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Society of Family Planning Committee Statement: Contraceptive considerations for individuals with cancer and cancer survivors part 1 – Key considerations for clinical care *Joint with the Society of Gynecologic Oncology*☆,☆☆

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ABSTRACT

With increasing trends in both cancer diagnosis and survivorship, a growing number of individuals impacted by cancer need high-quality contraceptive counseling. Individuals with cancer and cancer survivors have individualized needs with respect to sexual activity, fertility desires, and contraceptive preferences. Clinicians should provide person-centered contraceptive care that supports individual autonomy in decision-making, is tailored to the individual's expressed preferences and values, and includes cancer-specific considerations. While pregnancy prevention is generally recommended during cancer treatment, pregnancy may occur before or during treatment and require person-centered counseling. No test reliably rules out pregnancy potential in cancer survivors; clinicians should offer to discuss contraception with individuals who are pregnancy-capable before cancer treatment. Clinicians should counsel individuals about common risks and complications that may impact contraceptive choice, as cancer and chemotherapy can cause (1) vascular injury, which can increase the risk of venous thromboembolism, (2) anemia, and (3) bone loss increasing the risk of fractures. Clinicians should counsel individuals with cancer that it is safe for them to use emergency contraception. Clinicians should be aware that individuals experiencing intimate partner violence and other marginalized populations, including adolescents and young adults and gender-diverse individuals, have unique needs requiring a person-centered approach to contraceptive care complicated by cancer. Access to the full spectrum of contraceptive methods should be prioritized for individuals with cancer and cancer survivors, accommodating individual preferences and health status. This document is part 1 of a three-part series that updates the Society of Family Planning's 2012 *Cancer and contraception* clinical guidance. Its companion documents, *Society of Family Planning Clinical Recommendation: Contraceptive considerations for individuals with cancer and cancer survivors part 2 – Breast, ovarian, uterine, and cervical cancer* and *Society of Family Planning Clinical Recommendation: Contraceptive considerations for individuals with cancer and cancer survivors part 3 – Skin, blood, gastrointestinal, liver, lung, central nervous system, and other cancers*, build upon this document and focus on actionable, clinical recommendations.

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1. Background

There are over 18 million cancer survivors in the US, representing more than 5% of the population [1]. In recent years, cancer death rates decreased; between 2015 and 2019, women's cancer deaths decreased on average by 1.9% [2]. However, among those aged 15–39, there has been an increase in cancer incidence [2]. With increasing trends in both cancer diagnosis and survivorship, a growing number of individuals impacted by cancer need high-quality contraceptive counseling. Close to half of pregnancies among cancer survivors remain unintended [3]. The current cancer treatment landscape has evolved significantly: novel therapies pose potential teratogenic risks, and maintenance treatment durations can continue for years. An unintended or undesired pregnancy while awaiting or during cancer treatment may delay necessary medical care. In recent years, access to abortion services have been further limited in many states, with direct impacts on morbidity and mortality of the pregnant individual, particularly for marginalized communities and those with chronic medical conditions such as cancer [4]. Access to the full range of contraceptive methods is an essential component of reproductive health equity and well-being for all individuals, including those affected by cancer.

Individuals with cancer and cancer survivors have individualized needs with respect to sexual activity, fertility desires, and contraceptive preferences. Additionally, contraception, in particular hormonal contraception and intrauterine devices (IUDs), can impact the effectiveness of some cancer treatments or increase the risk of reoccurrence of some cancer types. Occasionally, cancer treatment can impact the effectiveness of contraception. These special considerations even further emphasize the importance of shared decision-making when discussing pregnancy desires and fertility preservation, as goals of cancer care may conflict with an individual's reproductive desires. Although there are many noncontraceptive benefits of birth control methods, this guidance focuses on pregnancy prevention for individuals of all ages, including adolescents. Pregnancy-capable individuals with cancer frequently report that the cancer diagnosis and treatments affect their reproductive desires, and 21% of reproductive-age cancer survivors report recent intercourse without a method of contraception, a rate three times greater than the general population [5,6]. Almost half of contraceptive-using cancer survivors rely on withdrawal or barrier methods [7]. It is important to highlight that estrogen blockade therapies do not function as contraception. As cancer has significant impacts on pregnancy experiences, safe and effective contraceptive methods should be offered to those who wish to avoid pregnancy.

This guidance series updates the Society of Family Planning's 2012 *Cancer and contraception* clinical guidance [8]. It is informed by a review of the relevant literature and intended to provide evidence-informed, person-centered, and equity-driven recommendations to facilitate the management of and access to contraceptive care for individuals diagnosed with, being actively treated for, or previously been treated for cancer. This document, part 1, addresses key clinical considerations that broadly apply to contraceptive care for individuals with cancer and cancer survivors. It also addresses common risks and complications, such as venous thromboembolism (VTE), anemia, and bone loss, that impact contraceptive care. Its companion documents, *Society of Family Planning Clinical Recommendation: Contraceptive considerations for individuals with cancer and cancer survivors part 2 – Breast, ovarian, uterine, and cervical cancer* and *Society of Family Planning Clinical Recommendation: Contraceptive considerations for individuals with cancer and cancer survivors part 3 – Skin, blood, gastrointestinal, liver, lung, central nervous system, and other cancers*, build upon this document and focus on actionable, clinical recommendations for cancers affecting specific organs [9,10]. When literature regarding the safety and efficacy of specific contraceptive methods in individuals with a history of a particular cancer type was not available, literature from the general population was used to inform recommendations. Well-designed studies assessing contraceptive risks in those actively undergoing cancer treatment are not available for most cancer types. Thus, statements made in these recommendations for those with a history of a specific cancer also apply to those who are actively being treated for that cancer unless indicated otherwise. However, active cancer is often associated with higher risks of thrombosis, which needs to be taken into consideration during shared decision-making for contraceptive methods that increase thrombotic risks. Whether a cancer is active or in remission is typically determined by the oncology team.

This guidance series uses shared decision-making to refer to a collaborative process in which individuals receiving care and clinicians work together to make health care decisions informed by evidence, the care team's knowledge and experience, and the individual's values, goals, preferences, and circumstances. These principles are fundamental to contraceptive care, and all recommendations in this guidance series should be interpreted in this context. Although barrier methods, spermicides, contraceptive vaginal gel, and vasectomy are safe, effective, and noninvasive for the pregnancy-capable individual, they are not the focus of this document. This guidance will focus on US Federal Drug Administration-approved forms of long-acting reversible contraception, all hormonal contraceptives, and tubal contraceptive surgeries.

2. Committee statements

2.1. For individuals with cancer and cancer survivors, clinicians should provide person-centered contraceptive care that supports individual autonomy in decision-making, is tailored to the individual's expressed preferences and values, and includes cancer-specific considerations.

The individual's preference for and acceptability of a particular contraceptive method may depend on considerations such as the specific cancer type(s), cancer hormone receptor status, thrombogenic risk, side effects of the treatment, efficacy, and whether a contraceptive method impacts cancer prognosis, treatment effectiveness, or recurrence risk. Most clinical scenarios call for shared decision-making between the individual and their clinicians, which may include primary care, gynecology, and oncology care providers. It is crucial to ensure that contraceptive counseling is conducted in a noncoercive manner, respecting individual autonomy and allowing for informed decision-making about one's reproductive health.

2.2. While pregnancy prevention is generally recommended during cancer treatment, pregnancy may occur before or during treatment and require person-centered counseling.

Approximately 1 in 1000–2000 pregnancies are affected by a new cancer diagnosis, most commonly breast, ovary, thyroid, melanoma, hematologic, and cervical cancer [11–13]. Some studies suggest an increased risk of adverse pregnancy or fetal outcomes, such as early pregnancy loss and stillbirth, when conception occurs during or shortly after the completion of cancer treatment [14]. Cancer treatments may be delayed, withheld, or modified during pregnancy secondary to known or suspected adverse pregnancy effects [15]. Even those who are remote from cancer treatment may experience increased pregnancy-related morbidity, including preterm delivery, severe maternal morbidity, and maternal cardiac morbidity [15]. Malignancy and pregnancy are independent risk factors for thrombosis, and active malignancy during pregnancy increases the risk of a thrombotic event six-fold compared to pregnancy without malignancy [16]. Thus, clinicians should discuss the risks and benefits of all pregnancy options, including abortion, when pregnancy occurs before or during cancer treatment.

