Infertility:
the hidden causes

how to overcome them naturally

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Introduction

One in six couples struggles with infertility. Among women over the age of 35, one in three experience difficulties conceiving. Fertility problems are escalating and it's not just women in their late 30s that are affected. Infertility is a sign that something is not right with you or your partner's health. A healthy body is a fertile body. Our bodies are cleverly designed to reproduce, and when that doesn't happen, there is always an explanation. No organ system in your body operates in isolation.

The health of your reproductive system is enormously influenced by your immune system, your digestive system, your liver, your thyroid gland and your emotional state, just to name a few. Mother Nature is wise, and if there are areas of your body that are not in optimum health, it is not in your interest to become pregnant. Pregnancy is an enormous stress on a woman's body and your body needs to be in optimal health or very close to it in order to achieve a healthy pregnancy and healthy baby.

Of course, you may know several unhealthy couples, with terrible diets who have had problem free pregnancies and healthy children. These people will always exist, just like heavy drinkers and chain smokers who die peacefully in their sleep in their 90s! These people are the lucky few who are the exception to the rule. Our aim in writing this book is not just to get you pregnant, although this book will greatly increase your chances, but it is also designed to optimize your chances of a healthy, problem free pregnancy and healthy children.

Being diagnosed with infertility is extremely distressing and it may leave you feeling confused and hopeless. We have written this book to educate you about the dozens of seemingly unrelated and often overlooked factors that may be compromising your fertility. Knowledge is power, and the more you understand about your body, the better able you will be to make decisions. The use of IVF and other assisted reproductive technologies has skyrocketed in recent decades. Currently one percent of all children born in the USA are conceived through the use of these technologies.

While it's wonderful that IVF is available and can help many couples achieve their dream of having a family, we believe the technology is very over used and not without risks. IVF was originally designed to overcome plumbing problems; basically where tubal problems prevented the egg and sperm from being able to join. However, these days it is used for any and every case of infertility, often without properly investigating the underlying cause of the problem. This is sad because these causes are often easily overcome as you will learn in this book. Typically your doctor will organise a handful of blood tests, perhaps a pelvic ultrasound and sometimes other tests.

If everything comes back normal, you will probably be labeled with unexplained infertility. But does that really mean your infertility is unexplained, or just that your doctor has failed to find an explanation? And is that a justified reason to begin the expensive and emotional journey of IVF? What if your thyroid gland is responsible for your inability to conceive or causing you to miscarry? What if a vitamin D deficiency is preventing you from ovulating? Or perhaps your allergies are clogging your fallopian tubes with mucus, thus preventing your partner's sperm from joining your egg?.

Don't you think it's essential to rule out every known possible and treatable cause of infertility before resorting to IVF? Male infertility is rising just as quickly as female infertility. Your partner may have a low sperm count and high levels of abnormal sperm. You probably haven't been offered a lot of solutions to correct this; you may even have been told it's genetic and nothing can be done, so IVF is your only option. Sperm counts in the average healthy man have more than halved in the last 50 years; so much so that one in 25 men is now considered infertile.

The average man today is lucky if 15 percent of the sperm he produces have a normal shape. Such rapid and dramatic drops in sperm quality and quantity cannot be explained by genes. Sperm are more susceptible to harm caused by environmental chemicals and nutrient deficiencies than eggs, and we will explain the most effective ways to boost male fertility. In this book we cover the common and obvious causes of infertility, such as polycystic ovarian syndrome and endometriosis, as well as the subtle, often overlooked causes of infertility.

It's a sad fact that scientists know more about how diet affects fertility in livestock animals than the average doctor knows about diet and fertility in humans. We have spent several years researching the topics in this book and sincerely hope the information contained within will help solve the infertility puzzle for you. The healthier both you and your partner are, the better quality your egg and sperm will be. The genetic material inside the egg and sperm form the basis of your child's lifelong health. By optimizing the health of you, the parents, we hope to create a healthier future generation.

1. How common is infertility and what causes it?

Infertility is an increasingly common problem in the USA; it affects one in six couples. The definition of infertility is an inability for a couple to conceive after 12 months of unprotected intercourse, or the inability to carry a pregnancy to a live birth. [1]. If a woman is 35 years of age or older, the couple is considered infertile if they have been trying to conceive for six months or longer. Infertility is an escalating problem worldwide; the World Health

Organization estimates that 80 million people in the world are infertile.

