



OVERVIEW

FEMM (Fertility Education & Medical Management) is headquartered in New York City, NY.¹

FEMM is a three-tiered women’s healthcare project. Grounded in revolutionary, peer-reviewed research in women’s endocrinology, developed through its research institute, the Reproductive Health Research Institute (RHRI), in Santiago, Chile, FEMM is designed to teach women and to train teachers and medical providers around the world to serve at the grassroots level.

FEMM trains doctors and nurses to offer targeted reproductive education and medical management solutions within pre-existing clinics. FEMM provides the educational and medical training model, as well as expertise, research, and training support, for providers to maximize the care offered to women in their targeted patient populations.

FEMM Education

The **FEMM Education** program teaches women the link between hormones and health, and how to monitor observable hormonal biomarkers. Once women understand their bodies, they can identify normal or abnormal patterns of reproductive function, and seek medical support as informed participants in their own healthcare. Over time, FEMM can also be used as a form of family planning, per a couple’s desire to achieve or avoid pregnancy, by applying rules to intercourse during the cycle—especially around a woman’s self-identified window of fertility.

The need for hormonal health education

Without knowledge about the hormonal interplay of her cycle, a woman’s ability to make empowered, informed health decisions is hindered. Unfortunately, evidence shows that most women do not understand how their bodies work. They also lack health literacy, or awareness of the behaviors that affect their general and reproductive health over the course of their lives, such as exercise, sleep, weight, and nutrition. Women often experience shame and stigma surrounding menstruation, which also leads to poorer health outcomes. This startling reality evidences the need for the education that FEMM provides. A woman equipped with the knowledge to understand her body is empowered to make the health care and family planning decisions best for her.

FEMM content: Understanding hormonal biomarkers

FEMM details the hormonal activities that occur throughout a woman’s cycle, so that she can observe and understand the signs of her hormonal fluctuations. There are three general phases of the cycle: pre-ovulatory, which begins at menstruation and is marked by low hormonal activi-

¹ For more information about FEMM visit www.femmhealth.org. FEMM’s white paper, “The Case for FEMM,” provides the scientific, legal, and policy foundations for its education and healthcare model.

ty; ovulatory, a time of significant and rapid hormonal change, which is also the time of fertility; and post-ovulatory, when rising progesterone is the dominant hormonal activity. The cycle ends when progesterone drops, leading to the shedding of the uterine lining (menstruation), and the start of a new cycle. The appropriate activity and interplay of these hormones throughout this process is crucial to a woman's health and well-being.

This education series is offered over the course of four sessions, in-person and online, one-on-one or in a group setting. Provision of classes depends on the infrastructure of the clinic into which the program is integrated.

The FEMM Education sessions include:

- **FEMM Intro (30 minutes):** Participants are introduced to FEMM (Fertility Education & Medical Management) as a model for women's reproductive health. A woman's reproductive health is closely tied to the state of her general health and to the delicate interplay of certain hormones within her body. The sufficient production of these hormones can be tracked throughout each cycle, as indicators of both health and fertility. FEMM enables women to become informed participants in their own healthcare.
- **(1) FEMM & Your Health (1 hour):** Participants learn the parts and function of reproductive anatomy, and the physiology of ovulation—understanding the critical role of hormones in the cycle. Hormones from the brain and ovaries affect the health of the reproductive organs and the entire body. Observable biomarkers allow women to identify hormonal changes, key cycle events such as ovulation and other indicators of health and fertility. Participants are taught the method of FEMM charting through observing and recording these biomarkers. The session concludes with charting exercises.
- **(2) FEMM Expert (1.5 hours):** Participants learn to understand the cycle—both its biomarkers and the underlying hormonal activity—as an indicator of their overall health. They are taught the phases of the cycle with an emphasis on the time of ovulation, the dominant hormonal activity in each phase, and what biomarker observations within each phase are necessary for a woman to be considered healthy. Attention is given to the understanding of the cycle as a holistic fertile process, which is fundamental to understanding cycle variations. The session includes analysis of various cycle types, including those of health concern. Exercises, Q&A, and case studies accompany this session.
- **(3) FEMM Family Planning (1.5 hours):** In this session, participants are taught the principles of FEMM Family Planning. The session includes a review of male and female reproductive physiology, the dominant reproductive hormones, and the key stages in and differences between male and female fertility throughout reproductive life. With family planning, the key event in a woman's cycle is ovulation, and so participants learn to relate cycle biomarkers to ovulation and a woman's fertility. Primary biomarkers are estrogenic cervical fluid and the surge of the luteinizing hormone (LH) just prior to ovulation. Participants apply this knowledge to identifying ovulation and fertility in variable cycle types. Exercises, Q&A, and case studies accompany this session.

Independent 3-hour **teenFEMM** and **teenMEN** modules provide a targeted form of this education to middle and high school students with a specific focus on understanding the health-

hormone integration in the body, key physiological changes in puberty in both girls and boys, and the foundation for healthy sexual relationships.