2.3. No test reliably rules out pregnancy potential in cancer survivors. Therefore, clinicians should offer to discuss contraception with individuals who were pregnancy-capable before cancer treatment.

The impacts of cancer diagnosis and treatment on fertility vary based on radiation exposure and type of chemotherapy treatment. The chance of pregnancy can be difficult to predict as the usual signs of fertility, assessed through lab testing and bleeding patterns, may not be reliable indicators for intermittent ovulatory activity [17]. Markers of ovarian reserve include menstrual regularity, follicle-stimulating hormone (FSH), anti-Mullerian hormone (AMH), estradiol, and antral follicle count (AFC). Premature ovarian insufficiency (POI) is defined as age less than 40 years, amenorrhea for four or more months, and two serum FSH levels in the defined menopausal range [18]. However, POI represents a continuum of ovarian function; ovarian function can recover, and spontaneous pregnancy has occurred after diagnosis of POI [19,20]. Identifying which individuals can become pregnant after cancer treatment, including those experiencing reduced fertility, remains an area of active research.

2.4. Clinicians should counsel individuals being treated with cancer about common risks and complications that may impact contraceptive choice, as cancer and chemotherapy can cause (1) vascular injury, which can increase the risk of venous thromboembolism (VTE) [21,22], (2) anemia, and (3) bone loss increasing the risk of fractures [23].

2.4.1. Venous thromboembolism (VTE)

Combined hormonal contraceptives (CHCs) with estrogen have long been associated with an increased risk of VTE. There is limited evidence that depot medroxyprogesterone acetate (DMPA) also increases the risk of VTE by more than twofold [24–27]. As such, when there is pre-existing concern about VTE risk, such as those with history of VTE, BMI of 30 kg/m^2 or higher, or immobility, individuals may prefer to avoid contraceptive methods containing estrogen or DMPA [25,28]. However, the absolute risk of VTE while using any form of contraception is still lower than the four to five-fold increased VTE risk for pregnant individuals compared to nonpregnant individuals [29]. Pregnancies following cancer have an even greater risk of VTE at 42 days postpartum (1.11% vs 0.11% of those without a history of cancer) and at 1 year postpartum (2.19% vs 0.14%) [30].

2.4.2. Anemia

Menstrual suppression is advantageous for individuals with anemia as it can reduce the amount of blood lost during menstruation and thus prevent further iron depletion [31]. The levonorgestrel (LNG) 52 mg IUD significantly reduces menstrual blood loss [32]. Among most individuals with heavy menstrual bleeding, it is estimated that the LNG 52 mg IUD reduces blood loss by more than 90% over 6 months compared with baseline. Injectable DMPA can also induce amenorrhea over time by rates of up to 71% after 2 years of use [33]. Although some suggest administering DMPA injections more frequently than every 11–13 weeks to increase amenorrhea, there is limited evidence for this practice. Continuous use of CHCs can also reduce menstrual bleeding and may be considered.

2.4.3. Osteoporosis

When there is concern about bone strength, injectable DMPA is typically avoided because it has been associated with decreases in bone density [34]. Hormonal IUDs, which result in low systemic exogenous hormone levels, do not adversely impact bone density or increase fracture risk [35,36]. Whether other progestin-only contraceptives that produce amenorrhea meaningfully impact bone density is an area of ongoing study [37]. However, existing studies have found that contraceptive implants have minimal adverse effects on bone density [38,39]. When low bone mass is a concern and the risk of VTE is low, estrogen-containing contraceptives may also be appropriate.

2.5. Clinicians should counsel individuals with cancer that it is safe for them to use emergency contraception (EC).

There are no studies that assess the safety of EC pill use in individuals with cancer or a history of cancer due to little concern that such short-term exposure could be problematic. Episodic use of oral EC is generally considered less consequential than sustained use of systemic hormonal contraception in the presence of complicating medical conditions. The *Society of Family Planning Clinical Recommendation: Emergency contraception* provides a detailed discussion of medical considerations related to oral and intrauterine emergency contraceptive use [40]. Advanced prescriptions of ulipristal acetate EC pills should be offered to individuals receiving chemotherapy who are relying on barrier contraception or a method that requires regular adherence, as ulipristal is typically more effective than over-the-counter EC pills. IUDs, the most effective form of EC, should be offered alongside other EC options, when placement is not contraindicated [25].

2.6. Clinicians should be aware that individuals experiencing intimate partner violence (IPV) and other marginalized populations, including adolescents and young adults (AYAs) and gender-diverse individuals, have unique needs requiring a person-centered approach to contraceptive care complicated by cancer.

2.6.1. Intimate partner violence (IPV)

Although individuals of all ages may experience IPV, it is most prevalent among individuals of reproductive age and contributes to additional health concerns and complications, including undesired pregnancy [41]. An individual's risk of IPV might escalate following a cancer diagnosis, influenced by factors such as social isolation, compromised health, and heightened dependence on others for assistance [42]. Psychological and emotional consequences include a feeling of loss of control and entrapment [43]. Healthcare professionals frequently serve as the initial point of contact for providing care to individuals experiencing IPV. Thus, clinicians should screen for IPV using trauma-informed approaches, offering resources and support for those who report IPV [44]. Sensitivity to potential power

dynamics and safety concerns is paramount when addressing contraception in situations involving coercion or IPV.

2.6.2. Adolescents and young adults (AYAs)

Adolescents and young adults (AYAs) with cancer are particularly vulnerable to unmet sexual and reproductive health needs, including access to contraception. A recent descriptive report on the reproductive needs of childhood and adolescent cancer survivors from a comprehensive survivorship clinic in Australia reported 50% of the female individuals and 12% of the male individuals sought contraceptive advice [45]. In addition, while rates of undesired pregnancy are not well known among cancer survivors, studies show that young individuals with cancer are more likely to undergo an abortion compared to sibling controls and more likely to use EC compared with the general population [46,47]. Social and behavioral aspects play a significant role in the selection of contraceptive methods for adolescents. AYAs may have a lower tolerance for contraceptive side effects, leading to higher rates of discontinuation or inconsistent use [47,48]. The choice of contraceptive method may also be influenced by factors such as the desire to keep sexual activity private. When caring for AYAs with cancer, clinicians should make explicit plans to protect privacy, informing AYAs about their contraceptive choices and involving them in the decision-making process. Respect for autonomy and confidentiality is crucial to fostering trust and empowering AYAs to actively participate in managing their reproductive health while navigating the challenges of cancer care.

2.6.3. Gender-diverse individuals

Understanding the unique reproductive health needs and preferences of gender-diverse individuals allows clinicians to provide tailored and inclusive contraceptive care that aligns with their identity and health goals. Significant deficiencies exist in formal and hands-on training for clinicians related to LGBTQ+ health. Previous survey studies indicate that oncologists and other health care providers at National Cancer Institute (NCI)-Designated Comprehensive Cancer Centers possess limited knowledge about LGBTQ+ health needs, and many have a lack of understanding regarding the significance of inquiring about an individual's sexual orientation and gender identity [48–50]. For example, it is important for clinicians to understand that gender-affirming hormone therapy is not effective contraception and that regardless of gender identity, individuals may be at risk for undesired pregnancy [51,52]. Thus, clinicians should routinely discuss fertility preservation and contraceptive options with transgender individuals before starting cancer therapy.

Further research is needed to understand best practices for supporting marginalized populations impacted by cancer when providing contraceptive care, including people with disabilities [53].

2.7. Access to the full spectrum of contraceptive methods should be prioritized for individuals with cancer and cancer survivors, accommodating individual preferences and health status.