Infertility is not always caused by a problem with a woman; male infertility is becoming increasingly common. It is estimated that 40 percent of infertility cases are due to factors in the woman; 40 to 50 percent are due to male factors, and 15 to 20 percent of cases are due to factors in both partners. Women over the age of 35 are twice as likely to suffer with infertility as younger women. A number of factors can be responsible for infertility.

A couple may be affected by one of these factors, or by a combination of them. The most common causes of male and female infertility are listed in the table below. Each of the causes will be explained fully later in this book, along with our recommendations for overcoming them. When treating infertility we need to look beyond the reproductive tract; we need to look at the entire body. In many cases health problems that you think have nothing to do with your reproductive tract are in fact responsible for your infertility.

Female causes of infertility

- Ovulation disorders
- Polycystic ovarian syndrome
- Tubal problems * Endometriosis
- Premature menopause * Infections
- Hormonal problems
- Repeated miscarriage
- Immune system and blood clotting disorders
- Uterine fibroids and polyps
- Exposure to chemicals
- Poor nutrition
- Age
- Stress

Male causes of infertility

- Low sperm count or abnormal sperm
- Tubal problems
- Exposure to excessive heat
- Exposure to chemicals
- Hormonal problems
- Testicular problems
- Functional problems, including erectile dysfunction and retrograde ejaculation
- Immune system disorders

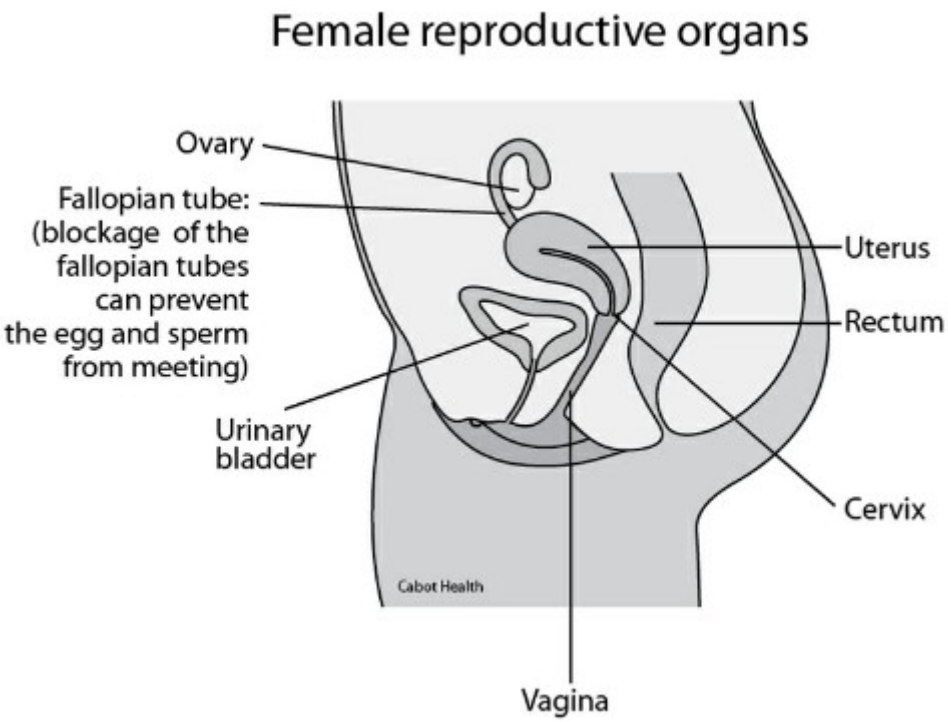
- Infections
- Poor nutrition
- Age

In up to 20 percent of couples medical tests cannot determine a concrete cause for infertility and it is deemed "unexplained".

2. The female reproductive system explained

Before we explain the causes and treatment of infertility in great detail, we will explain the basics of the reproductive system and conception so that you are familiar with various terms. Conception occurs when an egg from a woman is fertilized by a sperm from a man. Eggs are referred to as ova and they are made in the ovaries. Sperm are produced in the testicles. Ovaries and testicles are also referred to as gonads and they produce sex hormones.

