Prescription Digital Therapeutics For Contraception

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Policy contains: Clue; contraception; Natural Cycles; pregnancy prevention; prescription digital therapeutic.

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Coverage policy

The following prescription digital therapeutics are clinically proven and, therefore, may be medically necessary as a method of contraception, when provided in accordance with plan- or state-specific requirements, and when specific criteria for use are met:

- Natural Cycles™ (version 3.0) (Natural Cycles Nordic AB, in care of Heyer Regulatory Solutions LLC, Amherst, Massachusetts) for female members age 18 years or older (Berglund, 2017; Pearson, 2021a, 2021b).
- Clue Birth Control© (Biowink GmbH, San Francisco, California) for female members ages 18 to 45 years old with predictable 20- to 40-day cycles (i.e., that vary by less than 10 days) and, if applicable, members who have had at least three cycles (four periods) after stopping hormonal birth control or following the most recent pregnancy (Jennings, 2019).

Limitations

There are no absolute contraindications to using prescription digital therapeutics for contraception, but there are conditions for which fertility-awareness methods should be used with caution or delayed until the condition has been corrected. These conditions include: irregular menstrual cycles, breastfeeding, or post abortion; reproductive tract infections and diseases; use of drugs that affect cycle regularity, hormones, or fertility signs; and acute or chronic diseases that elevate body temperature (Curtis, 2016).

Alternative covered services

- Intrauterine devices.
- Progestin-only contraceptives (oral, injection, or implant).
- Combined hormonal contraceptives (oral, patch, or vaginal contraceptive ring).
- Barrier methods (diaphragm, cervical cap, sponge, male condom, female condom, spermicides).
- Female and male sterilization.
- Contraceptive counseling.

Background

Multiple contraceptive options are available. For females, reversible methods include intrauterine devices, hormonal methods, barrier methods, lactational amenorrhea, and fertility-awareness methods (Centers for Disease Control and Prevention, 2024).

Fertility-awareness methods, also referred to as “natural methods,” are based on the ability to identify and avoid the fertile period of the menstrual cycle, favoring intercourse on the unfertile days of the month. Fertility-awareness methods are symptom-based (cervical mucus, basal body temperature, and symptothermal) or calendar-based (e.g., Standard Days Method) and may be used in combination with abstinence or barrier methods during the fertile time. They appeal to women who cannot use or do not want to use hormonal or intrauterine or surgical methods. However, fertility-awareness methods are associated with higher failure rates, and effectiveness will depend on menstrual regularity and correct and consistent use throughout the menstrual cycle (American College of Obstetricians and Gynecologists, 2025; Centers for Disease Control and Prevention, 2023).

Prescription digital therapeutics are a category within digital health technologies that includes software that is evidence-based and authorized and cleared by the U.S. Food and Drug Administration used to treat or manage medical conditions. A prescription digital therapeutic may be used as a stand-alone or adjunct intervention, and is available only by prescription by a licensed clinician (Shafai, 2023).

Two prescription digital therapeutics have been cleared for use in the United States as Class II software applications for patients wishing to use a fertility-awareness method of contraception. Both predict fertile and non-fertile days and provide patient-specific recommendations related to contraception through proprietary algorithms, but they differ in use populations, user input, and technical characteristics:

- Natural Cycles is a mobile-based, stand-alone software application intended for patients 18 years and older. There are no other conditions for approval, but patients who have been on hormonal birth control within 60 days may have a higher risk of becoming pregnant compared to those who have not been on hormonal birth control within the previous 12 months. The application may not be appropriate for patients with underlying medical conditions in whom a pregnancy would be associated with a significant risk to

the mother or the fetus. The end user enters daily basal body temperature; menstruation cycle information (i.e., start date, number of days); and optional ovulation or pregnancy test results. Temperature can be measured using an Apple Watch, a Bluetooth enabled thermometer, or an Ōura Ring (U.S. Food and Drug Administration, 2018, 2023). FDA subsequently cleared two modifications to Natural Cycles. K241006, cleared July 11, 2024, authorized a predetermined change control plan. K250561, cleared March 21, 2025, was a special 510(k) for the subject device, which includes prescription and over-the-counter use. These submissions modified Natural Cycles and did not represent additional contraceptive software applications (U.S. Food and Drug Administration, 2024, 2025).

