have a procedure that would not otherwise be available to them. An oligospermic man may seek sperm donation from his identical twin rather than pay for IVF with intracytoplasmic sperm injection (ICSI) because he considers that his twin brother's sperm are identical to his own. A sister providing eggs is unlikely to request payment, and can avoid a long waiting period for an anonymous egg donor. Similarly, paid surrogacy is prohibitively expensive, so many couples may turn to family members for assistance.

Intrafamilial organ donation may provide a useful parallel to intrafamilial gamete donation, although substantial differences exist. Intrafamilial organ donation of kidneys, bone marrow, and even liver segments has higher success rates than organ donation from non-related living or cadaveric donors. Organ donation carries greater risk than gamete donation, but it may be lifesaving and is widely accepted. Although the treatment of infertility may seem to be a less pressing need than treating end-stage organ failure, relieving infertility is also an important need and can greatly increase personal and family welfare. Because altruism within families is especially valued, allowing family members to expose themselves to the lesser risks of gamete donation or surrogacy to treat the infertility of close family members should also be acceptable. Assessing or judging motivations such as love, devotion, loyalty, and duty within an intimate family may be best left to those family members, as long as providers involved in these arrangements have paid due regard to informed consent, free decision-making, and the welfare of the child-to-be (13).

CONCERNS ABOUT INTRAFAMILIAL COLLABORATIVE REPRODUCTION

Intrafamilial collaborative reproduction raises ethical concerns distinct from concerns raised by other donor or

surrogate arrangements. Can a donor or surrogate closely tied to and perhaps dependent on the recipient couple make a free and fully informed decision? What are the consequences of the unusual resulting relationships on the donor or surrogate, offspring, and rest of the family? What are the consequences of the creation of new genetic relationships that would be otherwise impossible?

Impermissible Collaborations

Laws against incestuous sexual relations and consanguineous marriages are ways in which society regulates reproduction. Sexual relations, marriage, and reproduction between two closely related individuals have long been taboos, because of concerns about the risk of birth defects and genetic diseases as well as concerns about social disruptions and conflict that such relations could raise. Laws banning sexual relations and marriage between certain classes of individuals would not ban gamete donation or surrogacy involving these same individuals because no sexual relations or marriage would have occurred. The Committee, however, strongly believes that fertility practices should not assist or participate in gamete donation or surrogacy in situations in which the child would have the same genetic relationship to the participants as children would of incestuous or consanguineous unions between first-degree relatives (including adopted and stepchildren).

Under this approach a sister may provide eggs for a sister or a brother sperm for a brother, but a brother may not provide sperm to a sister or a sister provide eggs to a brother. Similarly, a father should not provide the sperm to replace that of his daughter's infertile husband. Nor should a mother provide eggs for her son's infertile wife to be inseminated by his sperm. By the same reasoning, a child may donate to a remarried parent of the same sex (daughter-to-mother or son-to-father) but may not provide the gametes for the infertile partner of an opposite sex parent (son-to-mother or daughter-to-father).

A less clear case is where a sister provides the eggs for her brother's infertile wife who will be inseminated by a donor, or a brother provides sperm to a sister to use with an anonymous egg donor. Neither case duplicates the results of incest or consanguinity, so should not be barred. However, such arrangements may give the appearance of incestuous or consanguineous unions.

Similarly, persons aware that a woman is gestating the embryo of her mother and stepfather may suspect that sexual relations have occurred. In cases of daughter-to-mother ovum donation, the donor's contribution to her stepfather's child may also be perceived as incestuous. (Stepfather/stepdaughter sexual relationships are generally considered incestuous and are subject to civil penalties in most states.)

Incest is such a universal taboo that involved family members should be prepared for negative reactions from friends and other family members as well as from outsiders, even when they are completely informed about the circumstances of conception. Given these perceptions, providers should be especially careful in participating in arrangements that may give the appearance of incest. If they do participate, it is essential that they maintain the privacy and confidentiality of such an arrangement.

Although this report focuses on first-degree relatives, the Committee notes that restrictions on fathers as sperm donors to daughters with infertile husbands should also bar the daughter's paternal or maternal uncles from serving as a sperm donor to her. Similarly, the maternal or paternal aunts of a son with an infertile wife should not serve as an egg donor for the wife of that son if he would also provide the sperm. Sexual relations or marriage between first cousins is not illegal in all states. Rather than address the different combinations that might arise from gamete donation or surrogacy among first cousins, we note that a recent review found that procreation between first cousins added only a 1.7%–2.8% risk of major malformations and genetic diseases to a background risk of 3%–4% (14).

