Starting the Conversation...

FERTILITY PRESERVATION

FOR WOMEN DIAGNOSED WITH CANCER

the Oncofertility® Consortium

SaveMyFertility.org

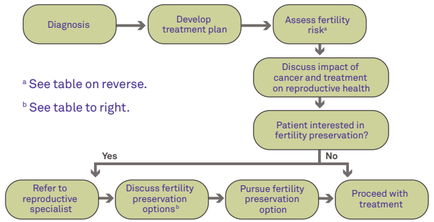
Introduction

Many women who have been diagnosed with cancer think preserving their fertility is important and want information about their options. However, patients may not feel comfortable bringing up fertility issues.

- Patients may not be aware of their options for preserving fertility.
- Patients may be focused on their cancer diagnosis and unable to think about fertility or the possibility of having a future family.
- Women may later regret not considering fertility issues prior to starting cancer treatment.
- Even women with a poor prognosis may want to consider fertility preservation.

Understanding there are fertility preservation options available and referring at-risk patients in a timely manner to specialists can improve patients' emotional outlook and future quality of life.

Fertility Preservation—Where Does It Fit?



[a] See table on reverse.

[b] See table to right.

Options for Fertility Preservation

- The following table gives a brief description of options available to women who wish to preserve their fertility.
- The American Society of Clinical Oncology and American Society for Reproductive Medicine recommend, when possible, at-risk patients be referred to a fertility preservation specialist prior to starting cancer treatment.
- Several resources are listed on the reverse that can help you and your patients locate a fertility preservation specialist.
- Remember there are other ways to build a family after cancer if we are unable to preserve your fertility now. Talking with a specialist can help you explore other options that might be right for you.

OPTION	Embryo Banking	Egg Banking	Ovarian Tissue Banking (Experimental)	Radiation Shielding	Ovarian Transposition	Radical Trachelectomy	Ovarian Suppression (Experimental)
DEFINITION	Ovarian stimulation; Harvesting eggs, IVF and freezing of embryos	Ovarian stimulation; Harvesting and freezing of unfertilized eggs	Surgical removal of ovarian tissue and processing of tissue for freezing	Use of shielding to reduce scatter radiation to the ovaries	Surgical reposition of ovaries out of radiation field	Surgical removal of the cervix with preservation of the uterus	GnRH analogs used to suppress ovaries
TIMING	Before or after treatment	Before or after treatment	Before or after treatment	During treatment	Before treatment	Before treatment	During treatment
TIME REQUIREMENT	10–15 days outpatient surgical procedure	10–15 days outpatient surgical procedure	Outpatient surgical procedure	In conjunction with radiation treatments	Outpatient procedure	Inpatient surgical procedure	In conjunction with chemotherapy
OTHER CONSIDERATIONS	Need partner or donor sperm		Autotransplantation of tissue has produced live births; studies ongoing for IVFM	Does not protect against effects of chemotherapy		Limited to early stage cervical cancer	Data are mixed on the effectiveness of this option.

Table adapted from LIVESTRONG, and *Cancer and Fertility: Fast Facts for Reproductive Professionals* (2008).
IVF=*in vitro* fertilization • GnRH=gonadotropin-releasing hormone

Starting the Conversation

Discussing fertility preservation is important. These key points can help start the conversation:

- Cancer and cancer treatment may affect your fertility.
- Based on your treatment plan, your risk of infertility is [high, moderate, low] *(see table to right).*
- Although it may not be on your mind now, it is important to discuss fertility before you begin treatment.
- You may have options for fertility preservation before you begin cancer treatment *(see table on reverse).*
- Not all women experience infertility after cancer treatment, however it is still important to explore your fertility preservation options before treatment.
- I can refer you to a fertility preservation specialist if you would like to discuss your options further.

Cancer Therapy and the Risk of Infertility

The following table classifies various cancer therapies and regimens based on their known infertility risk in women (defined as permanent amenorrhea).

