

Reducing Teen Pregnancy Rates Through Contraceptive Education

Anastasia (Stacie) Bellairs, PA-S2

Teen pregnancy is a public health issue that has been a long-time topic of concern in the United States, but in recent years has been declining.¹ In 2021, birth rates for youth ages 15-19 fell to 13.9 per 1000, down from 15.4 per 1000 in 2020 in the United States.¹ The teen pregnancy rate has fallen every year since 2009.¹ In 2007, the teen birth rate for ages 15-19 was 41.5 per 1000, while in 1991 it was 61.8 per 1000.¹ According to the Oregon Health Authority data from 2022, 475 births were recorded in Oregon for adolescents ages 10-17, which is 2.5% of this population group.² Multnomah county accounted for 96 of these births, which amounts to a 3% birth rate in this population, indicating that Multnomah county has higher rates of teen pregnancy when compared with the state of Oregon as a whole.²

Even with this substantial progress and downward trend, reducing pregnancies in adolescence still remains on the Healthy People 2030 objectives because of the community wide impact felt from teen pregnancy.³ Adolescent pregnancies result in both declined maternal and fetal health outcomes as well as socioeconomic impact on the mother and family. In terms of maternal and fetal health, pregnant adolescents are more likely to experience medical pregnancy complications such as preterm delivery, eclampsia, postpartum hemorrhage, low birth weight, anemia and increased maternal and fetal mortality.⁴ In addition to these medical risks, mothers who give birth in their teen years are more likely to face socioeconomic hardship and decreased opportunity for financial success. According to Child Trends, only 51% of high school mothers go on to receive their high school diploma compared to their counterparts without a teen pregnancy at 89%.⁵ Being a child of a teen parent also increases the likely hood of that child becoming a teen parent themselves, making this a cyclical problem that may impact generational wealth and opportunity.⁶

In terms of the different populations impacted by teen pregnancy, this issue mirrors other socioeconomic and racial disparities that we see in the United States. Teen pregnancy rates in 2021 were highest among American Indian/Native Alaskan populations (24.2. per 1000), Native Hawaiian/Pacific Islander populations (21.9 per 1000), Black populations (21.8 per 1000), and Hispanic populations (21.1 per 1000).¹ Teen pregnancy

rates in 2021 among Asian populations (2.0 per 1000) and White populations (9.4 per 1000) were markedly lower.¹ Of note however, each distinct racial group is experiencing a downward trend in teenage pregnancy, rather than one population group being the main driver for the downward trend.¹

Along with racial and ethnic groups, other social determinants of health correlate with teen pregnancy rates. In terms of risk factors for teen pregnancy, systemically marginalized communities are most effected. Socioeconomic factors such as low income, low education and neighborhood disadvantage have been found to be associated with higher rates of teen pregnancy among young girls.⁷ Additionally, associated factors of teen pregnancy caused by teen males include experiencing childhood abuse, delinquent behaviors, substance abuse, having a teen parent, serious family disruption and not living with either parent.⁶ These correlated risk factors illustrate that teen pregnancy is a multifactorial public health issue.

As discussed, teenage pregnancy is a public health issue that negatively impacts young parents and their children, both in terms of health outcomes and socioeconomic opportunity. Comprehensive contraceptive education for adolescents is imperative to continue the downward trend in teen pregnancy rates that the United States has been experiencing. The recent declines in teen pregnancy rates across America is thought to be in large part due to increased contraceptive use.⁸ Between 2007 and 2013, the adolescent (ages 15-19) birth rate declined 36%, while the amount of sexual activity in this time frame did not change significantly.⁸ All the while, contraceptive use of all kinds, use of multiple contraceptive methods, and use of highly effective methods all increased significantly in this time frame, correlating with the aforementioned 36% decrease in teen pregnancy rates.⁸ This correlation helps illustrate that contraceptive use is critical for decreasing teen pregnancy rates in young people. The United States Office of Disease Prevention and Health Promotion also highlights increasing the proportion of adolescence who use contraception the first time they have sex as an objective for Healthy People 2030.⁹

In order to increase the number of teens who use contraceptive methods to prevent pregnancy, adolescents must be educated on their options to make informed decisions. Comprehensive sex education is an education model that includes but is not limited to contraceptive education. The World Health Organization defines comprehensive sex education as age appropriate, medically accurate education on human development,

sexuality, menstruation, puberty, healthy relationships, consent, reproduction, and sexually transmitted infections, including HIV.¹⁰