Undue Influence and Autonomous Decision-making

A major concern in familial collaborative reproduction is protecting the autonomy of the contributing donor or surrogate from manipulative or undue influences by family members who might benefit from their participation. Those risks may be greater with intergenerational than with intragenerational collaboration, but could occur with both arrangements. For example, a daughter may feel obligated to donate eggs or be a traditional surrogate to her remarried mother because she is still financially dependent on her or because her mother is especially controlling. Some individuals may exert great power over their siblings, and persuade them to be donors against their better judgment.

The risk of undue influence may depend on the physical and emotional closeness of the donor or surrogate to the recipient couple, the maturity of the participating family members, and other issues such as financial dependency. Some emotional distance may be necessary for the donor or surrogate to make a free and fully informed decision. This may be especially difficult to achieve when a parent requests a child's involvement in collaborative reproduction. Some investigators argue that because undue influence cannot be eliminated in child–parent relationships, a truly free decision to participate in such cases of collaborative reproduction is impossible (4).

It may be easier to achieve emotional distance and minimize undue influence in other circumstances. For example, a couple might request help from a cousin who lives in another city and will have very little contact with any offspring. A father might decide to donate sperm to his son as an extension of his parental role in meeting his children's needs. Similarly, a mother who volunteers to be a gestational

surrogate for her daughter may view her involvement as just another way to help her children achieve their goals in life. Each situation may be quite different, and needs to be judged individually for how free and informed the participants are.

The risk of undue influence in intrafamilial reproductive collaboration is no greater than that which arises in intrafamilial organ donation. Screening and counseling procedures developed to ensure free and fully informed consent in intrafamilial organ donation, such as separate interviews and counseling of the involved parties, are easily transferable to intrafamilial reproductive situations.

Emotional Harm to Donor or Surrogate

Donors and surrogates in these intrafamilial arrangements are exposed to emotional as well as physical risk. They may expect special recognition from family members and others for their efforts, but, instead, may be met with negative feelings from many sources. Gamete donation and surrogacy are not always looked on favorably by the general public or even by other family members. If the procedures are not successful in establishing a pregnancy, the infertile individuals may direct anger at the donor or surrogate. If the child has a genetic or birth defect, the donor or surrogate may blame herself or himself or feel blamed by others; the long-term stresses associated with a disabled child may be projected on the involved donor or surrogate.

Familial donors and surrogates may also have to undergo genetic and infectious disease screening procedures, including a 6-month quarantine of sperm (15), which they had not expected and may find objectionable. They may also contend with the reactions of their own partner to their involvement in the reproductive goals of a family member. In one survey on known sperm donors including family donors, 25% said the donation process led to a deterioration of the relationship between the infertile couple and the donor (12). This deterioration was always related to the attitude of the donor's partner, who had not been involved in the decision to donate sperm.

Donors or surrogates may have difficulty detaching themselves from the children, especially when they have a genetic link to the offspring of the arrangement. Yet if the parties have been careful in drafting and signing the necessary documents to clarify legal parenting relationships, the familial donor or surrogate will have no more legal parenting or visitation rights than would an unrelated known or anonymous donor. If conflict among family members develops, the situation could be especially painful for familial donors and surrogates who may no longer be allowed to contact or visit a genetically related child.

Impact on Offspring and Family Relationships

A primary concern is the potential impact of these arrangements on children and families. Children can never consent to the circumstances of their conception, even if they later become aware of them and suffer from conflicts or disruptions that those circumstances bring. Persons entering into these relationships should be especially sensitive to the social and psychological complications that might ensue and take special care to ensure that the child's welfare is protected.

The fear is that knowledge of the actual genetic relationships among the participants could contribute to a profoundly altered view of identity and family relationships (Table 1). Gamete donation to a sibling means that the rearing parent is actually the genetic aunt or uncle of the child, whereas the social aunt or uncle is the genetic parent. In daughter-to-mother egg donation, the offspring's gestational and rearing mother is also the genetic grandmother. The donor is the genetic mother but is regarded as the half-sister. The offspring has two maternal grandfathers, the rearing mother's father and the rearing mother's ex-husband. After father-to-son sperm donation, the offspring's rearing father is his genetic half-brother and the rearing grandfather is his genetic father. When a son or daughter's gametes are used to help a parent conceive, the offspring will usually have 25% genetic material from the parent's former spouse. Medical and mental health professionals have raised concerns about the emotional consequences that could occur (3, 4), and have emphasized the need to pay special attention to the psychological needs of children born of such relationships.

Larger societal concerns are raised by these arrangements as well, because they may create new genetic relationships never before possible. A woman could not otherwise gestate a child conceived with her daughter's egg, for whom she is the genetic grandmother. The offspring's genetic lineage becomes very confusing, further complicating the concept of the family. The importance of the goal to preserve genetic linkages may be questioned when the reproductive arrangements become so extraordinary and complex.