Implementing effective strategies to increase prompt access to contraceptive care requires a comprehensive approach. Factors such as fostering a supportive and nonjudgmental health care environment, clinician training, institutional guidelines to standardize contraception screening and referral, collaborative care, prescribing and dispensing practices, consumer education, and advocating for insurance coverage and financial support can increase access to contraceptive care for individuals with cancer and cancer survivors [54]. Cancer centers should ensure their institutional guidelines address potential contraception screening and referral obstacles. This includes defining roles and responsibilities for contraceptive discussions within the care team and enhancing education for oncology clinicians on contraception [55]. Collaborative efforts between oncologists and reproductive health specialists are essential to ensure integrated and person-centered care. For individuals interested in using prescription contraception, prescribing and dispensing a one-year supply should be considered to decrease gaps in use. Additionally, there is a need for education and awareness programs about fertility preservation and contraceptive options [56]. Policymakers should ensure these services are affordable and accessible.

3. Continued discussion

During the development of this document, we identified multiple areas warranting further exploration:

- Defining pregnancy potential and future fertility after cancer treatment.
- Understanding the impact of hormonal contraception on bone density after cancer treatment.
- Ways to minimize thrombotic risks after cancer treatment.
- Identifying and removing barriers to contraceptive access, with attention to those experiencing IPV, and marginalized populations, including AYAs, gender-diverse individuals, and persons with disabilities.

4. Summary of statements

- For individuals with cancer and cancer survivors, clinicians should provide person-centered contraceptive care that supports individual autonomy in decision-making, is tailored to the individual's expressed preferences and values, and includes cancer-specific considerations.
- While pregnancy prevention is generally recommended during cancer treatment, pregnancy may occur before or during treatment and require person-centered counseling.
- No test reliably rules out pregnancy potential in cancer survivors. Therefore, clinicians should offer to discuss contraception with individuals who were pregnancy-capable before cancer treatment.
- Clinicians should counsel individuals about common risks and complications that may impact contraceptive choice, as cancer and chemotherapy can cause (1) vascular injury, which can increase the risk of venous thromboembolism, (2) anemia, and (3) bone loss increasing the risk of fractures.
- Clinicians should counsel individuals with cancer that it is safe for them to use emergency contraception.
- Clinicians should be aware that individuals experiencing intimate partner violence and other marginalized populations, including adolescents and young adults and gender-diverse individuals, have unique needs requiring a person-centered approach to contraceptive care complicated by cancer.
- Access to the full spectrum of contraceptive methods should be prioritized for individuals with cancer and cancer survivors, accommodating individual preferences and health status.

5. Sources

A series of clinical questions were developed by the authors and representatives from the Society of Family Planning's Clinical Affairs Committee. With the assistance of medical librarians, we searched the databases of Medline, Embase, Cochrane reviews and registered clinical trials to identify any relevant articles related to cancer and contraception, published between January 1, 2012 and June 29, 2023. The initial search yielded over 16,000 results, which were further limited to those relevant to hormonal contraception. We reviewed 5484 references for relevance and to use in drafting the recommendations. The search was restricted to articles published in English. We also identified

studies by reviewing the references of relevant articles and clinical guidelines published by organizations or institutions with related recommendations, such as the Centers for Disease Control and Prevention, the American College of Obstetricians and Gynecologists, and the Society of Family Planning. The content of and references cited in relevant product labels and Food and Drug Administration prescribing information were also considered when developing clinical statements on topics involving medication. When relevant evidence was not available or too limited to inform practice, the expert opinion of clinicians with complex family planning expertise was used to develop the critical statements.

6. Intended audience

This Clinical Recommendation is intended for Society of Family Planning members, family planning and reproductive health service clinicians, oncologists and clinicians who care for cancer survivors, family planning and reproductive health researchers, consumers of family planning care, and policymakers.

Authorship

This Committee Statement was prepared by Pelin Batur, MDD; Ashley Brant, DO, MPH; Carolyn McCourt, MD; and Eleanor Bimla Schwarz, MD, MS, with the assistance of Anitra Beasley, MD, MPH; Jessica Atrio, MD, MSc; Danielle Gershon, MD; and Neil A. Nero, MLIS, AHIP. It was reviewed and approved by Clinical Affairs Committee members on behalf of the Board of Directors of the Society of Family Planning, the Society of Gynecologic Oncology's (SGO's) Publication Committee, and SGO's Board of Directors.

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Society of Family Planning Clinical Recommendation: Contraceptive considerations for individuals with cancer and cancer survivors part 2 – Breast, ovarian, uterine, and cervical cancer: *Joint with the Society of Gynecologic Oncology*☆,☆☆

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ABSTRACT

This Clinical Recommendation provides evidence-informed, person-centered, and equity-driven recommendations to facilitate the management of and access to contraceptive care for individuals who are diagnosed with, being actively treated for, or who have previously been treated for breast, ovarian, uterine, or cervical cancer. For individuals with a history of breast cancer, we recommend nonhormonal contraceptives as the first-line option (GRADE 1B); additional guidance is provided for hormonal contraception depending on breast cancer hormone receptor status. For individuals with a history of or active ovarian cancer, we recommend clinicians provide access to all available contraceptive methods utilizing a person-centered approach (GRADE 1B); in individuals diagnosed with hormonally-sensitive ovarian malignancies, such as adult granulosa cell tumors, low-grade serous, and endometrioid adenocarcinomas, who are considering hormonal contraception, we suggest shared decision-making with the individual and their oncologist (GRADE 2C). Estrogen-containing contraceptives should be avoided by individuals treated with estrogen-blocking therapy (Best Practice). For individuals with a history of endometrial cancer, we recommend clinicians provide access to all available contraceptive methods utilizing a person-centered approach (GRADE 1B); in individuals with active endometrial cancer requesting an intrauterine device (IUD), we suggest shared decision-making with the individual and their oncologist (GRADE 1B). Recommendations for individuals with gestational trophoblastic disease are provided based on factors such as evidence of persistent intrauterine disease, human chorionic gonadotropin (hCG) levels, and the individual's preferred contraceptive method. For individuals with cervical dysplasia or a history of cervical cancer, we suggest clinicians provide access to all available contraceptive methods (GRADE 2B); we suggest against IUD placement in individuals with active cervical malignancy (GRADE 2C). This document is part 2 of a three-part series that updates the Society of Family Planning's 2012 *Cancer and contraception* clinical guidance. It builds upon the considerations outlined in the *Society of Family Planning Committee Statement: Contraceptive considerations for individuals with cancer and cancer survivors part 1 – Key considerations for clinical care* and parallels recommendations outlined in the *Society of Family Planning Clinical Recommendation: Contraceptive considerations for individuals with cancer and cancer survivors part 3 – Skin, blood, gastrointestinal, liver, lung, central nervous system, and other cancers*. Readers are encouraged to review parts 1 and 3 for this additional context.

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1. Background

This Clinical Recommendation provides evidence-informed, person-centered, and equity-driven recommendations to facilitate the management of and access to contraceptive care for individuals who are diagnosed with, being actively treated for, or who have previously been treated for breast, ovarian, uterine, or cervical cancer. It builds upon the considerations outlined in the *Society of Family Planning Committee Statement: Contraceptive considerations for individuals with cancer and cancer survivors part 1 – Key considerations for clinical care* and parallels recommendations outlined in the *Society of Family Planning Clinical Recommendation: Contraceptive considerations for individuals with cancer and cancer survivors part 3 – Skin, blood, gastrointestinal, liver, lung, central nervous system, and other cancers* [1,2]. Readers are encouraged to review parts 1 and 3 for this additional context.

When literature regarding the safety and efficacy of specific contraceptive methods in individuals with a history of a particular type of cancer was not available, literature from the general population was used to inform recommendations. No well-designed studies assessing contraceptive risks in those actively undergoing cancer treatment are available. Thus, recommendations for those with a history of a specific cancer type also apply to those who are actively being treated for that cancer. However, active cancer is often associated with higher risks of thrombosis, which needs to be taken into consideration during shared decision-making if contraceptives that increase thrombotic risks are considered while the individual is receiving treatment.

