



# conceivable

a modern conception

## Scope of Problem

**Infertility** is defined as the inability to conceive after one year of unprotected intercourse (or after six months if the woman is over 35) or the inability to carry a viable pregnancy to live birth. As of 2010, the last year for which data is available, the Center for Disease Control estimates that that about 6.7 million American women suffer from infertility. Additionally, about 12% of US males ages 25-44 (roughly 4 million men) experience some form of infertility.<sup>1</sup> While 7.4 million women (nearly 12% of US women) have used infertility services in their lifetime, insurance industry research estimates that only 44% of infertile women have sought medical assistance for difficulty conceiving. Thus, one can assume that the actual number of women affected by infertility or difficulty conceiving is much higher.<sup>2,3</sup>

Well known infertility treatments like in vitro fertilization (IVF) and intrauterine insemination (IUI) can be cost-prohibitive. IVF costs an average of \$12,000-\$15,000 per cycle, and generally two or more cycles are necessary to achieve pregnancy. The cost of medications associated with these procedures may add as much as \$3,000-\$5,000 more per cycle. As such, assisted reproductive technologies, such as IVF, are used in less than than 3% of infertility cases.<sup>4</sup> Despite high emotional and financial costs, and invasive and time intensive treatment regimens, current IVF success rates in the US remain low (about 30% across all cycles in 2012 – see table), but especially for women over 35 years of age.<sup>5</sup>

IVF Live Birth Rates Per Cycle by Age, 2012<sup>5</sup>

Age	% of cycles resulting in live births
<35	40.7
35-37	31.3
38-40	22.2
41-42	11.8
>42	3.9

Furthermore, only about 25% of US insurance plans cover infertility services.<sup>3</sup> Coverage for these services is not mandated by the majority of US states, or by the Affordable Care Act, placing the financial burden of these treatments solely on the shoulders of couples using these technologies.

## The Conceivable Solution

Based on over 15 years of clinical practice and endorsed by leading fertility specialists, the Conceivable approach has helped thousands of diagnosed infertile women change the course of their fertility, and achieve their dream of parenthood.

Your ability to successfully conceive and carry a pregnancy to term changes over time. In this respect, fertility is a continuum with many factors that may influence your fertility at any given point. Some of those factors are out of your control (blocked



fallopian tubes, for instance), but many are completely in your control. By understanding where you fall on the fertility continuum and why you're there, you can take action to increase your chances of conception. Conceivable empowers you with the knowledge and resources you need to seize your best opportunity to conceive.

Conceivable gives you more control over when and how you conceive and carry a pregnancy to a successful delivery. While Conceivable is not a replacement for your doctor or fertility specialist and does not diagnose, prevent, treat, or cure any disease. Our program empowers you to learn more about your menstrual cycle and natural ability to conceive. No treatment method is guaranteed, but in our experience women that understand the process of conception and pregnancy can take action to improve the likelihood of achieving a successful pregnancy.

Conceivable helps women address modifiable factors that can affect their ability to conceive. ***Over 15 years, the Conceivable Program has helped more than 7,000 couples to regulate menstrual function and optimize lifestyle choices for the highest probability of conception.***

The Conceivable program helps address three primary areas:

- **Menstrual cycle irregularity**
- **Modifiable lifestyle factors**
- **Mindfulness and stress management**

## A Conceivable Cycle

Menstrual cycle characteristics, like cycle regularity, cycle length, the amount and quality of menstrual blood, and other symptoms such as PMS and cramping are significantly indicative of your fertile potential and odds of conceiving on a cycle-to-cycle basis. What does peer-reviewed medical research say about a Conceivable cycle? It should be:

**Regular:** Regular cycles increase your likelihood of conception and make timing ovulation and intercourse more predict-

able. On average, women with irregular cycles had only ¼ the chance of getting pregnant each month as those with more normal cycles. <sup>6</sup>

**About 28 days long:** A cycle with optimal length allows plenty of time for the egg to mature properly and supports a healthy window for implantation. Both shorter and longer cycles have been associated with reduced fertility, in some cases decreasing the chance of delivery by up to 50%. <sup>7</sup>

- Short cycles are especially detrimental to conception. In a series of studies from 1992 to 2003, researchers found that early ovulation resulted in a significant reduction (~50-75%) in clinical and viable pregnancy rates. However, when ovulation was regulated, pregnancy rates returned to normal levels. <sup>8,9</sup>