While this table provides general guidelines, each patient is different and treatment may impair their fertility differently.

Infertility risk associated with specific cancer treatments and regimen

High Risk	Intermediate Risk	Low Risk	Very low/no risk	Unknown Risk
• Whole abdominal or pelvic radiation doses >6 Gy in adult women • Total body irradiation (TBI) • Cranial/brain irradiation >40 Gy • CMF, CEF, or CAF x 6 cycles in women >40 years • Total cyclophosphadmide 5 g/m2 in women >40 years • Total cyclophosphadmidey > 7.5 g/m2 <20 years • Alkylating chemotherapy (e.g., cyclophosphamide, busulfan, melaphan) conditioning for transplant • Any alkylating agent (e.g., cyclophosphamide, ifosfamide, busulfan, BCNU [carmustine], CCNU [lomustine]) + TBI or pelvic radiation • Protocols containing procarbazine: MOPP, MVPP, COPP, ChlVPP, ChlVPP/EVA, BEACOPP, MOPP/ABVD, COPP/ABVD	• Abdominal/pelvic radiation • CMF, CEF, or CAF x 6 cycles in women 30-40 year • Spinal radiation doses >25 Gy CMF, CEF, or CAF x 6 cycles in women 30–40 years • Bevacizumab (Avastin) • Protocols containing cisplatin • FOLFOX4 • Total cyclophos-phamide 5 g /m2 in women age 30- 40	• CMF, CEF, or CAF x 6 cycles in women <30 years • Nonalkylating chemotherapy: ABVD • Anthracycline + cytarabine	• Radioactive iodine • MF • Multi-agent therapies using vincristine	• Monoclonal antibodies, e.g., cetuximab (Erbitux) • Tyrosine kinase inhibitors, e.g., erlotinib (Tarceva), imatinib (Gleevec)

Table adapted from Fertile Hope, an initiative of LIVESTRONG; *Cancer and Fertility: Fast Facts for Reproductive Professionals* (2008); and Meirow D, *et al. Clin Obstet Gynecol.* 2010;53:727-739.

CMF=cyclophosphamide/methotrexate/fluorouracil • CEF=cyclophosphamide/epirubicin/fluorouracill • CAF=cyclophosphamide/adriamycin (doxorubicin)/ fluorouracill • MOPP=mechlorethamine/oncovin (vincristine)/procarbazine/prednisonel • MVPP=mechlorethamine/vinblastine/procarbazine/prednisolonel • COPP=cyclophosphamide/oncovin/procarbazine/prednisonel • ChlVPP=chlorambucil/vinblastine/procarbazine/prednisolonel • EVA=etoposide/vinblastine/\ adriamycinl • BEACOPP=bleomycin/etoposide/adriamycin/cyclophosphamide/oncovin/procarbazine/prednisonel • ABVD=adriamycin/bleomycin/vinblastine/ dacarbazinel • AC=adriamycin/cyclophosphamidel • CHOP= cyclophosphamide/hydroxydaunomycin/oncovin/prednisonel • COP= cyclophosphamide/oncovin/ prednisonel • MF=methotrexate/5-fluorouracil

Resources

For more information about infertility risk and fertility preservation options for women diagnosed with cancer:

- Visit **SaveMyFertility.org**
- Call the FERTLINE: **866-708-FERT (3378)**
- Visit the Oncofertility Consortium Web site: **oncofertility.northwestern.edu**
- Use the online Clinic/Center Finder to find the fertility preservation center closest to you: **http://oncofertility.northwestern.edu/find-a-clinic-or-center**

References

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the Oncofertility® Consortium

The Oncofertility Consortium® is an international, interdisciplinary initiative designed to explore the reproductive future of cancer survivors.

To learn more about fertility preservation, please visit **SaveMyFertility.org** for additional resources.

To learn more about the Oncofertility Consortium, visit **oncofertility.northwestern.edu.**