- Clue Birth Control is a mobile-based software application intended for patients ages 18 to 45 years old with predictable 20- to 40-day cycles (that vary by less than 10 days), who have had at least three cycles (four periods) after stopping hormonal birth control or since the end of a pregnancy. The user enters period start date information to provide predictions of “high risk days” and “low risk days” for becoming pregnant (U.S. Food and Drug Administration, 2021).

The Pearl Index and the life table analysis are methods commonly used to measure contraception efficacy, but there is a lack of agreement on which method to use. The Pearl Index calculates efficacy in terms of how well a method works when used correctly and consistently and the directions for use are followed (perfect use) and how well it works when sometimes used incorrectly or inconsistently (typical use). In clinical trials, it calculates the number of contraceptive failures per 100 woman-years. A lower Pearl Index suggests higher efficacy. However, it assumes a constant failure rate over time, which does not account for user experience and fertility that may change over time, or for participant discontinuation during the entire study duration. As a result, the Pearl Index cannot be used to compare studies of differing lengths (Mauck, 2023).

Often, non-hormonal methods are studied for regulatory approval in trials that are much shorter than one year. While a Pearl Index can be calculated for these studies, it will not reflect a true one-year pregnancy outcome, because the product was not evaluated for that length of time, making comparisons of contraception effectiveness imprecise. Life table analysis is a method of survival analysis that attempts to overcome these limitations. The results are expressed as the likelihood of becoming pregnant within a specific time period, typically a 12- or 13-cycle time period, which allows valid comparisons among different studies extending over different time periods (Mauck, 2023).

Findings

Guidelines

Professional medical organizations consistently identify prescription digital therapeutics for contraception, such as Natural Cycles, as having lower effectiveness rates than standard contraceptive methods, warranting careful patient selection for coverage consideration. The Society of Obstetricians and Gynecologists of Canada (SOGC) reports typical-use pregnancy rates of 7% and perfect-use rates of 2% for Natural Cycles, compared to less than 1% for long-acting reversible contraception (SOGC, 2024). The National Institute for Health and Care Excellence (2021) confirms these effectiveness rates, noting the absence of direct comparative trials against other contraceptive methods. Three of the four expert reviewers recommended against the National Health Service adopting the measure pending further research. The American College of Obstetricians and Gynecologists (2025) documents pregnancy rates of 12 to 24 per 100 women with typical fertility awareness method use, substantially higher than hormonal contraceptives. These effectiveness disparities have direct implications for coverage decisions, as unintended pregnancies result in significant healthcare costs and patient morbidity.

The Centers for Disease Control and Prevention reports that Standard Days Method users must avoid unprotected sexual intercourse on days 8 through 19 of the menstrual cycle and that approximately 13 of 100 users become pregnant during the first year with typical use. Pregnancy risk increases when cycles fall outside the 26- to 32-day range, and the timing of the fertile window can vary substantially even among individuals with regular cycles. The method does not protect against sexually transmitted infections (Curtis, 2024).

Coverage of prescription digital therapeutics for contraception should be limited to specific patient populations where traditional methods are contraindicated or unsuitable, with mandatory counseling requirements to ensure appropriate use. The National Institute for Health and Care Excellence (2021) identifies eligible patients as those preferring non-hormonal methods when other contraceptives are unsuitable or contraindicated. However, the Centers for Disease Control and Prevention (Nguyen, 2024) delineates multiple conditions requiring coverage exclusion or special authorization: teratogenic medication use, irregular cycles, breastfeeding, post-abortion care, reproductive tract infections, drugs affecting cycle regularity, and conditions elevating body temperature. Additionally, these applications require a minimum 3-cycle data collection for optimal accuracy and provide no protection against sexually transmitted diseases, necessitating supplemental coverage for barrier methods in at-risk populations (Nguyen 2024; SOGC, 2024).