This guidance series uses shared decision-making to refer to a collaborative process in which individuals receiving care and clinicians work together to make health care decisions informed by evidence, the care team's knowledge and experience, and the individual's values, goals, preferences, and circumstances. It uses person-centered care to refer to care that is respectful of and responsive to the individual's preferences, needs, and values, ensuring that these elements guide all clinical decisions. These principles are fundamental to contraceptive care and all recommendations in this guidance series should be interpreted in this context. This guidance discusses providing contraceptive methods to an individual with a US Centers for Disease Control and Prevention (CDC) medical eligibility criteria (MEC) condition or characteristic with an unacceptable risk (category 4). Typically, this should only occur in rare circumstances and when no safer alternative or acceptable method exists. Ultimately, the acceptability of risk should be determined by the individual. Clinicians can support an individual's understanding of risk through shared decision-making.

2. Clinical questions

2.1. Breast cancer

2.1.1. How does the use of hormonal contraception impact the effectiveness of breast cancer treatment or the risk of breast cancer recurrence?

For individuals with a history of breast cancer, we recommend nonhormonal contraceptives as the first-line option (GRADE 1B) (Table 1). For individuals with hormone receptor-positive breast cancer, we recommend avoiding or minimizing hormone exposure (GRADE 1C). For individuals with hormone receptor-negative breast cancer who prefer hormonal contraception, we recommend shared decision-making with the individual and their oncologist (GRADE 1C).

The evidence on the impact of exogenous hormone use on the risk of new-onset or recurrence of breast cancer is complex. Recent evidence suggests that currently available hormonal contraception, including progestin-only methods such as the levonorgestrel (LNG) 52 mg intrauterine device (IUD), may be associated with a small absolute increase in breast cancer diagnosis, roughly one additional cancer diagnosis per 7690 users per year [3–7]. There is insufficient evidence on the relative breast safety of the lower-dose LNG IUDs. No prospective studies assess the safety of hormonal contraception in breast cancer survivors. However, a retrospective study including all hormonal contraception methods shows no differences in all-cause mortality or breast cancer recurrence among users [8]. In contrast, two randomized trials of hormone therapy use in menopausal breast cancer survivors show conflicting results, with one demonstrating no increased risk and the other some increased risk; multiple observational studies suggest neutral or decreased breast cancer recurrence risk with menopausal hormone use [9]. A systematic review and meta-analysis suggests that pregnancy after breast cancer is unlikely to increase mortality and may be associated with an increased likelihood of disease-free and overall survival. Nonetheless, pregnancy prevention is typically recommended for at least 10 months and ideally for 2 years after diagnosis [10,11]. After hormone receptor-positive breast cancer diagnosis, a nonhormonal contraceptive

Table 1
Key for GRADE recommendations[a]

Symbol	Meaning
1	Strong recommendation
2	Weaker recommendation
A	High quality evidence
B	Moderate quality evidence
C	Low quality evidence, clinical experience, or expert consensus
Best Practice	A recommendation in which either (1) there is an enormous amount of indirect evidence that clearly justifies a strong recommendation; direct evidence would be challenging and an inefficient use of time and resources to bring together and carefully summarize, or (2) a recommendation to the contrary would be unethical

[a] Society of Family Planning Clinical Recommendations use a modified GRADE system. The GRADE system is described in several publications, with a comprehensive set of articles in the Journal of Clinical Epidemiology (J Clin Epidemiology, (2011) 64:383–394, 64:395–400, 64:401–406, 64:407–415, 64:1277–1282, 64:1283–1293, 64:1294–1302, 64:1303–1312, 64:1311–1316, (2013) 66:140–150, 66: 151–157, 66:158–172, 66:173–183, 66:719–725, 66:726–735).

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method is often recommended, especially when treatment includes prolonged estrogen deprivation. Of the nonhormonal methods, the copper IUD is the most effective option for preventing pregnancy. For hormone receptor-negative breast cancers, methods that minimize hormone exposure are often recommended by oncologists, although there is no evidence to suggest increased risks of adverse outcomes with hormonal contraception. It is unclear if the use of the LNG 52 mg IUD impacts long-term breast cancer recurrence. The LNG 52 mg IUD significantly reduces the risk of endometrial polyps. For individuals taking tamoxifen, which increases the risk of endometrial polyps, this can be an important benefit to consider in selecting a contraceptive method [12]. However, there is no evidence that the LNG 52 mg IUD would decrease endometrial cancer risks in premenopausal tamoxifen users.

2.1.2. Does the use of hormonal contraception increase the risk of new-onset breast cancer for those at increased risk for familial or hereditary breast and ovarian cancer?

For individuals at significantly increased risk for familial or hereditary breast and ovarian cancer (HBOC), we recommend clinicians provide access to all available contraceptive methods utilizing a person-centered approach (GRADE 1B).

Validated models and genetic testing now allow widespread identification of those at significantly increased risk for familial or hereditary breast and ovarian cancer (HBOC). Individuals at high risk for breast cancer without a personal history can be safely offered hormonal contraception regardless of genetic risk [5,13,14]. Combined hormonal contraceptives (CHC) have been associated with significant reductions in both ovarian and endometrial cancer in those who carry a pathogenic variant in *BRCA1* or *BRCA2*, and longer duration of use is associated with greater protection [5]. Less data for ovarian cancer prevention is available for newer, lower dose or progestin-only formulations. Meta-analyses and systematic reviews have shown either minimal or no increase in breast cancer risk in individuals with genetic risk for breast or ovarian cancer using formulations of 35 μg ethinyl estradiol or less [5,15]. Shared decision-making is key when working with individuals at high risk for breast cancer. The CDC MEC places no restrictions on hormonal contraceptive use by those who are high-risk, without current or recent personal history of breast cancer [13]. In those who carry genetic variants increasing both breast and ovarian cancer risk, the balance of the small potential for increased breast cancer risk and considerably decreased ovarian cancer risk should be discussed.

2.2. Ovarian cancer

2.2.1. Does the use of hormonal or permanent contraception impact outcomes in those who have completed ovarian cancer treatment or are at very high risk of ovarian cancer?

For individuals with a history of or active ovarian cancer, we recommend clinicians provide access to all available contraceptive methods utilizing a person-centered approach (GRADE 1B). For individuals at high risk for ovarian cancer, we recommend clinicians offer hormonal contraception with the goal of ovarian suppression for ovarian cancer prevention (GRADE 1B). For individuals diagnosed with hormonally-sensitive ovarian malignancies, such as adult granulosa cell tumors, low-grade serous, and endometrioid adenocarcinomas, who are considering hormonal contraception, we suggest shared decision-making with the individual and their oncologist (GRADE 2C). Estrogen-containing contraceptives should be avoided by individuals treated with estrogen-blocking therapy (Best Practice).

Data from both the general population and individuals who carry germline pathogenic *BRCA1* and *BRAC2* genes can help inform contraceptive decisions among individuals with a history of ovarian cancer, as data specific to individuals with a personal history of ovarian cancer are not available.

2.2.1.1. Combined hormonal contraceptives (CHCs). Estrogen and progestin-containing CHCs have consistently been shown to halve the risk of ovarian cancer diagnosis, both in the general population as well as in those who carry germline pathogenic variants in *BRCA1* and *BRCA2* genes [5,14,16]. Increased duration of hormonal contraception use leads to more protective benefits, regardless of the formulation [17].

2.2.1.2. Depot medroxyprogesterone acetate (DMPA). Studies of non-oral hormonal contraception formulations' effect on ovarian cancer are more limited. A systematic review of DMPA injection users showed a reduction in ovarian cancer diagnosis (OR, 0.65; 95% CI, 0.50–0.85) [18].

2.2.1.3. Progestin-only pills. Low-dose progestin-only pills, which less reliably suppress ovulation, have not consistently been shown to lower the risk of ovarian cancer [17]. Given that different progestin-only methods have variable effects on ovulation suppression, more studies are needed to understand the relationship between ovulation and ovarian cancer prevention.

2.2.1.4. Intrauterine devices (IUDs). Hormonal IUDs may have a role in ovarian cancer prevention; a large prospective cohort study reported a 50% risk reduction in ovarian cancer with use of a hormonal IUD, a level of risk reduction similar to the use of oral contraceptives, though meta-analyses have mixed findings [19–21].

2.2.1.5. Permanent contraception. Laparoscopic sterilization using tubal occlusion techniques such as electrosurgical desiccation, a silicone band, or a titanium clip and partial or complete salpingectomy (removal of bilateral fallopian tubes) have been associated with lower rates of ovarian cancer [22,23]. Complete salpingectomy has the potential for greater ovarian cancer risk reduction and should be considered when laparoscopic sterilization is planned, and ovarian cancer risk reduction is desired [24].