The debate between comprehensive sex education and abstinence only education has been long standing in American discourse and politics. The critique of comprehensive sex education is often focused on the thinking that teaching teens about sexuality and contraceptive methods will increase the rate of teen sexual activity. However, research studies show the opposite effect. A 2008 study found that teens who receive comprehensive sex education were less likely to engage in vaginal intercourse than those who were taught with the abstinence only pedagogy.¹¹ Likewise, abstinence only sex education is not an effective way to reduce teen pregnancy rates. In the same 2008 study, when compared with a control group who received no sex education, those who received comprehensive sex education were significantly less likely to experience teen pregnancy.¹¹ However, those who received the abstinence only education did not differ in teen pregnancy rates when compared with the control group who received no sex education at all.¹¹ This research shows that comprehensive sex education is an effective way to reduce teen pregnancy rates and contrary to popular belief, it does not increase the rate that teens engage in sexual activity.

The Oregon Department of Education uses the comprehensive sex education model to shape their health education standards. The goal of Oregon's K-12 sexuality education program is to support students to:

1. "Realize their health, well-being, and dignity;
2. Build and maintain healthy relationships, including friendships, and/or romantic or sexual relationships;
3. Develop awareness of their own identities and support the identities of others;
4. Ensure the protection of their rights and the rights of others throughout their lives;
5. Consider their own boundaries and respect the boundaries of others;
6. Recognize and access support, information, and care from trusted adults and organizations; and
7. Reduce child abuse, sexual violence, harassment, and bullying."¹²

The 2023 Oregon Health Standards relating to sexual and reproductive health and development differ by grade level, starting in kindergarten and extending through high school. In kindergarten, the OR education standards

state students should be able to “list medically accurate names for body parts, including the genitals.”¹³ By sixth grade, students should be able to “identify the benefits, risks, and effectiveness of various methods of contraception, including abstinence, the correct usage of barrier methods, and emergency contraception.”¹³ In high school, contraceptive knowledge should including being able to “compare and contrast methods to prevent unintended pregnancy, considering effectiveness and personal impact on health.”¹³ As well as this, students should be able to demonstrate correct usage of barrier methods and list methods available without a prescription in Oregon and where to access them.¹³

My presentation to a high school health class will be based on the Oregon Health Standards for high school students. In my presentation, I will cover the efficacy, benefits and risks of multiple common birth control methods, including hormonal methods (pill, patch, ring, injection), barrier methods (internal/external condoms, diaphragm, cervical cap, sponge, spermicide), long acting reversible contraceptive methods (ie LARCs: IUDs, implant), sterilization (vasectomy, tubal ligation), and other methods (coitus interruptus and natural family planning). I will also cover how to get access to these methods, which methods they can get without a prescription, and locations in the local community they can receive contraceptive care.

Hormonal contraceptive methods include combined oral contraceptive pills, dermal patches and vaginal rings, progestin only pills and DMPA injections. In the US, combined oral contraceptive pills are the most commonly used reversible contraceptive method.¹⁴ Both the combined oral pills, dermal patches and vaginal rings contain estrogen and progestin and they work by suppressing ovulation.¹⁴ To use the combined hormonal contraceptives, the pill must be taken orally every day, the patch is applied to the skin and replaced every week, and the ring is inserted into the vagina and switched every month. In terms of effectiveness, unintended pregnancy in the first year of use happens 7% of the time with typical use and 0.3% of the time with perfect use for the pill, patch and vaginal ring.¹⁴ Advantages of the combined hormonal methods include bleeding regulation, decreased menstrual bleeding, dysmenorrhea and premenstrual symptoms, decreased ovarian and endometrial cancer risk and improvement in hirsutism and acne, among others.¹⁴ Disadvantages of the combined hormonal methods include regular maintenance required, needing access to a prescriber, increased risk of venous thromboembolism.¹⁴ Common side effects of these methods include headache, nausea, sore

breasts, spotting and changes to menstrual cycle.¹⁵ Specific to the pill, disadvantages including having to take a pill everyday for the method to be effective. Specific to the patch, advantages include less maintenance and increased consistency and adherence of use with once weekly patch changes.¹⁴ Disadvantages of the patch also include allergic skin reactions and possibly less efficacy in patients who weigh more than 90 kg.¹⁴ Concerning the vaginal ring, advantages include increased convenience of use/adherence for most patients since the vaginal ring only needs to be changed once a month.¹⁴ Disadvantages of the vaginal ring uniquely include vaginal symptoms such as vaginitis, discomfort and discharge.¹⁴