Evidence reviews

The evidence presented in Table 1 suggests that prescription digital therapeutics are effective fertility-awareness methods for contraception, provide immediate access to critical fertility information, and encourage correct, consistent use. Variations in study populations and methods used in clinical trials to determine pregnancy failure rates hinders accurate comparisons of these software applications to other fertility-awareness methods or even to each other. Using the data from Peragallo Urrutia (2018) shown in Table 1, Natural Cycles, as discussed in the paragraphs below, appears to compare favorably to the basal body temperature method, and Clue Birth Control seems to compare favorably to calendar-based methods:

Table 1. Comparison of fertility-awareness methods based on pregnancy probabilities using the life table method or Pearl Index, per 100 woman-years

	First-year typical use	First-year perfect use
Standard Days Method	11.2 to 14.1	4.8
Basal Body Temperature Method	9.0 to 9.8	0.4

Source: Peragallo Urrutia (2018).

The evidence of efficacy of the Natural Cycles application consists of large convenience samples from Sweden (Berglund, 2017, n = 22,785; Bull, 2019, n = 16,331), the United Kingdom (Pearson, 2021b, n = 12,247), and the United States (Pearson, 2021a, n = 5,879), all sponsored by the manufacturer. Users who reported a pre-existing medical condition or other factors that could have a potential effect on the length and or variability of their cycles (i.e., polycystic ovary syndrome, endometriosis, hypothyroidism, recent/current pregnancy, current hormonal treatment, or symptoms of menopause) were generally excluded from the analyses. Key demographics of current users were consistent across all three cohorts. The majority of users were of a mean age of 30, of normal body weight, university educated, in stable relationships, and without children. Most used oral contraceptives or condoms as their primary contraceptive prior to using Natural Cycles.

Natural Cycles has a perfect-use Pearl Index of 1.0 to 2.0, a typical-use Pearl Index of 6.1 to 6.9, and a 13-cycle pregnancy rate of 7.1% to 8.3%. User behavior, such as the ability of the user to measure basal body temperature on a regular basis and the ability to abstain from sex or use condoms on fertile days, strongly influenced

application effectiveness (Berglund, 2017; Pearson, 2021a, 2021b). Previous users of intrauterine devices experienced a greatly increased risk of unintended pregnancy on Natural Cycles (Bull, 2019). Approximately 40% to 50% of participants were still using the application at the end of the studies. The main reason for discontinuation was described as “unknown,” but 5% discontinued use due to confirmed pregnancy (Berglund, 2017; Pearson, 2021a, 2021b).

The efficacy of Clue Birth Control was based on the results of the prospective Dynamic Optimal Timing clinical efficacy trial (ClinicalTrials.gov ID NCT02833922), which assessed the same proprietary algorithm as the one used in the Clue software. The study followed 718 U.S. women ages 18 to 39 over a full year (13 cycles), providing a total of 6,616 cycles. Participants had not used hormonal contraception in the previous three cycles, had consistent cycles between 20 and 40 days long with less than 10 days’ variation, and had had at least three menstrual periods following the most recent pregnancy, if applicable. There were 25 unintended pregnancies, including one that occurred during perfect use. Clue had a perfect use Pearl Index of 0.8, a 13-cycle perfect-use failure rate of 1.0% (95% confidence interval 0.9% to 2.9%), and a 13-cycle typical-use failure rate of 5.0% (3.4% to 6.6%). There were no statistical differences between the demographic variables and pregnancy status. In all, 12.8% of participants were lost to follow-up (Jennings, 2019).