**A 4-day period:** The length of your period is good indicator of the health of your uterine lining which allows for the implantation and nourishment of a fertilized embryo. Insufficient bleeding or bleeding that lasts too long are both associated with a decreased chance to conceive each month, in some cases cutting your chance to conceive by half. <sup>10</sup>

**Sufficient bleeding:** It's normal to soak a pad or tampon about every four hours during your heaviest menstrual bleeding. Healthy menstrual bleeding is the reflection of a healthy uterine lining. Menstrual bleeding that is scanty, or too much bleeding, indicate lower chances of conception each cycle. <sup>11</sup>

**Free of uncomfortable symptoms:** PMS, pain, cramping, and clotting are more than just uncomfortable symptoms around your period, they may indicate larger problems like polyps, fibroids, endometriosis, or hormonal imbalances. In addition to being a drag, infertile women report these types of symptoms in much higher numbers than their fertile counterparts. <sup>12</sup>

***For more than 7,000 couples, the Conceivable Program has helped to optimize menstrual function for the highest probability of conception.***



## A Conceivable Life

Lifestyle matters when it comes to getting pregnant. A comprehensive, modern fertility program needs to be about more than just when to have sex. For those struggling to get pregnant, continuing to try methods that have been previously unsuccessful can be a frustrating exercise in futility. By changing your behaviors, you give yourself a better chance at changing your outcome. That is a good thing.

**LIFESTYLE MATTERS** A growing body of medical literature suggests that what you eat and drink, your weight, how much you exercise, your daily stress levels, your use of caffeine, tobacco, and alcohol, and your personal environment can all affect not only your ability to conceive, but the health of future children.<sup>13</sup>

**DIET** Conceivable meal plans and recipes are constructed on a whole-food, plant-based diet that studies have demonstrated time and again not only to have a beneficial effect on overall health, but a direct effect on a woman's fertility — particularly on regulating ovulation.<sup>14,15,16</sup> Conceivable creates customized menus that help users to eat a diet rich in vegetables by setting small, attainable daily goals.

- **Why plant-based?** In a large-scale study of women who had difficulty conceiving, Harvard scientists found that increasing the intake of animal protein, even by as little as one serving a day, resulted in a 32% higher likelihood of ovulatory infertility. Furthermore, researchers found that women who consumed plant proteins (instead of animal protein) for as little as 5% of their total daily calories had a 50% decrease in their risk of ovulatory infertility.<sup>14</sup>
- **Whole foods, whole fertility.** A low glycemic load, such as that created by low-carbohydrate and whole grain diets, appears to protect fertility. Women with high glycemic loads, the result of a diet high in processed and refined foods, have been demonstrated in at least one study to have nearly twice the risk of ovulatory infertility as women with low glycemic loads.<sup>17</sup>

- **Healthy fats.** Conceivable meal plans also helps women choose healthy, fertility-friendly fats over unhealthy ones. In one recent study, every 2% increase in calories consumed via unhealthy trans-fats increased the risk of ovulatory infertility by more than 70%. This is especially true when these trans-fats replaced fertility-friendly monounsaturated fats.<sup>15</sup>

That means that as little as one teaspoon of unhealthy fat can significantly impact your fertility.

**HYDRATION** Every day it's up to us to take in enough fluids to replace what is lost through breathing, sweat, and urination. We can find these fluids in the foods we eat and the beverages we drink. Not drinking enough water — or drinking too many unhealthy beverages like sodas, coffee, or alcohol — can lead to dehydration and negative effects upon your fertility.

- **Dehydration can affect both the fertile body and mind.** Even mild levels of dehydration have been shown to negatively affect cognitive problem-solving, mood, and attentiveness, increase sensitivity to pain, as well as cause constipation, headaches, and muscle cramps.<sup>18,19,20,21,22</sup>
- **Healthier cervical fluid.** The more hydrated your cervical mucus is, the easier it is for sperm through it.<sup>23</sup> Although a variety of factors determine cervical fluid viscosity, Lee *et al.* have found that sperm had the highest difficulty traveling through thick cervical mucus with low water content,<sup>24</sup> regardless of when they are introduced. In other words, staying hydrated can improve the sperms' ability to effectively fertilize the egg.
- **Coffee:** Women who consumed more than 100 mg of caffeine a day — the equivalent of 1 cup of premium coffee — were more likely to experience difficulty conceiving and higher rates of miscarriage during pregnancy, though the mechanism is still unknown.<sup>25,26,27</sup>
- **Sodas and Soft Drinks:** According to the Harvard Nurses' Health Study, women who consumed 2 or more sodas a day were up to 50% more likely to experience ovulatory infertility than women who drank less than 1 soda a week.<sup>25</sup>