Hormonal methods that contain progestin without estrogen include the depot medroxyprogesterone acetate (DMPA) injection and progestin only pills. The 150 mg DMPA injection (brand name Depo-Provera) is an intramuscular injection given in office every 13 weeks, with a 2 week grace period. It works as a contraceptive by primarily inhibiting ovulation by means of suppressing FSH and LH, and also thickening cervical mucus and thinning the endometrial lining of the uterus.¹⁴ With typical use, 4% of users will experience an unintended pregnancy in the first year.¹⁴ With perfect use, this number is only 0.2%, which highlights how the continued maintenance required for this method is a significant factor in its effectiveness.¹⁴ That being said, the injection is more effective with typical use than the combined hormonal methods (pill, patch, ring at 7%), likely because it requires less frequent maintenance.¹⁴ Advantages of the injection include less frequent upkeep than the pill, patch or ring, no estrogen, decreased or absent menstrual bleeding for most users, and decreased risk of endometrial and ovarian cancer.¹⁴ Disadvantages and possible side effects include needing to schedule an in person appointment every 3 months and possible irregular bleeding, weight gain, depression and headaches. Additionally, the injection cannot be quickly discontinued if a patient desires pregnancy or does not tolerate the adverse effects, due to the long-acting nature of the injection.¹⁴ Of note, DMPA has also been shown to temporarily decrease bone mineral density in the first 2 years of use with a subsequent plateau. However, bone mineral density has been shown to recover after 24 weeks of DMPA discontinuation.¹⁶

Progestin only pills (POPs) are the other hormonal option that do not contain estrogen. The mechanism of action is similar to the DMPA injection in that POPs inhibit ovulation, thicken cervical mucus and thin the endometrium. The pill is taken daily, similarly to COCs, although they must be taken at the same time each day

and there is not a placebo week. Effectiveness ranges from 0.2-13.2% of users experiencing an unintended pregnancy in the first year of use.¹⁴ Advantages include fewer contraindications and safety concerns due to lack of estrogen, reversibility and improved menstrual symptoms for some users. Disadvantages include needing a prescription and strict daily maintenance needed for efficacy.¹⁴ Possible side effects include headaches, nausea, weight changes, breast tenderness, depression, acne and hirsutism.¹⁴

Some of the most effective methods available are long-acting reversible contraceptives (LARCs). LARCs include hormonal and copper intrauterine devices (IUDs) and the subdermal implant. Hormonal IUDs contain levonorgestrel and work as a contraceptive by creating an inhospitable intrauterine environment for sperm, thickening cervical mucus, and thinning the endometrial layer of the uterus.¹⁴ Hormonal IUDs available in the US include Mirena and Liletta (52 mg levonorgestrel), Kyleena (19.5 mg levonorgestrel) and Skyla (13.5 mg levonorgestrel), which are effective for 3-8 years, depending on the brand of device.¹⁴ These devices are extremely effective for pregnancy prevention. With typical use of the Liletta and Mirena IUDs, 0.1% of users will experience unintended pregnancy in the first year.¹⁴ This statistic is slightly higher for the hormonal IUDs containing a smaller dose of the levonorgestrel— Kyleena at 0.2% and Skyla at 0.4%.¹⁴ IUDs are inserted into the uterus during a short outpatient procedure by a trained medical provider. The procedure is often uncomfortable for patients, causing uterine cramping. The procedure requires an appointment in a medical office and often time to recuperate after the procedure, which is a barrier for some patients. Advantages of the IUD include long-term effectiveness, no maintenance required for the user, privacy for the user, rapid reversibility with removal of the device, minimal contraindications, and reduced risk of endometrial cancer.¹⁴ For the hormonal IUD specifically, advantages also include less menstrual bleeding due to the levonorgestrel's activity on the endometrium, with some patients losing menstrual bleeding altogether.¹⁴ Disadvantages include cramping and pain during the insertion procedure and needing an appointment with a provider for insertion and removal. Rare complications include infection, IUD expulsion, uterine perforation during insertion and increased risk of ectopic pregnancy if pregnancy were to occur (however, there is a decreased risk of ectopic pregnancy overall when compared with the general population without an IUD).¹⁴ Some patients may also experience hormonal side effects from the levonorgestrel, such as breast tenderness, mood changes and acne.