Given the neutral or protective benefits of hormonal contraception, most individuals with a history of epithelial or borderline ovarian cancer, with retained ovaries, can safely use any hormonal contraceptive [13,25]. Less common ovarian cancer subtypes may be estrogen sensitive, such as adult granulosa cell tumors, low-grade serous, or endometrioid adenocarcinomas [26]. Prior use of oral contraception in those diagnosed with granulosa cell tumors has been associated with improved survival rates [27]. Clinicians should engage in shared decision-making with the individual and their oncology team when those with hormonally-sensitive ovarian cancer subtypes are considering hormonal contraception. Active ovarian cancer increases the risk of thrombosis, which should also be considered.

2.3. Uterine cancer

2.3.1. Does the use of hormonal contraception or intrauterine devices impact the effectiveness of uterine cancer treatment or increase the risk of uterine cancer recurrence or morbidity?

2.3.1.1. Endometrial cancer. **For individuals with a history of endometrial cancer, we recommend clinicians provide access to all available contraceptive methods utilizing a person-centered approach (GRADE 1B). For individuals with active endometrial cancer requesting an IUD, we suggest shared decision-making with the individual and their oncologist (GRADE 1B).**

When uterine preservation is planned in the setting of endometrial carcinoma, hormonal therapies may offer effective contraception. The

2024 CDC MEC categorizes active endometrial cancer as an unacceptable risk (category 4) for copper and LNG IUD initiation due to concerns about increased risk for infection, perforation, or bleeding during placement [13]. However, evidence supports the initiation of LNG 52 mg IUD in early-stage endometrial cancer when fertility or uterine preservation is desired due to its documented beneficial effect on the endometrium [28,29]. Oncologists and reproductive health clinicians should address how hormonal therapies may serve as both cancer treatment and contraception. Among individuals with Lynch syndrome, both CHCs and progestin-only contraceptives have demonstrated protective effects on the endometrium [30].

2.3.1.2. Gestational trophoblastic disease. **For individuals with gestational trophoblastic disease, after uterine evacuation and in the absence of persistent intrauterine disease, we recommend clinicians provide access to all available contraceptive options utilizing a person-centered approach (GRADE 1A). For individuals with gestational trophoblastic disease who have persistently elevated human chorionic gonadotropin (hCG) levels or evidence of intrauterine disease and request an IUD, we suggest shared decision-making with the individual and their oncologist (GRADE 2C).**

Avoidance of unintended pregnancy following treatment of gestational trophoblastic disease (GTD) is important because trends in human chorionic gonadotropin (hCG) values are used to monitor treatment success, recurrence, and the presence of invasive disease. When a hydatidiform molar gestation is suspected, any contraceptive method can safely be initiated immediately after uterine evacuation. CHCs inhibit pituitary production of hCG, reducing the chance that pituitary hCG is falsely attributed to GTD in individuals over 40 years. Hormonal contraception use does not confer an increased risk of post-molar gestational trophoblastic neoplasia and can be initiated immediately following uterine evacuation [31–33]. The 2024 CDC MEC categorizes GTD with concern for persistent or recurrent intrauterine disease as an unacceptable risk (category 4) for copper and LNG IUD initiation, citing theoretical concerns about infection, bleeding, and perforation [13]. However, the risk of IUD placement may be lower than the risk of adverse outcomes due to pregnancy in the setting of GTD. Thus, shared decision-making is critical for individuals in this population who request an IUD.

2.4. Cervical cancer

2.4.1. Does the use of hormonal contraception or intrauterine devices impact the effectiveness of cervical cancer treatment or increase the risk of cervical cancer recurrence?

For individuals with cervical dysplasia or a history of cervical cancer, we suggest clinicians provide access to all available contraceptive methods utilizing a person-centered approach (GRADE 2B). We suggest against IUD placement in individuals with active cervical malignancy (GRADE 2C).

Prospective trials controlling for human papillomavirus status provide inconsistent results regarding the relationship between cervical cancer and contraceptive use [34]. Use of hormonal contraception may be associated with a small increase in the risk of developing cervical cancer, with reported relative risks between 1.1 to 2.2 compared to nonusers [35–37]. However, recent or past use of a hormonal or nonhormonal IUD has not been found to correlate with risk of precancerous lesions, and current use of a nonhormonal IUD may be protective against the development of invasive cervical cancer [38–40]. Hormonal contraceptive use does not appear to increase the risk of recurrence after excision of high-grade cervical lesions [41]. There are no studies to guide the use of contraceptives in individuals with adenocarcinoma in situ or invasive cervical cancer. When a new diagnosis of invasive cervical cancer is made or when conservative management is planned, all contraceptive methods, including IUDs, may be continued. Placement of an IUD for an individual with active cervical malignancy is not recommended due to theoretical concerns of disrupting the tumor, seeding, bleeding, and infection [13]. Contraception is especially important in those undergoing pelvic radiation to prevent pregnancy complications.

3. Summary of recommendations

Please see Table 1 for a key to interpreting GRADE.

Personal cancer history[a]	Recommendation[b]
Breast	
Hormone receptor-positive	Nonhormonal contraceptives first-line option (1B). Avoid or minimize hormone exposure (1C).
Hormone receptor-negative	Nonhormonal contraceptives first-line option (1B). SDM[c] for HC use (1C).
Increased risk for familial or hereditary breast and ovarian cancer (HBOC)	Provide access to all available contraceptive methods (1B).
Ovary	
History of or active ovarian cancer	Provide access to all available contraceptive methods (1B). SDM for HC use for hormonally-sensitive ovarian malignancies such as adult granulosa cell tumors, low-grade serous, and endometrioid adenocarcinomas (2C).
High-risk for ovarian cancer	Offer HC with the goal of ovarian suppression for ovarian cancer prevention (1B).
Treated with estrogen-blocking therapy	Avoid estrogen-containing contraceptives (Best Practice).
Uterus	
History of endometrial cancer	Provide access to all available contraceptive methods (1B).
Active endometrial cancer	SDM for IUD use (GRADE 1B).
History of or active gestational trophoblastic disease	Provide access to all available contraceptive methods after uterine evacuation in the absence of persistent intrauterine disease (1A). SDM for IUD use if persistently elevated hCG levels or evidence of intrauterine disease (2C).
Cervix	
History of cervical cancer or active cervical dysplasia	Provide access to all available contraceptive methods (2B).
Active cervical malignancy	Suggest against IUD placement (2C).

HC, hormonal contraception; hCG, human chorionic gonadotropin; IUD, intrauterine device; SDM, shared decision-making.

[a] Active cancer treatment (as opposed to past cancer history) may increase the risk of thrombosis, and should be included in clinical decision-making.

[b] Clinicians should provide person-centered contraceptive care that supports autonomy in decision-making for the individual receiving care and counseling directly tailored to the individual's expressed preferences and values.

[c] Shared decision-making with the individual and their oncologist.

4. Recommendations for future research

- Safety of hormonal contraception after breast cancer by cancer subtype.
- The relationship between ovarian cancer prevention and the impact of a contraceptive method on ovulatory suppression, including how effectively different doses or formulations may impact ovulation.

- IUD use after fertility-sparing treatment for cervical cancer.
- How placement of an IUD affects clinical outcomes with active cervical cancer and active endometrial cancer.
- Effects of different contraceptive methods on an individual's experiences with cancer treatment.

5. Sources

A series of clinical questions were developed by the authors and representatives from the Society of Family Planning's Clinical Affairs Committee. With the assistance of medical librarians, we searched the databases of Medline, Embase, Cochrane reviews and registered clinical trials to identify any relevant articles related to cancer and contraception, published between January 1, 2012 and June 29, 2023. The initial search yielded over 16,000 results, which were further limited to those relevant to hormonal contraception. We reviewed 5484 references for relevance and to use in drafting the recommendations. The search was restricted to articles published in English. We also identified studies by reviewing the references of relevant articles and clinical guidelines published by organizations or institutions with related recommendations, such as the Centers for Disease Control and Prevention, the American College of Obstetricians and Gynecologists, and the Society of Family Planning. The content of and references cited in relevant product labels and Food and Drug Administration prescribing information were also considered when developing critical statements on topics involving medication. When relevant evidence was not available or too limited to inform practice, the expert opinion of clinicians with complex family planning expertise was used to develop the clinical statements.