- **Alcoholic Drinks:** Consumption of alcohol can have various effects on fertility including: increased time to pregnancy,<sup>15</sup> decreased probability of conception (by more than 50%),<sup>28</sup> abnormal blastocyst (embryo) development,<sup>29</sup> and decreased embryo implantation rate, thus increasing both the risks of spontaneous abortion and of fetal death.<sup>30</sup>
- A large-scale study in Stockholm, Sweden found that women who consumed more than 2 alcoholic drinks per day were on average 60% more likely to be infertile than those who did not.<sup>31</sup>
- Researchers believe that many of alcohol's detrimental effects on fertility are due to hormonal fluctuations including increases in estrogen levels that lower concentrations of follicle-stimulating hormone (FSH), and suppress ovulation as a whole,<sup>22</sup> though other mechanisms may remain unknown.
- According to the Surgeon General, women should not drink alcoholic beverages during pregnancy because of the risk of birth defects.

**SLEEP** Conceivable not only helps you track your sleep habits, but delivers insightful and proven resources to help users improve their natural sleep. If sleep is interrupted or insufficient, hormone function is disturbed, affecting both your fertility and your ability to function the next day.

- **Sleep, Stress, and Fertility.** People experiencing *either* acute or prolonged sleep deprivation experience higher levels of the stress and elevated levels of associated stress hormones, such as cortisol, the following day.<sup>32</sup> Elevated cortisol relates to negative feelings of stress throughout the day and can reduce the chances of successful embryo implantation.<sup>33</sup> Elevated cortisol has also been associated with higher levels of early pregnancy loss. According to a 2009 study published by the National Academy of Sciences, pregnancies exposed to higher levels of cortisol were 2.7 times more likely to end in miscarriage.<sup>34</sup>
- **Sleep is essential for hormone regulation.** Sleeping less than 7-8 hours per night has been associated with de-

pressed leptin levels throughout the following day.<sup>35</sup> Leptin is important because it influences important hormones for regulating the menstrual cycle.<sup>36</sup> Furthermore, disturbances in leptin concentrations have been linked with poor egg quality.<sup>37</sup>

**A healthy, fertile weight.** Excess body weight can have significant effects on health, increasing risks of cardiovascular disease, diabetes, and even infertility/subfertility.<sup>38</sup>

- It takes longer for obese women to become pregnant.<sup>39</sup> Additionally, they experience higher rates of recurrent and early miscarriages than women of normal body weight.<sup>40</sup>
- A lower ongoing pregnancy rate — the carrying of a fetus to term — of 38.3% per cycle was found in overweight women compared to 45.5% per cycle in non-overweight women.<sup>16</sup>
- The negative effects of obesity on female fertility have been shown to be reversible. Clark *et al.* found that after losing an average of 10.2 kg (22.5 lb) of body weight, 90% of previously anovulatory obese women began ovulating again.<sup>16</sup> In other words, when obese women lost weight, their cycles began to return to normal.

## EXERCISE

- Anywhere between 1 to 5 hours of moderate exercise per week has been significantly associated with an 18% average increase in women's ability to become pregnant regardless of their initial weight, though overweight and obese women showed more benefits.<sup>41</sup>
- However, over-exercising has also been linked to infertility. Lean women who exercised at high intensity 5 or more days a week were shown to be 2.3 times more likely to develop fertility difficulties than those who did not.<sup>42</sup>

Conceivable combs the most recent research to build a lifestyle program just for you, based on your largest opportunities for improvement. Our program of small, simple steps makes it easy for you to give yourself the best chance of conceiving, each and every month.