The female reproductive system



The two ovaries are roughly the size of almonds and they produce ova (eggs) as well as the hormones estrogen and progesterone. We say the ovaries produce eggs, but to be more specific, the eggs mature and ripen inside the ovaries. The ovaries contain ovarian follicles, which is where eggs develop. The eggs develop inside the ovaries while a woman is a fetus inside her mother's uterus. When a baby girl is born, she already has approximately two million eggs.

This means the quality of the eggs inside your ovaries is dependent on your mother's diet and lifestyle while she was pregnant with you. Throughout life,

many ovarian follicles break down and get reabsorbed by the body, so by the time a girl reaches puberty and her menstrual cycle begins; only approximately 400, 000 ovarian follicles are left to develop into mature eggs. The ovaries are held in place by ligaments that connect them to the uterus and pelvis. The uterus (womb) is a pear shaped organ that is the size of a fist, but stretches when a woman is pregnant. The thick wall of the uterus is made of three layers. The inner lining of the uterus is called the endometrium. The endometrium is shed during menstruation.

When a woman becomes pregnant, the endometrium thickens and is filled with blood vessels that eventually develop into the placenta. The deeper layer of the uterus contains powerful muscles that contract during labor to push the baby down the birth canal (vagina). The outermost layer of the uterus consists of tissue that helps to hold it in place in the pelvis. The lower third of the uterus is called the cervix. The cervix extends down to the vagina. The fallopian tubes (also called oviducts) are approximately 10 centimeters long and they connect the ovaries to the uterus.

The fallopian tubes have finger-like projections on their ends at the ovaries. When an egg is released by an ovary, the finger-like projections catch it and transport it down the fallopian tube and to the uterus. It takes an egg approximately five days to travel from the ovary to the uterus. Fertilization occurs when an egg meets a sperm during its journey down the fallopian tube. An egg only lives for approximately 24 hours after it leaves an ovary, therefore fertilization usually occurs in the upper third portion of a fallopian tube.

The female menstrual cycle

The menstrual cycle is divided into two phases: the follicular phase and the luteal phase. The follicular phase begins on the first day of menstruation and ends at ovulation. The luteal phase begins at ovulation and ends when menstrual bleeding begins.

The follicular phase

The levels of estrogen and progesterone in a woman's body are at their lowest just before a menstrual period begins. This causes two things to happen; firstly the lining of the uterus starts to shed. This causes menstrual bleeding. If you are counting the days of your cycle, day one is the first day bleeding begins. The other thing that happens is the pituitary gland in the brain begins to increase its production of the hormone called FSH (Follicle Stimulating Hormone).

FSH stimulates ovarian follicles (eggs in their sacs) to begin maturing in the

ovaries. FSH causes between 10 and 20 ovarian follicles to start maturing, but only one (occasionally two) will mature fully. As the ovarian follicles grow and mature, they produce increasing amounts of estrogen, which stimulates the uterine lining to grow and thicken, in preparation for fertilization. Estrogen also causes the cervical mucus to develop a thinner consistency, aiding the passage of sperm through the cervix. The follicular phase of menstruation typically lasts between 10 and 14 days, but it can vary enormously in length. It gets shorter as a woman approaches menopause.

Ovulation

When the estrogen produced by the ovarian follicles reaches a high enough level, it triggers the pituitary gland in the brain to release a surge of LH (Luteinizing Hormone). This causes the most mature follicle inside the ovary to burst open and release its egg into the fallopian tube. That is ovulation and it usually occurs 14 days before the next menstrual period. The few days before ovulation are considered a woman's most fertile time. This is because sperm typically survive for three to four days inside a woman's body (but can sometimes survive for up to seven days).

If a woman has sexual intercourse up to seven days before she ovulates, it is possible for the sperm to still be alive inside her when she ovulates, leading to fertilization. A woman is still considered fertile one or two days after ovulation because the egg typically lives for 24 hours after ovulation. From a few days after she has ovulated, up to her next menstrual bleed, a woman is considered not fertile.