6. Intended audience

This Clinical Recommendation is intended for Society of Family Planning members, family planning and reproductive health service clinicians, oncologists and clinicians who care for cancer survivors, family planning and reproductive health researchers, consumers of family planning care, and policymakers.

Authorship

This Clinical Recommendation was prepared by Pelin Batur, MDD; Ashley Brant, DO, MPH; Carolyn McCourt, MD; and Eleanor Bimla Schwarz, MD, MS, with the assistance of Anitra Beasley, MD, MPH; Jessica Atrio, MD, MSc; Danielle Gershon, MD; and Neil A. Nero, MLIS, AHIP. It was reviewed and approved by Clinical Affairs Committee members on behalf of the Board of Directors of the Society of Family Planning, the Society of Gynecologic Oncology's (SGO's) Publication Committee, and SGO's Board of Directors.

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The North American Society for Pediatric and Adolescent Gynecology and the Society of Gynecologic Oncology endorse this document.

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Society of Family Planning Clinical Recommendation: Contraceptive considerations for individuals with cancer and cancer survivors part 3 – Skin, blood, gastrointestinal, liver, lung, central nervous system, and other cancers: *Joint with the Society of Gynecologic Oncology*☆,☆☆

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ABSTRACT

This Clinical Recommendation provides evidence-informed, person-centered, and equity-driven recommendations to facilitate the management of and access to contraception care for individuals who are diagnosed with, being actively treated for, or who have previously been treated for skin, blood, gastrointestinal, liver, lung, central nervous system, and other cancers. For individuals with a history of nonmelanoma skin cancers, we recommend clinicians provide access to all available contraceptive methods utilizing a person-centered approach (GRADE 1B). Based on expert opinion, for individuals with a history of melanoma who are considering hormonal contraception, we suggest shared decision-making with the individual and their oncologist (GRADE 2C). For individuals with a history of myeloproliferative neoplasms, lymphatic or hematopoietic cancer, and hematopoietic stem cell transplantation, we recommend clinicians provide access to all contraceptive methods (GRADE 1B); we suggest shared decision-making in those with follicular lymphoma subtype of non-Hodgkin lymphoma who are considering hormonal contraception (GRADE 2C). For individuals with a history of colorectal, pancreatic, esophageal, and gastric cancer, we recommend clinicians provide access to all available contraceptive methods (GRADE 1C). We recommend clinicians provide access to all available contraceptive methods in individuals with a history of primary hepatocellular carcinoma with normal liver function (GRADE 1C); with severely altered liver function, we recommend nonhormonal and progestin-only contraceptives as first-line contraceptive methods (GRADE 1B). For individuals with a history of glioma, we recommend clinicians provide access to all available contraceptives (GRADE 1B). For individuals with a history of meningioma who request hormonal contraception, we recommend shared decision-making with the individual and their oncologist (GRADE 2B). We recommend clinicians provide access to all available contraceptive options for individuals with a history of or active bladder, kidney, thyroid, head and neck squamous cell, and soft tissue sarcomas (GRADE 1B). This document is part 3 of a three-part series that updates the Society of Family Planning's 2012 *Cancer and contraception* clinical guidance. It builds upon the considerations outlined in the *Society of Family Planning Committee Statement: Contraceptive considerations for individuals with cancer and cancer survivors part 1 – Key considerations for clinical care* and parallels recommendations outlined in the *Society of Family Planning Clinical Recommendation: Contraceptive considerations for individuals with cancer and cancer survivors part 2 – Breast, ovarian, uterine, and cervical cancer*. Readers are encouraged to review parts 1 and 2 for this additional context.

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1. Background

This Clinical Recommendation provides evidence-informed, person-centered, and equity-driven recommendations to facilitate the management of and access to contraception care for individuals who are diagnosed with, being actively treated for, or who have previously been treated for skin, blood, gastrointestinal, liver, lung, central nervous system, and other cancers. It builds upon the considerations outlined in the *Society of Family Planning Committee Statement: Contraceptive considerations for individuals with cancer and cancer survivors part 1 – Key considerations for clinical care* and parallels recommendations outlined in the *Society of Family Planning Clinical Recommendation: Contraceptive considerations for individuals with cancer and cancer survivors part 2 – Breast, ovarian, uterine, and cervical cancer*. Readers are encouraged to review parts 1 and 2 for this additional context [1,2].

When literature regarding the safety and efficacy of specific contraceptive methods in individuals with a history of a particular type of cancer was not available, literature from the general population was used to inform recommendations. No well-designed studies assessing contraceptive risks in those actively undergoing cancer treatment were available. Thus, recommendations for those with a history of a specific cancer type also apply to those who are actively being treated for that cancer. However, active cancer is often associated with higher risks of thrombosis, which needs to be taken into consideration during shared decision-making if contraceptives that increase thrombotic risks are considered while the individual is receiving treatment.

This guidance series uses shared decision-making to refer to a collaborative process in which individuals and clinicians work together to make healthcare decisions informed by evidence, the care team's knowledge and experience, and the individual's values, goals, preferences, and circumstances. It uses person-centered care to refer to care that is respectful of and responsive to the individual's preferences, needs, and values, ensuring that these elements guide all clinical decisions. These principles are fundamental to contraceptive care, and all recommendations in this guidance series should be interpreted in this context. This guidance discusses providing a method to an individual with a US Centers for Disease Control and Prevention (CDC) medical eligibility criteria (MEC) condition or characteristic with an unacceptable risk (category 4). Typically, this should occur in rare circumstances and when no safer alternative or acceptable method exists. Ultimately, the acceptability of risk should be determined by the individual. Clinicians can support an individual's understanding of risk through shared decision-making.

2. Clinical questions

2.1. Skin

2.1.1. Does the use of hormonal contraception increase the risk of skin cancer recurrence?

For individuals with a history of nonmelanoma skin cancer, we recommend clinicians provide access to all available contraceptive methods utilizing a person-centered approach (GRADE 1B) (Table 1).

Based on expert opinion, for individuals with a history of melanoma who are considering hormonal contraception, we suggest shared decision-making with the individual and their oncologist (GRADE 2C).

Estrogens, and to a lesser extent progestins, play a role in increasing melanocytes and melanin content in the skin, with a potential impact on skin cancer risks [3,4]. Studies of exogenous hormone use after malignant melanoma diagnosis are limited and show mixed results, including a possible protective effect, potentially due to differential cancer expression of the estrogen receptor (ER) α, which may have a stimulatory effect compared to ERβ which can have a suppressive effect [5,6]. Overall, hormone exposure or pregnancy-associated melanoma has not been associated with a poorer prognosis [7].

Given the limited evidence regarding hormonal contraceptive use by skin cancer survivors, studies of cancer risk in the general population can also inform decision-making. Older observational studies have suggested that oral contraception users have a twofold melanoma risk compared to nonusers and that this risk was over threefold among those who used oral contraception for more than 10 years [8]. However, updated meta-analyses show either no increased melanoma risks with exogenous hormone use or a much lesser magnitude of increased risk, with 5 or more years of oral contraception use having a risk ratio (RR) of 1.18 (95% CI 1.07–1.31), while 10 years or more had a RR of 1.25 (95% CI 1.06–1.48) [9,10]. A prospective cohort study of 98,995 French, pregnancy-capable individuals also showed no strong association between oral contraception use and melanoma; the risk increases were related to older high-dose formulations and other confounders, including increased rates of sunburns and tanning bed use in contraceptive users [11]. In many studies, sun exposure and reproductive factors that are independent risk factors for melanoma, such as decreased parity or first live birth after age 20 years, were unknown, making it difficult to draw definitive conclusions [10]. Regarding other types of skin cancer, a meta-analysis and prospective study have shown no association between hormonal contraception and basal cell or squamous cell carcinomas [12,13].