## A Conceivable Mind

Women with an infertility diagnosis often have higher levels of stress, anxiety, and depressive symptoms compared to fertile women. These symptoms are not to be taken lightly; women experiencing these symptoms can benefit from counseling or therapy.<sup>43</sup>

- Multiple studies have shown how unregulated stress and anxiety may be detrimental to fertility. For instance:
  - The presence of stress has been demonstrated to significantly reduce the probability of conception during every day of the fertile window.<sup>44</sup>
  - Fertilization rates of eggs decreased as stress levels increased.<sup>27</sup>
  - Higher levels of mental stress are associated with a longer time-to-pregnancy, increasing the risk of infertility.<sup>45</sup>
  - While high levels of stress and anxiety have been correlated with increased chances of stillbirth, maintaining positive moods and outlooks have been correlated with increased chances of delivering a live baby.<sup>46</sup>
- Engert *et al.* have illustrated a fundamental link between thought patterns and the experience of stress levels. Understanding the mechanisms governing this mind-body association may have important implications for understanding and counteracting the high incidence of stress-related disorders.<sup>47</sup> Evidence indicates, though, that positive mind/body activities have been found to yield improvements in cortisol levels.<sup>29</sup>
- Increasing mindfulness and acceptance skills, as well as cognitive detachment from thoughts and feelings, seem to help women process these negative inner states in new ways, decreasing their entanglement with them and thus their psychological distress. Data suggest that a Mindfulness-Based Program for Infertility is an effective psychological intervention for women experiencing infertility.<sup>48</sup>

## Why Conceivable

Conceivable has created an modern, integrative program to help women identify and address underlying fertility factors that may be preventing them from conceiving or carrying a baby to term.

The Conceivable program addresses 3 key areas that are scientifically proven to affect your ability to get and stay pregnant: your menstrual cycle, your lifestyle, and your ability to respond to stress.

By capturing data about these key fertility indicators, Conceivable teaches you how your lifestyle choices affect your ability to conceive, and empowers you to take daily action to improve your chances of getting pregnant.

Based on the data you share, our Virtual Health Advisor, available as an app for your iPhone, creates a personalized program that can improve your chances for success.

As you take small steps to improve your fertility, our intelligent program continues to adapt and changes with you.

So, take your first step right now. Download the app and take our assessment to see if Conceivable can give you a better chance at your dream of parenthood. By answering five simple questions about your menstrual cycle, we can learn a tremendous amount about why you're having trouble, then we can start making progress together.

## Conceivable Formulas

One key aspect of the Conceivable program is our proprietary herbal supplements. Refined from traditional formulas by recognized experts in herbology and infertility care, our all natural formulas have helped thousands of women improve their natural fertility. Each formula is specifically tailored to address unique underlying health factors that contribute to infertility, like irregular BBT, weak menstrual cycles, irregular ovulation, and painful periods.



Chinese herbal medicine (CHM) has been used for 1,000's of to regulate menstruation and improve fertility. Now, new interest from research scientists is just beginning to quantify the effect of these supplements on both female and male fertility.

- A 2015 study from the National Institute of Integrative Medicine of Australia describes a meta-analysis of 40 randomized control trials involving over 4,247 women with infertility. Their review "suggests that management of female infertility with Chinese herbal medicine can improve pregnancy rates 2-fold within a 3-6 month period compared with Western medical fertility drug therapy. In addition, fertility indicators such as ovulation rates, cervical mucus score, biphasic basal body temperature, and appropriate thickness of the endometrial lining were positively influenced by CHM therapy, indicating an ameliorating physiological effect conducive for a viable pregnancy.<sup>49</sup>
- A recent review of current medical literature carried out by researchers in Taiwan noted "traditional Chinese medicine could regulate the gonadotropin-releasing hormone to induce ovulation and improve the uterus blood flow and menstrual changes of endometrium. In addition, it also has impacts on patients with infertility resulting from polycystic ovarian syndrome, anxiety, stress and immunological disorders." Their review concludes "Integrating the principles and knowledge from well characterized approaches and quality control of both traditional Chinese medicine and Western medical approaches should become a trend in existing clinical practice and serve as a better methodology for treating infertility.<sup>50</sup>
- Published in 2012, a systematic review of 15 studies accounting for over 1,600 patients revealed that CHM significantly increased pregnancy rate, ovulation rate, cervical mucus scores, and reduced the miscarriage rate of women suffering from anovulation when compared to the common medication clomiphene (clomid). Based on their evidence, the authors concluded that CHM is effective for treating anovulation, but noted that more trials are needed to study the effectiveness of CHM for infertility.<sup>51</sup>
- Another recent review (2013), found that using CHM in combination with IVF resulted in significant increases in clinical pregnancy rate and ongoing pregnancy rates. However, authors found that many studies had a high risk of bias and recommended further research.<sup>52</sup>
- In a review of CHM for the treatment of endometriosis related pain, the well regarded Cochrane Review found that CHM performed as well or better than several traditional drug treatments. Again, researchers recommended that more research was necessary to accurately assess the use of CHM in treating endometriosis.<sup>53</sup>



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