The luteal phase

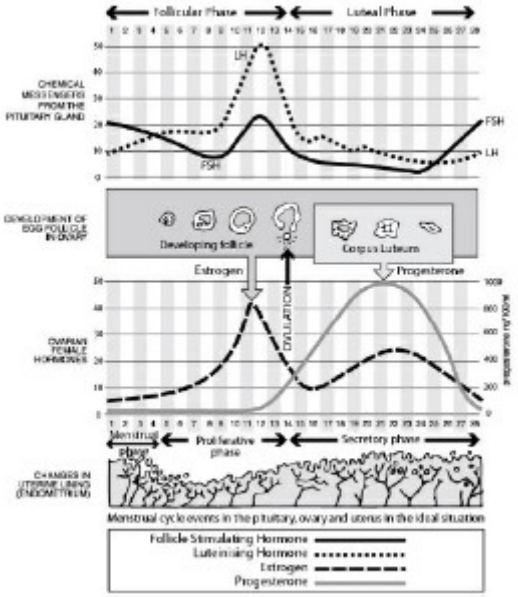
The time from ovulation until the next menstrual period is the luteal phase. This phase usually lasts between 12 and 16 days. The luteal phase tends to be more constant than the follicular phase; so whether you have a long, normal or short cycle, the luteal phase generally remains between 12 and 16 days long. After the egg has been released at ovulation, the empty follicle changes structure and becomes known as the corpus luteum (meaning white body). The corpus luteum produces progesterone, and it continues to produce smaller amounts of estrogen.

Progesterone causes the lining of the uterus to produce nourishing fluids, just in case the egg becomes fertilized and implants itself in the endometrium (lining of the uterus). If fertilization does occur, the corpus luteum continues to produce progesterone for approximately the first eight weeks of pregnancy; after that time the placenta develops and it takes over the task of progesterone production. Adequate progesterone production is vitally important in the early stages of pregnancy, and lack of progesterone is a

common cause of early miscarriage, (as well as inability to conceive in the first place).

If fertilization does not occur, the empty follicle (corpus luteum) starts to break down and eventually stops producing hormones. When the corpus luteum stops all hormone production, the lining of the uterus is shed and that heralds the beginning of another menstrual bleed.

Determining your most fertile time



The ideal time for conception

Counting the days of your menstrual cycle can help you determine how regular your cycles are and the day you are likely to ovulate. This will help you determine when you are most fertile, and therefore when sexual intercourse is most likely to result in conception. A normal menstrual cycle is between 23 and 35 days. Cycles that are shorter or longer than this can be caused by a variety of factors, but they indicate that ovulation is probably not occurring. If there is no ovulation, there can obviously not be any fertilization. According to Chanley Small, Ph.D, researcher and reproductive epidemiologist at Emory University in the USA, women with 30 to 31 day cycles are the most fertile.

Women with cycles shorter than 28 days are more likely to produce eggs of poorer quality. To determine how long your cycle is, use the following method. Day one of your cycle is the day menstrual bleeding begins. Continue counting until the day before your next menstrual period begins. If your period began on 1st March and your next period started on 29th March, you have a 28 day cycle. Plot your menstrual period on a calendar for at least 3 months

to get an average length for your cycle. Your cycle can vary in length slightly from month to month and that is usually not a problem.

In a 28 day cycle ovulation usually occurs on day 14. Women usually ovulate approximately 14 days before the start of menstrual bleeding. Your most fertile time is during the two days before ovulation and one day afterwards. All women are different and it is very imprecise to rely on the 14 day rule to indicate when you have ovulated. Luckily your body gives you several signs to indicate that ovulation has occurred. Getting familiar with these signs, and tracking them for several months can help you become in tune with your menstrual cycle, and optimize your chance of conception. Changes in your cervical mucus and basal body temperature are useful indicators of ovulation.

Cervical mucus

The quantity and type of mucus your cervix makes varies during your menstrual cycle. Paying attention to your mucus is an easy and fairly reliable way to determine where you are in your cycle. At the beginning of your menstrual cycle, estrogen levels are low, therefore very little mucus is produced. As you get closer to ovulation, mucus production increases; mucus may be sticky, white, cloudy or milky. This indicates you are approaching your fertile phase. Just before ovulation, mucus becomes slippery, stretchy and clear; this is commonly referred to as raw egg white mucus, because that is what it resembles.

The presence of this type of mucus signals the most fertile time in a woman's cycle. The egg white-type mucus facilitates the travel of sperm from the vagina, through the cervix, into the uterus and then fallopian tubes in search of an egg. Ovulation occurs one or two days after the development of this type of mucus. If you are trying to conceive it is recommended you have intercourse every day, beginning as soon as you detect egg white-type mucus. After ovulation, mucus becomes thicker and cloudier.