FEMM health applications

Application #1: The importance of monitoring her cycle

Monitoring her cycle allows a girl or woman to understand, maintain, and improve her health. She can learn to identify both regular and irregular activity and hormonal patterns. In fact, often the first sign of an underlying health problem a woman experiences is an abnormality in ovulation followed by irregular cycles. Cycle irregularities are associated with several poor health outcomes, such as coronary heart disease, Type 2 diabetes, and decreased fertility, so it is critical to identify and address irregularities promptly.

Monitoring cycle irregularities can also be a diagnostic tool in determining underlying health problems. FEMM enables a woman to recognize irregularities and present evidence to health care professionals, who then use that evidence to diagnose and treat the underlying problem. This form of monitoring is especially important in pre-pubescent girls and girls entering puberty, as many ovarian dysfunctions develop and manifest during this stage of the reproductive continuum and never spontaneously resolve.

Application #2: Achieving and avoiding pregnancy

Because a woman can get pregnant only in the few days leading up to and the day of ovulation, and because her biomarkers are usually identifiable during this phase of her cycle, she can use her FEMM knowledge either to achieve or to avoid pregnancy.

The importance of FEMM

Informed choice: Making informed health and family planning decisions

Informed choice is a central component of health care and family planning. Informed choice means making a health decision after learning about and considering all the options and information available. Women are often unable to make informed choices about their health and family planning decisions because they lack information about how certain methods work and what effects they might have on their health. FEMM informs women about the mechanism of action of each method, and the way that this relates to her long-term health outcomes.

Integrating the health of families

The hormone-health applications to FEMM impact the integration of healthy practices within an entire family—on the mother, who is tasked with managing her health and fertility for the sake of her spouse and children, and then on those exact children, whose own hormonal development into and beyond puberty can be conditioned by lifestyle and home life as well as hormonal dysfunctions. Where an education in tracking hormonal biomarkers is provided to families, family participation in healthy decision-making increases for individual members of that family, alongside spousal commitment to family planning.

The FEMM Education program also empowers families to prioritize optimal health and life outcomes. In acquiring tools to manage daily health literacy, women within families can observe changes in their body, catch hormonal abnormalities as they arise, and then seek medical care that ensures maximum return to the families from which they come. As these health and fertility questions are settled in a manner ordered and healthy, committed, safe, stable, and healthy marriages can be ensured.

Preventing risky behavior

Due to the development of a girl's cervical ectopy, a layer of protection over her cervix that doesn't fully mature until her mid-twenties, girls between the ages of 15-24 are the most at-risk population in the USA for the acquisition of STDs.² The use of modern hormonal contraceptives delays their cervical maturation, increasing the risk of acquiring an infection. Early sexual debut as well as risky sexual behavior also contribute to increased risks of infection.

In this context, targeted education to teens about the structure of their reproductive systems, as well as the integration of hormonal activity with the entire body to maximize health over a lifetime, lays the foundation for a preventative pedagogy that targets issues such as early sexual debut and sexual violence. When women understand their bodies, as well as how behavioral or medical management choices impact their health and fertility, they acquire the necessary tools to order their experiences and choices in accord with standards for health. When men understand the basis of women's health and fertility, they too can order their choices in accord with standards for health as well as mutual respect. Students acquire a holistic foundation for understanding the benefits of delaying sex or returning to a sexually risk-free status.

FEMM App³

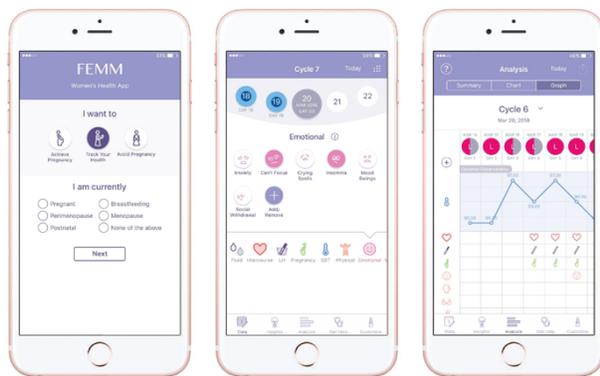


Figure 1

The FEMM app (see figure 1) was designed to help women track their health by observing key biomarkers such as cervical fluid, bleeding, physical symptoms like cramps and acne, and emo-

² Centers for Disease Control & Prevention (CDC), Reported STDs in the United States, 2016, at <https://www.cdc.gov/nchstp/newsroom/docs/factsheets/std-trends-508.pdf>.

³ For more information about the FEMM app, visit <http://femmhealthapp.org/>.

tional symptoms like depression, moodiness, etc. These biomarkers indicate the hormonal interplay that occurs throughout the cycle. The FEMM app can also assist in preventing or achieving pregnancy. Through charting with the FEMM app, women know the average length of their cycle, the quality and length of their bleeding, the point of ovulation at each cycle, their fertility window, and more.

Currently available in English and Spanish, the app can be downloaded for free from the Android and Apple stores. As certain studies indicate that women do not have the tools to identify a scientifically-sound app for health and fertility literacy, the FEMM team continually assesses, updates, and expands the scientific basis and support for its app.