Notably however, the circulating levonorgestrel levels are much lower with the IUD compared to other hormonal contraceptive methods.¹⁴

Copper IUDs (Paragard) are the only long-acting reversible contraceptives that do not contain any hormones. They work as a contraceptive similarly by creating an intrauterine environment that is inhospitable to sperm. However, since the copper IUD does not contain levonorgestrel, it does not affect the lining of the uterus or thicken the cervical mucus. Like hormonal IUDs, copper IUDs are extremely effective. With typical use of the Paragard IUD, 0.8% of users will become pregnant in the first year of use.¹⁴ Advantages of the copper IUD are similar to the hormonal counterparts in that they are very effective and long lasting (notably 12 years), easily reversible, private for the user and require little, if any, maintenance.¹⁴ Uniquely, the copper IUD does not contain any hormonal element, which is an advantage for some patients. With this brings a unique disadvantage compared to the hormonal IUD, being that with the copper IUD patients may experience increased menstrual bleeding and cramping, especially in the first few cycles after placement and usually decreasing over time.¹⁴

The subdermal implant (Nexplanon) is also a very effective long-acting reversible contraceptive. The implant is a flexible 4cm x 2 mm rod that is placed by a medical professional under the skin between the olecranon and the axilla. It contains 68 mg etonogestrel, an active metabolite of progestin, and works as a contraceptive through ovulation suppression, cervical mucus thickening and endometrial thinning.¹⁴ The product was designed to be used for 3 years, however evidence has shown that the device is still effective at pregnancy prevention for 5 years.¹⁷ In terms of effectiveness, with typical and perfect use only 0.1% of users experience an unintended pregnancy in the first year of use, making it, along with the Liletta and Mirena IUDs, one of the most effective methods available.¹⁴ The advantages of the implant are its extreme effectiveness, its long acting nature, the lack of maintenance required, its discreetness and its safety profile. Possible side effects include unpredictable bleeding patterns and sometimes prolonged menstrual bleeding, headaches, weight gain, acne, breast pain and mood changes.¹⁴ Other disadvantages include needing a medical procedure for insertion and removal of the device, creating a barrier for access. Risks and rare complications of the procedure include pain, bleeding, hematoma, nerve damage, superficial venous thrombosis, and implant migration.¹⁴

Barrier methods are some of the most accessible and easily available methods, which is especially relevant for a high school audience. They include internal and external condoms, cervical diaphragms, caps and sponges, and spermicide. External condoms are sheaths placed directly over the penis and work by creating a physical barrier between sperm and the vaginal canal. With typical use, 13% of users will become pregnant in the first year, but with perfect use, only 2% will—reinforcing the importance of condom education.¹⁴

Advantages include portability, easy accessibility and low cost, STI protection, no hormonal side effects and delayed ejaculation for some users. Potential disadvantages include needing to use a condom with every act of intercourse, decreased sensation, problems with maintaining an erection, latex sensitivity or allergy, and inconvenience or embarrassment while putting on the condom.¹⁴

Barrier methods that involve the vagina and cervix include the internal condom, diaphragm, cervical cap, sponge, and spermicide. Similarly, they work by preventing the sperm migration through the female genital tract. Spermicides contain the active ingredient N-9, which works by destroying the flagella's membrane. Spermicides have a failure rate of 21% with typical use and 16% with perfect use.¹⁴ The internal condom is a sheath attached to a flexible ring placed inside the vagina before intercourse and with typical use 21% of users will become pregnant in the first year and with perfect use 5% will.¹⁴ The diaphragm, cervical cap and sponge are devices that are placed inside the vagina and cover the cervix during intercourse, preventing sperm from entering the os. They are designed to be used in combination with spermicide, which immobilizes and kills sperm. With typical use, 14-27% of users will become pregnant in first year and with perfect use 9-20% will.¹⁴ Advantages of these methods include portability, relatively easy accessibility and reversibility, no hormonal side effects, and control of the method in the hands of the person with the uterus.¹⁴ Disadvantages include required clinician visit for fitting of the diaphragm and cervical cap, needing to use the device with every act of intercourse, needing to be comfortable and proficient with correctly placing a device vaginally, needing to place the device prior to intercourse which may reduce spontaneity, potential allergic reaction or irritation and rarely toxic shock syndrome.¹⁴