You may still be fertile during this stage, but only for two or three days at most. For the remainder of your cycle, the cervix produces mucus that is thick, sticky and acidic. The mucus stays around the opening of the cervix, acting to block the entry of sperm. Most women do not produce noticeable quantities of mucus at this stage, and feel more dry than at other times of their cycle. You can check the type of mucus your cervix makes by looking for a discharge left on your underpants or toilet paper, or by inserting a clean finger into your vagina.

Egg white type fertile mucus will stretch several centimeters between your fingers and it will look clear and mucus-like. Normally, you should only notice this type of fertile mucus once in your cycle, in the couple of days just before

ovulation. A minority of women experience multiple batches of egg-white mucus during their menstrual cycle. This is common in women with polycystic ovarian syndrome. This condition is discussed in detail in chapter 3. Some women never notice appreciable changes in their cervical mucus throughout their cycle. In most cases this is not a problem and it is still possible to get pregnant despite this. If your cervical mucus is constant, does not go through changes, is irritating, itchy or has an offensive smell, you probably have an infection and it is important to see your doctor.

What happens if there is no detectable cervical mucus?

Some women produce very little mucus and this reduces the chances of conception. The most common factors to affect cervical mucus production include:

- Anti-histamine use and the use of other anti-allergy medication.
- Some antibiotics.
- Clomiphene; a medication used to induce ovulation in infertile women.
- Cough suppressants
- Some cold and flu and sinus medication
- Other medication including sleeping tablets, atropine, propantheline, some anti-depressants and some epilepsy medication
- Age. Women in their 20s produce greater quantities of cervical mucus for more days than women over 35.
- Being underweight. This affects estrogen production; therefore less mucus is usually produced.
- Vaginal douching. Obviously this practice can wash away cervical mucus. Do not practice vaginal douching while attempting to conceive unless you are trying to overcome an infection and are under the guidance of a health care practitioner.
- Infection of the reproductive tract.
- Previous treatment for cervical cancer or pre-cancerous changes, such as cervical cone biopsy.
- Hormonal problems that result in anovulation (lack of ovulation). This is discussed in detail later in this chapter.
- Stress
- Previous D and C (dilation and curettage) Sometimes adequate cervical mucus is produced, but the mucus is inhospitable to sperm. This is commonly referred to as having hostile mucus. The mucus does not allow the sperm to survive inside the female reproductive tract and impedes sperm transport. Mucus may be hostile for the following reasons:
- Poor quality mucus due to poor diet and nutritional deficiencies.
- Too acidic. Mucus can be too acidic due to the following factors: too

much alcohol, sugar, dairy products, white flour, gluten and red meat. All of those foods have an acidic effect in the body, whereas fresh vegetables and fruit have an alkaline effect.
- Genitourinary infections produce hostile mucus.
- Food allergies can cause the production of excessively thick mucus that impedes the travel of sperm through the female reproductive tract.

Basal body temperature

Body at rest temperature

Another way of determining when you ovulate is by measuring your temperature when your body is at rest. This method is cumbersome and not entirely accurate, but it can be used as a backup, in combination with other methods. This method is more useful for women who have regular menstrual cycles that are close to 28 days long. You will need to measure your body temperature with a mercury thermometer first thing in the morning when you wake up, before getting out of bed. Your body temperature remains fairly constant each day under normal circumstances, however just after ovulation your temperature rises by 32.4 to 32.9 degrees Fahrenheit (0.2 to 0.5 degrees Celsius), and remains elevated until your next period.

The rise in body temperature is caused by the progesterone released from the follicle after ovulation. The basal body temperature test can tell you when you have already ovulated. It is often already too late to conceive once you've noticed that your temperature has risen; however if you take your temperature each day for several months you can watch for a pattern, and then plan intercourse in the day or two before your temperature is due to rise in subsequent menstrual cycles. Women are most fertile the few days before their basal temperature rises, and are least fertile when their temperature has remained elevated more than three days.