2.2. Blood

2.2.1. Does the use of hormonal contraception impact blood cancer treatment effectiveness or the risk of cancer recurrence?

For individuals with a history of myeloproliferative neoplasms, lymphatic or hematopoietic cancer, and hematopoietic stem cell transplantation, we recommend clinicians provide access to all contraceptive methods utilizing a person-centered approach (GRADE 1B). For individuals with follicular lymphoma subtype of non-Hodgkin lymphoma who are considering hormonal contraception, we suggest shared decision-making with the individual and their oncologist (GRADE 2C).

Hormonal contraception has been shown to have a protective effect on the diagnosis of acute myeloid leukemia and neutral or protective effects on the risks of non-Hodgkin lymphoma. However, a potential increase in follicular lymphoma subtype is possible given multiple pregnancies are protective for the latter [14–17]. Overall, lymphatic and hematopoietic cancer risk is lower among hormonal contraception users compared to nonusers, with an incidence rate

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Table 1
Key for GRADE recommendations[a]

Symbol	Meaning
1	Strong recommendation
2	Weaker recommendation
A	High quality evidence
B	Moderate quality evidence
C	Low quality evidence, clinical experience, or expert consensus
Best Practice	A recommendation in which either (1) there is an enormous amount of indirect evidence that clearly justifies a strong recommendation; direct evidence would be challenging and an inefficient use of time and resources to bring together and carefully summarize, or (2) a recommendation to the contrary would be unethical

[a] Society of Family Planning Clinical Recommendations use a modified GRADE system. The GRADE system is described in several publications, with a comprehensive set of articles in the Journal of Clinical Epidemiology (J Clin Epidemiology, (2011) 64:383–394, 64:395–400, 64:401–406, 64:407–415, 64:1277–1282, 64:1283–1293, 64:1294–1302, 64:1303–1312, 64:1311–1316, (2013) 66:140–150, 66: 151–157, 66:158–172, 66:173–183, 66:719–725, 66:726–735).

ratio of 0.74 (99% CI 0.58–0.94) [18]. Myeloproliferative neoplasms, including polycythemia vera and essential thrombocythemia, are not impacted by hormonal contraception use [19]. Importantly, hematopoietic stem cell transplantation causes hypoestrogenism symptoms in approximately 86% of individuals and premature ovarian insufficiency in 74%, necessitating conversations about contraceptive need as well as ways to manage the symptoms and long-term risks of hypoestrogenism [20–22]. Those with a history of blood dyscrasias, such as leukemia, or those suffering from thrombocytopenia due to myelosuppressive therapy often experience abnormal uterine bleeding, requiring the use of hormonal contraception to manage symptoms [23]. Individuals with a history of hematologic malignancies may safely use hormonal contraception. However, myeloproliferative neoplasms and hematopoietic stem cell transplantation can significantly increase thrombotic risks, which should be considered in shared decision-making.

2.3. Gastrointestinal (GI)

2.3.1. Does the use of hormonal contraception impact gastrointestinal cancer treatment effectiveness or the risk of cancer recurrence?

For individuals with a history of colorectal, pancreatic, esophageal, and gastric cancer, we recommend clinicians provide access to all available contraceptive methods utilizing a person-centered approach (GRADE 1C). For individuals with malabsorption, nonoral methods may be more effective.

Although multiple studies have examined associations between hormonal contraception use and GI cancers, including colorectal, pancreas, esophageal, and gastric cancer, information on how use may impact individuals who have been diagnosed with GI cancer is limited. Overall, hormonal contraception use is associated with either no or decreased risk of colorectal cancer in the general population [24–30]. While risk reductions have been hypothesized for individuals with a high risk of GI cancer, such as those with Lynch syndrome, these have not been clearly documented. Similarly, individuals with inflammatory bowel disease (IBD) have a higher risk of GI cancers and often need to plan for pregnancy while on immunomodulator therapies. There are no studies evaluating the impact of contraceptives on cancer risk in those with IBD.

The majority of studies investigating hormonal contraception use and subsequent pancreatic cancer found either no or decreased risk of cancer [31–37]. Though two prospective cohort studies suggested exogenous hormone use is associated with a small increased risk of pancreatic cancer, methodologic limitations prevent their generalizability [38,39]. Two meta-analyses report reduced risk of esophageal cancer with oral contraception use; one meta-analysis focused on gastric cancer found no association with hormonal contraception [40–42]. Given these findings, clinicians should not limit the contraceptive options offered to individuals being treated for or with a history of colorectal, pancreatic, esophageal, and gastric cancer. However, pancreatic and gastric cancer can significantly increase thrombotic risks, which should be considered in shared decision-making. Certain GI cancers or cancer therapies can impair medication absorption, leading to theoretical concerns for decreased effectiveness of oral formulations. Therefore, individuals who are experiencing malabsorption should consider nonoral contraceptives.

2.4. Liver

2.4.1. Does the use of hormonal contraception impact the effectiveness of liver cancer treatment or increase the risk of liver cancer recurrence?

For individuals with a history of primary hepatocellular carcinoma with normal liver function, we recommend clinicians provide access to all available contraceptive methods utilizing a person-centered approach (GRADE 1C). For individuals with severely altered liver function, we recommend nonhormonal and progestin-only contraceptives as first-line contraceptive methods, given the increased risk of thrombosis in this population (GRADE 1B). Given the risk associated with combined hormonal contraceptives in individuals with a history of hepatocellular adenoma, these individuals may prefer methods that avoid or minimize systemic hormone levels.

Given the limited evidence on the impact of hormonal contraceptive use in individuals with liver cancer or a history of liver cancer, studies of cancer risk in the general population are used to inform decision-making. The 2024 CDC Medical Eligibility Criteria (MEC) categorizes combined hormonal contraceptive (CHC) use for individuals with hepatocellular carcinoma as an unacceptable risk (category 4) [43]. Research on whether the use of hormonal contraception impacts the risk of liver cancer, specifically hepatocellular carcinoma, focuses exclusively on contraception and its relationship to developing cancer, with none providing information on the potential impact of hormonal contraceptive use on cancer outcomes. In 2018, the International Agency for Research on Cancer (IARC) concluded that existing evidence supports the idea that oral contraceptives containing a combination of estrogen and progestin can lead to the development of liver cancer [44]. This document did, however, acknowledge that no association was found in cohort studies, and most of these included a small number of cases. A meta-analysis and a pooled cohort of observational data from 799,500 US participants suggested that oral contraceptives are not associated with a risk of liver cancer; few studies control for important confounders such as chronic hepatitis infection or alcohol consumption [45,46]. Individuals with liver dysfunction related to primary or metastatic malignancy have an elevated thrombosis risk, and therefore estrogen-containing contraceptives are not recommended.

Hepatocellular adenomas are benign lesions that primarily occur in pregnancy-capable individuals of reproductive age. The 2024 CDC MEC categorizes hepatocellular adenoma as an unacceptable risk (category 4) for CHC use because oral contraceptive use is associated with the development and growth of hepatocellular adenoma [43]. However, this risk has significantly declined with the use of lower doses of estrogen in current formulations [47,48]. Whether other forms of hormonal contraception have similar effects is unknown. For individuals with a history of

hepatocellular adenoma, it is important to balance the risk associated with hormonal contraceptive use with its benefits for anemia, a common complication for individuals with liver disease; these individuals may want to consider methods that reduce menstrual bleeding, such as an levonorgestrel intrauterine device (IUD). For individuals who prefer higher-dose hormonal contraceptives, discussion of whether follow-up imaging is necessary can be considered.

2.5. Lung

2.5.1. Does the use of hormonal contraception impact the effectiveness of lung cancer treatment or increase the risk of lung cancer recurrence?

For individuals with a history of lung cancer, we recommend clinicians provide access to all available contraceptive methods utilizing a person-centered approach (GRADE 1B).