Sterilization is a permanent form of contraception. For females, the sterilization procedure is called tubal ligation. In this procedure under anesthesia, the fallopian tubes are either removed, occluded or cut which

prevents the unification of sperm and egg. It is commonly done laparoscopically and can also be done at the same time as a cesarean section. Advantages include effectiveness, permanence, no maintenance required, no hormonal side effects, patient's privacy, and not needing to interrupt intercourse and decreased risk of ovarian cancer with fallopian tube removal. Disadvantages include needing a major surgery requiring anesthesia, recovery time, risks of surgery and anesthesia, permanence if the patient has later regret and high expense depending on coverage.¹⁴ The failure rate for tubal ligation is 0.5% within the first year, notably slightly less effective than IUDs and the implant.¹⁴

For males, the sterilization procedure is called vasectomy. During this outpatient procedure most commonly using local anesthetic, both vas deferens are either cut or occluded, blocking the sperm's ability to leave the body through the ejaculate. However, it is not immediately effective. A 3 month follow up is mandatory to confirm azoospermia in ejaculate. This method is extremely effective, with a 0.1-0.15% failure rate within the first year.¹⁴ Advantages include extreme effectiveness, privacy, safety of procedure, permanence, no need for female partner method, no change in sexual function, and lack of side effects. Disadvantages include possible regret, need for medical procedure, recovery time, surgical and anesthetic risk, and possible high expense.¹⁴

Other methods that do not fit in these categories include fertility awareness-based methods (FABM) and coitus interruptus (withdrawal or "pull out"). FABM involves tracking the fertile window of each ovulation cycle and avoiding intercourse or using a barrier-based method on those days. The fertile window usually occurs at some point between day 8-19 of the ovulation cycle. This can be identified and tracked through monitoring cycle days, cervical secretions, basal body temperature and/or urinary hormones with help from multiple smartphone apps. The percentage of women who get pregnant in the first year with perfect use of this method ranges from 0.4-5%, while typical use ranges from 2-23%, depending on which method of tracking is used.¹⁴ Advantages include no hormones, prescriptions or medical office visits needed. Disadvantages include relatively high failure rate, possibly burdensome tracking methods, consistent awareness/maintenance needed, partner's cooperation needed. FABM may also be very difficult and/or ineffective for people with irregular cycles, recent childbirth, those who are breastfeeding, or recently discontinued hormonal birth control.¹⁴ Coitus

interruptus is the practice of withdrawing the penis from the vagina prior to ejaculation, preventing the sperm from reaching the female genital tract. Factors that make this method less effective are the possibility of motile sperm in the pre-ejaculate and the fact that this method is highly user dependent. In terms of effectiveness the failure rate is 4% with perfect use and 20% with typical use.¹⁴ The advantages include no hormones, devices or medical appointments needed. Disadvantages include relatively high failure rate, relying completely on the male partner to predict ejaculation timing, potential for reproductive coercion, and potential decrease in pleasure and increase in anxiety.¹⁴

To introduce these contraceptive methods to a high school health class, I will use evidence-based methods to ensure students will absorb and retain as much information as possible. In a 2018 study, researchers compared the effectiveness of multiple pedagogies when teaching sex education material. The teaching methods compared were game-based learning (GBL), gamification and the control group which used traditional teaching methods. Post education test scores were significantly higher for the groups who were taught with GBL and gamification teaching pedagogies.¹⁸ To employ these methodologies, I will use the “Kahoot!” learning games platform to enhance the delivery of contraceptive education material. This will also provide a confidential space for the students to share what they know about contraceptives, which can be an uncomfortable topic to discuss openly with peers in a classroom setting.

In summary, my presentation to a high school health class will include information on all of the aforementioned contraceptive methods, how to use them, a comparison of the advantages, disadvantages, and risks of each, as well as how to access these methods in their local community. As previously illustrated, teen pregnancy can negatively impact the physical health and socioeconomic outcomes of young mothers and their children. In order to continue the nation’s downward trend of teen pregnancy rates, comprehensive medically accurate contraceptive education must be provided in Oregon public schools.