Instructions for measuring your basal body temperature

Use a mercury thermometer, as they are more reliable than digital thermometers for measuring small changes in temperature. Take your temperature the same time each morning, as soon as you wake up, by placing the thermometer in your mouth. You should only take your temperature if you have had at least 4 hours of solid sleep before waking. So if you have had a restless night, or gone for a bathroom trip four hours before waking, this method will not be as reliable. That may exclude a lot of women! For accuracy, your temperature should be taken at the same time each morning. Sleeping in late on the weekend can make it more difficult to see a pattern and link temperature changes to ovulation.

Several things can affect your temperature, thus making this method inaccurate; these include an infection or other illness, stress, alcohol consumption the previous day, allergies, iron deficiency, adrenal gland exhaustion, thyroid disorders and some medication. If used on its own, the basal body temperature method of tracking ovulation is not always reliable. If you notice a rise in your basal body temperature after ovulation, and your temperature has remained elevated for more than 20 days, this could indicate you are pregnant.

Ovulation monitoring kits

There are several fertility monitoring kits available on the market that are very helpful for determining the fertile days of your menstrual cycle. Most kits work by measuring luteinizing hormone (LH) levels in your urine. Immediately before ovulation, the body produces a large amount of luteinizing hormone, which triggers the release of a ripe egg from the ovary. Ovulation test kits detect a surge of luteinizing hormone in the urine, which indicates that ovulation will likely occur in the next 24 to 48 hours.

This is your most fertile time and the optimum time for sexual intercourse that can lead to pregnancy. Ovulation monitoring kits are much less reliable in women with short or long cycles, or women with polycystic ovarian syndrome. Some fertility monitoring kits measure estrogen levels in the saliva. These kits detect an increase in estrogen levels, approximately two to three days before ovulation. There is not as much evidence to support the accuracy of these kits.

Anovulation - failure to ovulate

A large percentage of women are not able to conceive because they do not ovulate, or don't ovulate regularly; this is called anovulation. Most women who do not ovulate have irregular menstrual cycles, and sometimes they don't menstruate at all for several months or years. If your menstrual cycles are shorter than 23 days, or longer than 35 days, you are probably not ovulating. If the length of your menstrual cycle varies greatly from month to month, that also indicates you are probably not ovulating. If you do not ovulate, your chances of getting pregnant in that month are zero because there is no egg to fertilize.

The most common causes of anovulation include:

- Polycystic ovarian syndrome. This is by far the most common cause and will be discussed in detail in chapter 3
- Obesity
- Syndrome X (insulin resistance). You do not have to be overweight to

have insulin resistance.
- Too low body weight
- Recent change in weight
- Illness
- Extreme exercise
- Hyperprolactinemia - i.e. High blood levels of the hormone prolactin. This is discussed in chapter 3
- Advancing maternal age; failure to ovulate is more common in women over 35
- Menopause and premature ovarian failure
- Disorders of the hypothalamus or pituitary gland in the brain
- Over or under active thyroid gland
- Stress. This is a big and underappreciated cause of anovulation.
- Iron deficiency
- Vitamin D deficiency

The treatment of anovulation depends on the cause. Sometimes women who don't ovulate continue to experience a monthly bleed and sometimes they don't. This book addresses each of the causes of lack of ovulation and tells you what to do to overcome it. The most common medical treatment for anovulation is the fertility drug clomiphene (brand names Clomid and Serophene). There is more information about clomiphene and other prescription fertility medication in chapter 12.

3. Hormonal Disorders that cause Infertility in women

Endometriosis

Endometriosis is one of the leading causes of infertility in women. The condition affects between 15 and 20 percent of women in their reproductive life, while endometriosis is present in between 30 and 50 percent of women with infertility. Endometriosis is a condition where the lining of the uterus (endometrium) grows outside of the uterus. Endometrial cells travel to the abdominal cavity and may attach themselves to the ovaries, fallopian tubes, behind the uterus, the bowel, bladder and other nearby structures.

Rarely endometrial tissue travels to distant parts of the body. Each month the endometrial tissue builds up and then bleeds; although the blood is not able to leave the body with the menstrual flow if it is found in areas other than the uterus. Because the blood cannot escape, surrounding organs and tissues can stick to each other and form scar tissue.

Why is endometriosis so common?