There is limited evidence on the impact of hormonal contraceptive use in individuals with lung cancer or a history of lung cancer. Reports on hormonal contraception and lung cancer risk are sparse and consist of meta-analyses, case-control, and prospective observational cohort studies, which are also limited by recall bias; only one reported on the possible effect on lung cancer outcomes [49]. Several studies indicate that the majority of non-small cell lung cancers express ERβ, and its prevalence is higher among never-smokers when compared to smokers [50–52]. Studies examining the possible effects of post-menopausal hormone therapy on lung cancer risk have had inconsistent results [53,54]. Two studies, including the large Women's Health Initiative study, concluded that oral contraceptive use had little to no impact on lung cancer risk [55,56]. Three smaller studies demonstrated a decreased risk of lung cancer associated with oral contraceptive use [57–59].

2.6. Central nervous system (CNS)

2.6.1. Does the use of hormonal contraception impact the effectiveness of CNS cancer treatment or increase the risk of CNS cancer recurrence?

For individuals with a history of glioma, we recommend clinicians provide access to all available contraceptive methods utilizing a person-centered approach (GRADE 1B). For individuals with a history of meningioma who request hormonal contraception, we recommend shared decision-making with the individual and their oncologist (GRADE 2B). The hormone receptor status of a meningioma may influence decisions to initiate or continue hormonal contraceptives or consider increased monitoring while on hormonal therapy.

Data regarding hormonal contraceptive use and primary CNS tumors can be divided into two main histologic categories: glioma and meningioma. Sex hormones are hypothesized to play a role in both the development and progression of these tumors, albeit with opposite effects. Gliomas are a heterogeneous group of CNS tumors and are more common in men than women [60–62]. No clinical studies report on the effects of hormonal contraceptives on existing gliomas, and studies of glioma risk in the general population can, therefore, inform decision-making. Meta-analyses, case-control, and prospective observational cohort studies consistently demonstrate either no association or decreased risk of glioma with oral contraception use [63–69]. However, one case-control Danish registry study that utilized prescription data to ascertain hormonal contraception exposure in individuals younger than 50 years of age demonstrated an increased risk of glioma that increased with duration of hormonal contraception use (OR 1.5; 1.2–2.0 for ever-users) [70]. However, this study did not control for body mass index or reproductive factors other than parity, which may also affect glioma risk.

Meningiomas, the most common primary brain tumor, occur more frequently in women compared to men. Although 95% of meningiomas are benign, their size and location can cause significant morbidity and may require surgical excision. Hormonal factors may have a role in meningioma development as progesterone receptors are present in approximately 75% of tumors, androgen receptors in just under 50%, and estrogen receptors have been identified in approximately 10% of cases [71,72]. There are case reports describing the growth of meningiomas during pregnancy and the decrease or regression of tumors following delivery [73–76]. Multiple observational studies and meta-analyses examining a possible relationship between the risk of meningioma with low-dose estrogen and progestin exposure, either related to menopausal hormone therapy or hormonal contraception use, showed mixed results. Some demonstrated a small increased risk of meningioma (OR 1.24; 1.01–1.51 and OR 1.8; 1.1–2.9). This includes one small Swedish case-control study that suggested an increased risk (OR 2.7; 95% CI 0.9–7.5) with subdermal contraceptive implants, injections, or hormonal intrauterine devices (IUDs). Several studies indicate no association with oral contraceptive use and meningioma risk [64,69,77–83]. A recent case-control study raises concerns about the relationship between injection medroxyprogesterone acetate and meningioma [83]. However, the study has significant limitations, including the failure to assess important confounders such as exposure to ionizing radiation. According to the European Medicines Agency, cyproterone acetate, a drug used in combination with ethinyl estradiol as a CHC, has been associated with an increased risk of meningioma, is contraindicated in people with a history of meningioma, and should be discontinued if meningioma is diagnosed [84,85]. However, cyproterone acetate is not approved by the Food and Drug Administration for use in the US.

2.7. Does the use of hormonal contraception impact the effectiveness of treatments for other common cancers or increase the risk of cancer recurrence for these cancer types?

For individuals with a history of or active bladder, kidney, thyroid, head and neck squamous cell, and soft tissue sarcomas, we recommend clinicians provide access to all available contraceptive options utilizing a person-centered approach (GRADE 1B).

Large observational studies show no association of hormonal contraception use with bladder cancer [86], and mixed results about whether there may be a protective versus neutral effect on cancers of the kidney [87–89]. Many, though not all, studies suggest a protective effect on thyroid cancer, with increased protection from longer duration of use [90–95]. Similarly, hormonal contraception does not seem to impact the risk of head and neck squamous cell cancers and may have a protective role in soft tissue sarcoma [96,97].

3. Summary of recommendations

Please see Table 1 for a key to interpreting GRADE.

Personal cancer history[a,b]	Recommendation[c]
Skin	
Nonmelanoma	Provide access to all available contraceptive methods for history of nonmelanoma skin cancers (1B).
Melanoma	SDM[d] for HC use (2C).
Blood	
Myeloproliferative neoplasms, lymphatic or hematopoietic cancer, and hematopoietic stem cell transplantation	Provide access to all available contraceptive methods (1B).
Follicular lymphoma subtype of non-Hodgkin lymphoma	SDM for HC use (2C).
Gastrointestinal	
Colorectal, pancreatic, esophageal, and gastric cancer	Provide access to all available contraceptive methods (1C). For individuals with malabsorption, nonoral methods may be more effective.
Liver	
Primary hepatocellular carcinoma with normal liver function	Provide access to all available contraceptive methods (1C).
Severely altered liver function	Nonhormonal and progestin-only contraceptives as first-line option given thrombosis risk (1B).
Hepatocellular adenoma	Individuals may prefer methods which avoid or minimize systemic levels of hormone.
Lung	
Lung cancer	Provide access to all available contraceptive methods (1B).
CNS	
Glioma	Provide access to all available contraceptive methods (1B).
Meningioma	SDM for HC use (2B). The hormone receptor status of a meningioma may influence decisions to initiate or continue HC or consider increased monitoring while on hormonal therapy.
Other	
Bladder, kidney, thyroid, head and neck squamous cell, and soft tissue sarcomas	Provide access to all available contraceptive methods (1B).

CNS, central nervous system; HC, hormonal contraception; IUD, intrauterine device; SDM, shared decision-making.
[a] Active cancer treatment (as opposed to past cancer history) may increase the risk of thrombosis, and should be included in clinical decision-making.
[b] Statements made in these recommendations for those with a history of a specific cancer type also apply to those who are actively being treated for that cancer.
[c] Clinicians should provide person-centered contraceptive care that supports autonomy in decision-making for the individual receiving care and counseling directly tailored to the individual's expressed preferences and values.
[d] Shared decision-making with the individual and their oncologist.

4. Recommendations for future research

- Effect of hormonal contraception on inflammatory bowel disease and cancer risk.
- Effects of combined vs progestin-only hormonal contraception on meningioma development.
- Effects of hormonal contraception on bladder, kidney, thyroid, head and neck squamous cell, and soft tissue sarcomas cancer outcomes based on expression of estrogen receptor subtypes.
- Effects of different contraceptive methods on cancer treatment and outcomes in individuals with active cancer or a history of cancer.

5. Sources

A series of clinical questions were developed by the authors and representatives from the Society of Family Planning's Clinical Affairs Committee. With the assistance of medical librarians, we searched the databases of Medline, Embase, Cochrane reviews and registered clinical trials to identify any relevant articles related to cancer and contraception, published between January 1, 2012 and June 29, 2023. The initial search yielded over 16,000 results, which were further limited to those relevant to hormonal contraception. We reviewed 5484 references for relevance and to use in drafting the recommendations. The search was restricted to articles published in English. We also identified studies by reviewing the references of relevant articles and clinical guidelines published by organizations or institutions with related recommendations, such as the Centers for Disease Control and Prevention, the American College of Obstetricians and Gynecologists, and the Society of Family Planning. The content of and references cited in relevant product labels and Food and Drug Administration prescribing information were also considered when developing clinical critical statements on topics involving medication. When relevant evidence was not available or too limited to inform practice, the expert opinion of clinicians with complex family planning expertise was used to develop the critical statements.

6. Intended audience

This Clinical Recommendation is intended for Society of Family Planning members, family planning and reproductive health service clinicians, oncologists and clinicians who care for cancer survivors, family planning and reproductive health researchers, consumers of family planning care, and policymakers.

Authorship

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