Although new genetic relationships may be created from these family collaborations, the impact of these few families on society would probably be minimal. Seibel et al., among others, have argued that families resulting from reproductive technologies such as gamete donation actually mirror our society's norms (16, 17). Complicated family arrangements are often the products of divorce and remarriage. Most third-party reproduction involving family members should not be alarming in today's climate. These arrangements will add complexity to only a small number of families in a society with an increasingly complex concept of the family.

SCREENING, COUNSELING, INFORMED CONSENT, AND LEGAL COUNSEL

The Committee finds that for the use of familial donors and surrogates to be ethically acceptable, special care must be taken to ensure that the interests of all parties are pro-

tected. To do so, providers should be prepared to spend more time screening and counseling participants than after requests for anonymous or unrelated known collaborative reproductive arrangements. Especially challenging are requests for intergenerational gamete donation and surrogacy.

To enhance the likelihood that familial collaboration will be a positive experience, the involvement of multiple professionals, including physicians, nurses, and counselors may be necessary for a thorough assessment. Adequate time is essential to evaluate proposals for these arrangements.

Programs should encourage prospective participants, including partners of donors and surrogates, to undergo psychological counseling by a professional experienced in surrogacy or gamete donation (15). These visits should focus attention on how participants will handle the unique aspects of the proposed arrangement and the consequences for the prospective child.

Prospective donors or surrogates should have a physician whose responsibility it is to care for them and be their advocate. To minimize conflicts of interest, a different physician should care for each of the different parties involved. Clinics not equipped to provide these services may choose to refer to a center where these services are offered. The confidentiality of all parties should be carefully protected.

The potential emotional consequences to the child should be a primary concern when discussing these arrangements. If children are informed of their intrafamilial conception or gestation, specialized counseling may be desirable as they get older, especially for arrangements that give any impression of incest or may result in disruption of family relationships.

The process of obtaining informed consent from the requesting individuals and the donor or surrogate should involve a thorough discussion of potential physical and emotional risks to all parties and to the anticipated child. Clinicians should ensure that the decision to be a gamete donor or surrogate has been voluntary and free from manipulative and undue influence. They should also offer prospective donors and surrogates the option of being excluded as participants without other family members learning of their reluctance to participate. Financial incentives, including direct and indirect payment and inheritance, should not be so substantial that they become inducements that may lead the prospective donor or surrogate to discount the risk associated with the procedure (18).

Current standards governing anonymous sperm and ovum donation and surrogacy should be followed with regard to screening of the proposed sperm or ovum donor for infectious and genetic diseases. Semen specimens should be frozen and quarantined according to published guidelines for sperm donation (15). In many cases the delay that results from this quarantine will discourage a couple from pursuing intrafamilial sperm donation. When sperm or egg donation is chosen to prevent a certain genetic disease, careful genetic counseling should be done before intrafamilial gamete donation is allowed.

An important part of the informed consent process is informing the participants of the legal parenting relations that will result from the arrangement. Documents signed, together with the law of the state or jurisdiction in which the familial collaboration occurs, concerning gamete donation and surrogacy will determine the legal parenting relations among recipients, donors, and surrogates, and resulting children. State law will also determine whether children are the heirs of the donor or surrogate or the recipient rearing parents when an intrafamilial participant dies without a will. Participants in these arrangements, including partners of donors and surrogates, should seek independent legal advice to determine their legal rights and duties in entering into these relations.

Finally, in certain cases requests should be denied immediately. Due to potential undue influence by a parent, programs should not allow minors, as defined in each state, to participate in these arrangements. Gametes from first-degree consanguineous relationships (e.g., brother-to-sister without donated eggs) should never be used together to initiate a pregnancy. Providers should participate with care in intrafamilial arrangements that give the impression of incest or improper consanguinity (see Table 1), although exceptional cases where adequate provision for those risks have been made may be acceptable.

CONCLUSIONS AND RECOMMENDATIONS

All ART programs should develop policies and procedures for dealing with requests for the use of family members as donors or surrogates. Although programs have no obligation to provide such services, the Ethics Committee finds that many intrafamilial reproductive arrangements will be ethically acceptable and satisfying, but that others should be rejected on grounds of consanguinity or because of lack of free, informed consent. The most problematic requests are usually a parent requesting the involvement of his or her child in gamete donation or surrogacy. When the assessment reveals consistent concerns about undue pressures on the prospective donor or surrogate, or about unhealthy family dynamics, the program should feel free to deny these procedures.

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