FEMM Medical Management

The **FEMM Medical Management** program offers medical care that diagnoses and treats the underlying causes of ovarian dysfunction, which manifests in symptoms such as cramps, acne, facial hair, migraines, and more; infertility; and menopausal conditions.

Medical protocols draw on the most recent research in women's reproductive endocrinology.⁴ Their diagnostic algorithm accounts for the way in which female reproductive activity evolves over an ovarian continuum, to distinguish between activity that is healthy, given a woman's reproductive stage, or activity that is an indicator of ovarian dysfunction.

The most frequent causes of menstrual irregularities associated with ovulatory dysfunctions are hormonal abnormalities. These can be hypothalamic, pituitary, thyroid, adrenal, ovarian, and metabolic disorders. Often, healthcare providers have focused on regularizing bleeding patterns, without paying attention to ovulation in reproductive-age women. The fact that women have biomarkers that enable them to recognize ovulation, and hence which stage of the ovarian continuum they are in, allows them to evaluate their own health. Accordingly, normal ovulatory activity during reproductive years can be considered a sign of health, because it implies adequate endocrine and gonadal function. Women in conditions such as breastfeeding or pregnancy will also be able to identify their anovulatory state as part of the continuum. Periods of transition from anovulation to regular ovulation, such as those found during puberty and perimenopause, can also be identified as a physiological part of the continuum by women using their biomarkers.

A key sign of an underlying health problem a woman may experience is an abnormality in ovulation followed by irregular cycles or amenorrhea. Indeed, when pregnancy, lactation, or menopause are not the causes, persistent irregularities in the ovulatory cycle can be associated with lifestyle, stress, and endocrine, gynecological, autoimmune, nutritional, genetic, and iatrogenic disorders.

⁴ For a summary of this research, review the FEMM white paper, "The Case for FEMM," on the FEMM website (<https://femmhealth.org/about-us/white-paper/>) as well as up-to-date peer-reviewed research from the RHRI (<https://femmhealth.org/research/publications/>).

When a woman is equipped with the necessary tools to read her chart, as a foundation to personal health literacy, she can seek out medical care proportionate to the dysfunction manifested.

Medical providers trained in the FEMM protocols are equipped to proceed with diagnosis and treatment proportionate to the need. These providers first run a basic hormonal profile (BHP) blood draw on each patient, to evaluate the activity of approximately a dozen key hormones (see figure 2). Where the BHP demands it, physicians return women for more targeted, functional tests to enable a more precise diagnosis. Then, in following the algorithm in the protocols to test against every single possible diagnosis, a provider can determine the originating hormonal disturbance in a woman's body—a diagnosis entirely personalized to her condition. Treatment plans then integrate a three-pronged solution: exercise, diet, and medical care that ranges from immunological support to targeted pharmacological interventions.

In the clinical context, therefore, FEMM aids the provision of the following services:

Figure 2

- preventative and core health education, which enables girls and women to recognize the health of their body and to order health-related decisions accordingly, per the sessions outlined above;
- family planning education, which enables couples to postpone, achieve, and facilitate the spacing of their children, per the sessions outlined above;
- medical care and protocols targeted to the diagnosis of treatment of underlying ovarian dysfunctions, aimed at both re-integrating hormonal activity and resolving symptoms (i.e., facial hair, acne, painful and irregular cycles, patterns of infertility and miscarriage, etc.), per the protocols and procedures outlined above;
- pregnancy tests;
- health screenings and exams, including for the diagnosis and treatment of STDs, breast cancer, and cervical cancer; and
- lab tests.

All FEMM Education and Medical Management services are reimbursable with the correct insurance codes:

- CBC with diff: R53.83 (fatigue), N92.0 (menorrhagia)
- CMP: R53.83 (fatigue)

- TSH: Z13.29 (thyroid disorder), R53.83 (fatigue), N92.0 (menorrhagia)
- Vitamin D 25-OH: E55.9 (vitamin D deficiency)
- Lipid panel: Z13.220 (screening for lipid disorders)
- FSH: N91.2 (amenorrhea), N92.6 (irregular menses)
- Prolactin: N64.3 (galactorrhea)
- Cortisol: R53.83 (fatigue)
- DHEA-S: L68 (hirsutism), L70 (acne), E28.1 (androgen excess)
- Total testosterone: L68 (hirsutism), L70 (acne), E28.1 (androgen excess)
- SHBG: Z13.29 (thyroid disorder), R73.09 (abnormal glucose)
- 17 OH progesterone: L70 (acne)
- OGTTI: R73.09 (abnormal glucose), E28.2 (PCOS)
- Progesterone: N91.2 (amenorrhea)
- Estradiol: E28.2 (PCOS)
- Sexual & reproductive health education (FEMM Education, 1 hour): 99404

Where these services are integrated into clinical settings complying with the Title X statute, as well as the Title X program regulations, patients from low-income families—with incomes that fall at or below 100% of the current Federal Poverty Guidelines (Federal Poverty Level, FPL)—will not be charged for them except where third parties are authorized or legally obligated to pay.