Direct comparisons to other fertility-awareness methods or fertility applications designed for contraception are limited. In a cohort of 42,579 users, investigators compared the accuracy of Natural Cycles, the Standard Days Method, and the Rhythm Method for predicting the fertile window, relative to the reference standard of a positive luteinizing hormone test followed by a basal body temperature rise within one to two days. Over a 12-month cycle (16,386 total cycles), the fraction of wrong fertile days was 0.12% allocated by Natural Cycles using basal body temperature only, 0.07% by Natural Cycles using luteinizing hormone and basal body temperature measurement, and 0.93% by the Standard Days Method. Over cycles seven through 12 (9,742 total cycles), the Rhythm Method algorithm allocated a wider fertile window but with a higher fraction of wrong fertile days (0.26%). No contraceptive failure rates were reported for comparison (Kleinschmidt, 2019).

A review of seven studies analyzed the accuracy of five fertility-tracking applications used for contraception or conception: Natural Cycles, Ava Fertility Tracker, Clearblue Connected, Ovia, and the Dynamic Optimal Timing (Dot) application. All predicted fertility status throughout an individual’s menstrual cycle using various proprietary algorithms, biometric data, and self-reported menstrual cycle data, but each varied with respect to intent (conception or contraception), platforms, required data input, and external device requirements. Details of the proprietary algorithms and the population data used to derive the algorithms were not available, making their generalizability to other populations and comparative accuracy difficult to determine (Saugar, 2023).

In 2025, we found two systematic reviews examined digital fertility tracking technologies for family planning. Rabe (2025) analyzed 19 studies focusing on cycle tracking apps for contraception and pregnancy planning, while Bassas (2025) evaluated 16 studies (encompassing over 20,000 participants) that used fertility awareness-based methods enhanced with digital technology. Specifically, Natural Cycles showed a typical-use Pearl Index of 6.2 and a perfect-use Pearl Index of 2.0 (Bassas, 2025), while the Dot app had a typical-use failure rate of 5.0% and a perfect-use failure rate of 1.0% (Bassas, 2025). For conception, studies have found that some apps indicate shorter times to pregnancy in cases of reduced fertility, with the use of any menstrual cycle tracking app associated with a 12-20% increase in fecundability per cycle (Bassas, 2025).

Despite these findings, both reviews highlighted significant limitations. Effectiveness depends heavily on user education, adherence, and accurate interpretation of fertility signals, yet many users lack the necessary eHealth literacy (Rabe & Ehlers, 2025). The quality of existing research did not meet specified quality standards: only three studies in the Rabe and Ehlers (2025) review met sufficient quality standards, with average quality ratings of 0.16 (SD 0.25) for contraception studies and 0.14 (SD 0.33) for pregnancy intention studies (Rabe, 2025). Methodological issues included manufacturer funding, author conflicts of interest, inconsistent study designs,

and reliance on self-reported data (Bassas, 2025; Rabe, 2025). While some apps showed contraceptive safety comparable to the pill, they demanded significantly higher user compliance (Rabe, 2025). No policy changes were warranted.

A systematic review evaluated the effectiveness of mobile applications used for contraception across six cohort studies (n = 62,014), with participant numbers reported across studies rather than representing a confirmed count of unique individuals. Five studies evaluated Natural Cycles and one evaluated Dynamic Optimal Timing; no qualifying study directly evaluated Clue Birth Control. Reported typical-use Pearl Indices ranged from 5.8 to 7.0 pregnancies per 100 woman-years, while perfect-use Pearl Indices ranged from 0.5 to 2.0. Cumulative pregnancy rates ranged from 5.8% to 8.3%. All six studies were rated as poor quality and were funded by the companies that owned the applications. Key limitations included loss to follow-up exceeding 20%, reliance on self-reported exposure and outcome data, inadequate control of confounding variables, and incomplete reporting of contraceptive behavior during fertile days. Because users were instructed to abstain from intercourse or use barrier protection during fertile periods, the reported effectiveness reflects the combined influence of the application and user behavior rather than the application alone. The review concluded that the available evidence is insufficient to establish effectiveness with confidence and that independent randomized and comparative studies are needed (Silva, 2026).