References

1. Osterman MJK, Hamilton BE, Martin JA, Driscoll AK, Valenzuela CP. Births: Final Data for 2021. *Natl Vital Stat Rep*. Jan 2023;72(1):1-53.
2. Oregon Health Authority. Teen Pregnancy Data Accessed July 18, 2023, <https://www.oregon.gov/oha/PH/BIRTHDEATHCERTIFICATES/VITALSTATISTICS/TEENPREGNANCY/Pages/index.aspx>
3. Office of Disease Prevention and Health Promotion. Healthy People 2030: Reduce pregnancies in adolescents — FP-03. Accessed July 18, 2023, <https://health.gov/healthypeople/objectives-and-data/browse-objectives/family-planning/reduce-pregnancies-adolescents-fp-03>
4. Todhunter L, Hogan-Roy M, Pressman EK. Complications of Pregnancy in Adolescents. *Semin Reprod Med*. Mar 2022;40(1-02):98-106. doi:10.1055/s-0041-1734020
5. Kate Perper MPP, Kristen Peterson, B.A., and Jennifer Manlove, Ph.D. Diploma Attainment Among Teen Mothers. Accessed July 19, 2023, https://rhyclearinghouse.acf.hhs.gov/sites/default/files/docs/18219-Diploma_Attainment_Among_Teen_Mothers.pdf
6. Fasula AM, Chia V, Murray CC, Brittain A, Tevendale H, Koumans EH. Socioecological risk factors associated with teen pregnancy or birth for young men: A scoping review. *J Adolesc*. Jul 2019;74:130-145. doi:10.1016/j.adolescence.2019.06.005
7. Penman-Aguilar A, Carter M, Snead MC, Kourtis AP. Socioeconomic disadvantage as a social determinant of teen childbearing in the U.S. *Public Health Rep*. Mar-Apr 2013;128 Suppl 1(Suppl 1):5-22. doi:10.1177/00333549131282s102
8. Lindberg L, Santelli J, Desai S. Understanding the Decline in Adolescent Fertility in the United States, 2007-2012. *J Adolesc Health*. Nov 2016;59(5):577-583. doi:10.1016/j.jadohealth.2016.06.024
9. Office of Disease Prevention and Health Promotion. Healthy People 2030: Increase the proportion of adolescents who use birth control the first time they have sex — FP-07. Accessed July 12, 2023, <https://health.gov/healthypeople/objectives-and-data/browse-objectives/family-planning/increase-proportion-adolescents-who-use-birth-control-first-time-they-have-sex-fp-07>
10. World Health Organization. Comprehensive sexuality education. Accessed August 12, 2023, <https://www.who.int/news-room/questions-and-answers/item/comprehensive-sexuality-education>
11. Kohler PK, Manhart LE, Lafferty WE. Abstinence-only and comprehensive sex education and the initiation of sexual activity and teen pregnancy. *J Adolesc Health*. Apr 2008;42(4):344-51. doi:10.1016/j.jadohealth.2007.08.026
12. Oregon Department of Education. Sexuality Education. Accessed August 12, 2023, <https://www.oregon.gov/ode/students-and-family/healthsafety/pages/sexuality-education-resources.aspx#:~:text=Requires%20that%20each%20school%20district,inclusive%2C%20and%20build%20on%20itself.>
13. Oregon Department of Education. K-12 Health Education Draft Standards Accessed August 12, 2023, <https://www.oregon.gov/ode/educator-resources/standards/health/Documents/Oregon%20Health%20Standards%20Public%20Comment%20Version%208.8.2023.pdf>
14. Hatcher RA. *Contraceptive technology*. 21st edition ed. Ayer Company Publishers, Inc.; 2018.
15. Planned Parenthood Federation of America. Birth Control Accessed July 18, 2023, <https://www.plannedparenthood.org/learn/birth-control>
16. Kaunitz AM, Arias R, McClung M. Bone density recovery after depot medroxyprogesterone acetate injectable contraception use. *Contraception*. Feb 2008;77(2):67-76. doi:10.1016/j.contraception.2007.10.005
17. McNicholas C, Swor E, Wan L, Peipert JF. Prolonged use of the etonogestrel implant and levonorgestrel intrauterine device: 2 years beyond Food and Drug Administration-approved duration. *Am J Obstet Gynecol*. Jun 2017;216(6):586.e1-586.e6. doi:10.1016/j.ajog.2017.01.036
18. Apter D. Contraception options: Aspects unique to adolescent and young adult. *Best Pract Res Clin Obstet Gynaecol*. Apr 2018;48:115-127. doi:10.1016/j.bpobgyn.2017.09.010