

# Discussing Fertility Preservation Options With Patients With Cancer

Karrie Ann Snyder, PhD

William Pearse, MS

**I**N JUNE 2006, THE AMERICAN SOCIETY OF CLINICAL ONCOLOGY published a series of recommendations on fertility preservation for patients with cancer, concluding that “To preserve the full range of options, fertility preservation approaches should be considered as early as possible during treatment planning.”<sup>1</sup> These guidelines reflect the greater attention that has been given in recent years to the fertility complications that can occur as a result of cancer treatment (eg, chemotherapies and radiation). Other professional and collaborative societies, including the Oncofertility Consortium, Fertile Hope, the American Academy of Pediatrics, and the American Society for Reproductive Medicine,<sup>2</sup> also have developed best-practice guidelines and educational resources to provide patients and physicians with the most recent research on fertility preservation treatments.

Investigators within the field of oncofertility have examined how patients with a cancer diagnosis learn about the potential of cancer-related infertility, including how such patients weigh fertility preservation options. In understanding this information exchange and medical decision, researchers and best-practice guidelines have looked to the patient-physician relationship, particularly those relationships between patients and oncologists, as the primary opportunity for patients to become aware of potential fertility complications related to cancer treatment. However, a distressing information gap has been identified in which oncologists often do not discuss the issue of possible infertility with patients prior to initiating potentially damaging cancer treatments. Research (including studies of men and women patients and of patients diagnosed when younger than 18 years) has consistently shown that patients diagnosed with cancer do not routinely discuss cancer-related infertility with their physicians.<sup>1</sup> This information gap severely limits the ability of patients with cancer to take proactive steps to help safeguard their future fertility potential prior to fertility-compromising cancer treatments (TABLE).

In light of these findings, researchers have begun to examine factors that may have prevented this exchange of in-

formation between patient and oncologist. Some research has suggested that oncologists may not be aware of best-practice guidelines,<sup>4</sup> including ASCO recommendations,<sup>5</sup> and that their knowledge on the topic may not be up to date.<sup>4,5</sup> The lack of interprofessional networks with reproductive endocrinologists and fertility preservation facilities may further hinder oncologists from raising the issue.<sup>6,7</sup>

Another inhibiting factor is the nature of the relationship between patient and oncologist. For example, Rieker et al<sup>8</sup> have suggested that oncologists may be more likely to discuss sperm banking with patients with whom they share a perceived similar status (eg, highly educated patients).<sup>8</sup> Physicians have reported that certain patient characteristics can influence the likelihood that they would discuss fertility preservation, including a patient’s prognosis,<sup>4,6</sup> sex,<sup>4,5</sup> parenting status,<sup>4</sup> marital status,<sup>6</sup> age/pubertal status,<sup>5</sup> ability to pay for such treatments,<sup>6</sup> and even whether a patient is homosexual or is infected with human immunodeficiency virus.<sup>4,6</sup> The inability of cancer survivors to become parents is an increasing concern within the oncofertility community, and, as the above research suggests,<sup>4,6</sup> some patient groups may have less access to fertility preservation options prior to cancer treatment. More research is needed to identify additional constituents who may be missing this information, and best-practice guidelines would benefit from highlighting potentially vulnerable groups and suggesting strategies to meet their unique fertility concerns.

Research is needed to examine the conditions under which this sensitive issue is effectively discussed in the clinical setting. Among patients who do discuss potential infertility, many feel their concerns are not adequately addressed.<sup>1</sup> The topic of fertility preservation may be understated when it is presented along with myriad other potential adverse effects. Additionally, more effective educational materials may be required to help facilitate these conversations. Researchers also should consider how other health care professionals can be integrated into these discussions,<sup>1</sup> along with an understanding of what fertility concerns may remain fol-

**Author Affiliations:** Department of Sociology, Northwestern University, Evanston, Illinois (Dr Snyder); and Rosalind Franklin University, North Chicago, Illinois (Mr Pearse).

**Corresponding Author:** Karrie Ann Snyder, PhD, Department of Sociology, Northwestern University, 1810 Chicago Ave, Evanston, IL 60208 (karrie-snyder@northwestern.edu).

**Table.** Current Fertility Preservation Options<sup>a</sup>

| Options  | Standard Options | Investigational Options <sup>b</sup> | Options Available to Prepubertal Patients |
|--|------------------|--------------------------------------|---|
| Available to female patients   |                  |                                      |   |
| Embryo banking   | ✓                |                                      |   |
| Egg banking  |                  | ✓                                    |   |
| Ovarian tissue freezing (both reimplantation and in vitro development) |                  | ✓                                    | ✓   |
| Ovarian transposition  | ✓                |                                      | ✓   |
| Ovarian suppression during treatment                                   |                  | ✓                                    |   |
| Trachelectomy during treatment   | ✓                |                                      |   |
| Radiation shielding of gonads during treatment                         | ✓                |                                      | ✓   |
| Available to male patients   |                  |                                      |   |
| Sperm banking  | ✓                |                                      |   |
| Testicular tissue freezing   |                  | ✓                                    | ✓   |
| Testicular sperm extraction  | ✓                |                                      | ✓   |
| Radiation shielding of gonads during treatment                         | ✓                |                                      | ✓   |

<sup>a</sup>Adapted from Woodruff and Snyder.<sup>3</sup> Options listed include those that occur prior to or during cancer treatment to help preserve a patient's future fertility capacity.

<sup>b</sup>Investigational options vary in terms of success rates, with some options (eg, ovarian tissue in vitro development and testicular tissue freezing) still currently under development and not yet resulting in a live human birth.

lowing treatment, ensuring that ongoing fertility discussions can continue throughout follow-up care.<sup>1</sup>

Because fertility preservation decisions are made in the context of a life-changing and potentially life-threatening diagnosis, the issue raises a host of ethical and legal issues for patients, families, physicians, and health care organizations.<sup>9</sup> For example, how should parents make fertility choices for young children who may not understand the effects of such decisions? How might a teenager pursue fertility preservation when a parent does not agree with his or her decision? Should oncologists be required to discuss options that could delay treatment with those who are gravely ill or who may not be able to pay for an elective procedure? As fertility preservation becomes more integral to the diagnostic experience, these ethical issues must be discussed proactively.

Despite progress in the development and refinement of fertility preservation techniques and the increase of educational resources, an information gap between patients and their health care teams persists, with some groups rarely obtaining information concerning cancer-related infertility. This issue is particularly vital, because research has shown that “experiencing cancer as a child or young adult often strengthens the value survivors place on being parents”<sup>10</sup> and that infertility issues can cause severe long-term distress following cancer treatment.<sup>10</sup> Moreover, the age of first-time parenthood (along with marriage) is increasing more generally. When this trend is coupled with the delay that cancer can cause in a patient's family plans, many cancer survivors will also have to contend with diminished fertility due to aging, further emphasizing how vital fertility preservation will be to many patients with cancer.

As the field of oncofertility goes forward, concerted efforts must be made to increase information sharing between patients and physicians regarding cancer-related infertility and

fertility preservation options. Strategies need to be developed that will facilitate the integration of best-practice guidelines into clinical care and the routines of cancer care centers. By integrating such practices into the clinical environment, health professionals will be able to improve the quality of life of their patients as they transition into survivorship and begin to move forward with their family plans and future goals.

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