In 2026 we added a systematic review of cycle-tracking mobile applications as contraceptive methods (Silva, 2026), a national clinical guideline addressing contraceptive use and the Standard Days Method (Curtis, 2024), and two FDA regulatory clearance records documenting modifications to Natural Cycles rather than new contraceptive applications (U.S. Food and Drug Administration, 2024; U.S. Food and Drug Administration, 2025). No policy changes were warranted.

References

On July 18, 2026, we searched PubMed and the databases of the Cochrane Library, the U.K. National Health Services Centre for Reviews and Dissemination, the Agency for Healthcare Research and Quality, and the Centers for Medicare & Medicaid Services. Search terms were “menstrual cycle” (MeSH), “natural family planning methods” (MeSH), “mobile applications” (MeSH), “Natural Cycles,” “prescription digital therapeutics,” and “contraception.” We included the best available evidence according to established evidence hierarchies (typically systematic reviews, meta-analyses, and full economic analyses, where available) and professional guidelines based on such evidence and clinical expertise.

American College of Obstetricians and Gynecologists. FAQs. Fertility awareness-based methods of family planning.. Last reviewed February 2025.

Bassas RA, Alharbi MS, Al Harbi SS. Fertility Awareness-Based Methods for Family Planning: A Systematic Review. Cureus. 2025;17(6):e86233. doi:10.7759/cureus.86233

Berglund Scherwitzl E, Lundberg O, Kopp Kallner H, Gemzell Danielsson K, Trussell J, Scherwitzl R. Perfect-use and typical-use pearl index of a contraceptive mobile app. *Contraception*. 2017;96(6):420-425. Doi: 10.1016/j.contraception.2017.08.014.

Bull J, Rowland S, Lundberg O, et al. Typical use effectiveness of Natural Cycles: Postmarket surveillance study investigating the impact of previous contraceptive choice on the risk of unintended pregnancy. *BMJ Open*. 2019;9(3):e026474. Doi: 10.1136/bmjopen-2018-026474.

Centers for Disease Control and Prevention. Classifications for fertility awareness–based methods. https://www.cdc.gov/reproductivehealth/contraception/mmwr/mec/appendixf.html. Last reviewed March 27, 2023.

Centers for Disease Control and Prevention. Contraception. https://www.cdc.gov/reproductive-health/contraception/?CDC_AAref_Val=https://www.cdc.gov/reproductivehealth/contraception/index.htm. Dated May 28, 2024.

ClinicalTrials.gov. Effectiveness and efficacy of Dynamic Optimal Timing, a smart phone app for avoiding pregnancy: An observational study. ClinicalTrials.gov ID NCT02833922. https://www.clinicaltrials.gov/study/NCT02833922. Last update posted February 17, 2020.

Curtis KM, Nguyen AT, Tepper NK, et al. U.S. Selected Practice Recommendations for Contraceptive Use, 2024. MMWR Recomm Rep. 2024;73(3):1-77. https://www.cdc.gov/mmwr/volumes/73/rr/rr7303a1.htm. Published August 8, 2024.

Jennings V, Haile LT, Simmons RG, Spieler J, Shattuck D. Perfect- and typical-use effectiveness of the DOT fertility app over 13 cycles: Results from a prospective contraceptive effectiveness trial. *Eur J Contracept Reprod Health Care*. 2019;24(2):148-153. Doi: 10.1080/13625187.2019.1581164.

Kleinschmidt TK, Bull JR, Lavorini V, et al. Advantages of determining the fertile window with the individualised Natural Cycles algorithm over calendar-based methods. *Eur J Contracept Reprod Health Care*. 2019;24(6):457-463. Doi: 10.1080/13625187.2019.1682544.

Mauck CK, Dart C, Thurman A, Creinin MD. Contraceptive efficacy should primarily be measured using life table pregnancy rates. *Contraception*. 2023;127:110140. Doi: 10.1016/j.contraception.2023.110140.

National Institute for Health and Care Excellence. Natural Cycles for monitoring fertility. Medtech innovation briefing [MIB244]. https://www.nice.org.uk/advice/mib244. Published January 19, 2021.

Nguyen AT, Curtis KM, Tepper NK, et al. U.S. Medical Eligibility Criteria for Contraceptive Use, 2024. Centers for Disease Control and Prevention. https://www.cdc.gov/mmwr/volumes/73/rr/rr7304a1.htm. Published August 8, 2024.

Pearson JT, Chelstowska M, Rowland SP, et al. (2021a) Contraceptive effectiveness of an FDA-cleared birth control app: Results from the Natural Cycles U.S. cohort. *J Womens Health (Larchmt)*. 2021;30(6):782-788. Doi: 10.1089/jwh.2020.8547.

Pearson JT, Chelstowska M, Rowland SP, et al. (2021b) Natural Cycles app: Contraceptive outcomes and demographic analysis of UK users. *Eur J Contracept Reprod Health Care*. 2021;26(2):105-110. Doi: 10.1080/13625187.2020.1867844.

Peragallo Urrutia R, Polis CB, Jensen ET, Greene ME, Kennedy E, Stanford JB. Effectiveness of fertility awareness-based methods for pregnancy prevention: A systematic review. *Obstet Gynecol*. 2018;132(3):591-604. Doi: 10.1097/aog.0000000000002784.

Rabe I, Ehlers JP. Reliability of cycle apps for pregnancy planning and contraception: A systematic review. Mayo Clin Proc Digit Health. 2025;100239. doi:10.1016/j.mcpdig.2025.100239

Saugar EE, Katsoulos S, Kim HS, et al. Factors used by mobile applications to predict female fertility status and their reported effectiveness: A scoping review. *Cureus*. 2023;15(11):e48847. Doi: 10.7759/cureus.48847.

Silva MR, Ferreira-Filho ES, Campanharo FF, et al. Effectiveness of tracking cycle mobile applications as a contraceptive method: a systematic review. Eur J Obstet Gynecol Reprod Biol. 2026;321:115070. doi:10.1016/j.ejogrb.2026.115070.

Society of Obstetricians and Gynecologists of Canada (SOGC). SOGC Position Statement on the Natural Cycles App as a Method of Contraception. Published July 2, 2024. https://sogc.org/common/Uploaded%20files/Position%20Statements/Natural%20Cycles%20App_PositionStmt_EN.pdf U.S. Food and Drug Administration. Clue birth control. Approval letter to BioWink GmbH in care of

Yarmela Pavlovic Partner Manatt, Phelps & Phillips, LLP. https://www.accessdata.fda.gov/cdrh_docs/pdf19/K193330.pdf. Dated February 18, 2021.

U.S. Food and Drug Administration. De novo request for classification of the Natural Cycles. Approval letter to Sheila Hemeon-Heyer, Heyer Regulatory Solutions, LLC. https://www.accessdata.fda.gov/cdrh_docs/pdf17/DEN170052.pdf. Dated August 10, 2018.

U.S. Food and Drug Administration. Natural Cycles. Approval letter to Nordic AB in care of Sheila Hemeon-Heyer, Heyer Regulatory Solutions, LLC. https://www.accessdata.fda.gov/cdrh_docs/pdf23/K231274.pdf. Dated August 24, 2023.

U.S. Food and Drug Administration. Natural Cycles. 510(k) premarket notification K241006. https://www.accessdata.fda.gov/cdrh_docs/pdf24/K241006.pdf. Decision dated July 11, 2024.

U.S. Food and Drug Administration. Natural Cycles. 510(k) premarket notification K250561. https://www.accessdata.fda.gov/cdrh_docs/pdf25/K250561.pdf. Decision dated March 21, 2025.

Policy updates

8/2024: initial review date and clinical policy effective date: 9/2024

8/2025: Policy references updated.
8/2026: Policy references updated.

Related codes

Below are the most commonly submitted codes for the service(s)/item(s) subject to this policy CCP.1545 .This is not an exhaustive list of codes. Providers are expected to consult the appropriate coding manuals and bill accordingly.

Code	Code description
A9293	Fertility cycle (contraception & conception) tracking software application, FDA cleared, per month, includes accessories (e.g., thermometer)