There are several theories for the cause of endometriosis, but most authorities believe that it is an inflammatory disease, as it shares several features in common with autoimmune disease. Research has shown that anti-endometrial antibodies are present in 60 percent of endometriosis patients. All women with endometriosis have high levels of inflammatory chemicals in their bloodstream and they suffer with impaired immune system function. Endometriosis tends to run in families and environmental chemicals are also thought to play a big role in the disease. Researchers have been able to induce endometriosis in laboratory animals by exposing them to minute quantities of PCBs (polychlorinated biphenyls) and dioxins.

In one study scientists were able to cause endometriosis in monkeys with dioxin contaminated food, at precisely the dose that humans are commonly exposed to in the food supply. Research in humans has shown that blood levels of PCBs and DDE (the major breakdown product of DDT) are significantly higher in women with endometriosis than healthy women. It is thought that these chemicals cause detrimental changes in immune system function.

Environmental chemicals that compromise fertility are explained in detail in chapter 9. Women who start menstruating young (younger than 12 years), and who experience very painful menstrual cramps early in life, tend to have the worst cases of endometriosis. It is also more common in women who bleed for longer than seven days, and women who have a menstrual cycle shorter than 27 days.

Signs and symptoms of endometriosis

The following list describes the main symptoms of endometriosis. Most women will not experience every symptom:

- Painful menstrual periods - immediately before and during bleeding
- Pain during and/or after sexual intercourse
- Back pain during menstruation
- Pain while urinating, defecating and while passing flatus while menstruating
- Abdominal pain during ovulation
- Diarrhea during menstruation and increased urination
- Fatigue

Interestingly some women experience no pain with the condition, yet it may still lead to infertility.

How does endometriosis cause infertility?

In moderate to severe cases, endometriosis can cause scarring to the fallopian tubes, causing them to get blocked. This means an egg will not be able to travel down the tube and sperm will not be able to travel up in search of an egg. Scar tissue can also envelope the ovaries, inhibiting the release of an egg. Interestingly, in many cases of endometriosis, the disease is not severe enough to cause plumbing problems, however infertility will still be present. It is thought that the inflammatory chemicals produced by a woman with endometriosis interfere with conception, implantation, and increase the risk of miscarriage.

Diagnosis and conventional treatment of endometriosis

Women who experience intense menstrual cramps, along with some of the other symptoms mentioned are usually assumed to be suffering with endometriosis. However, the only definitive way to diagnose the condition is via laparoscopy. This is a small operation performed under a general anaesthetic, where a small telescope is inserted into the abdomen through a tiny cut in the belly button. The conventional treatment of endometriosis includes non-steroidal anti-inflammatory drugs (NSAIDs) for pain relief, such as ibuprofen and naproxen. These drugs should be avoided or used with caution in women trying to conceive.

Birth control pills are often recommended for women with endometriosis, as they suppress hormone production. They are obviously not appropriate in women trying to conceive and they don't address the cause of the condition anyway. In moderate to severe endometriosis, drugs called gonadotropin releasing hormone agonists (for example Lupron [leupolide]) are given to women to put them in a temporary menopausal state. These drugs are not a permanent solution, they have terrible side effects and they can make it more difficult to conceive for women undertaking IVF. Another conventional treatment is the drug Danazol.

It is a weak androgen (male hormone) and works by reducing estrogen production. Danazol has side effects and it can cause birth defects if a woman becomes pregnant. Another commonly used treatment for endometriosis is surgery to remove the endometrial deposits and scar tissue from the abdominal organs. This provides relief for a while and can help to increase a woman's chances of conception, but the tissue tends to grow back in time.

Recommended treatment for endometriosis

Endometriosis is a symptom of estrogen dominance and progesterone deficiency; therefore a cornerstone of treatment is correcting the hormone

imbalance. Endometriosis also has a strong immune component; therefore improving the health of the immune system is also vitally important. Strategies for the treatment of endometriosis:

- Try to make your diet as healthy as possible. Your hormone balance or lack thereof is greatly influenced by your day to day diet. Ensure you eat plenty of vegetables, fruit, good quality sources of protein (such as seafood, poultry, eggs - free range or organic is preferable). Keep your intake of red meat to a minimum, as it can worsen inflammation via its effect on prostaglandins, thereby worsening menstrual cramps.

  Minimize your intake of sugar, flour, alcohol and margarine, as all of those foods increase inflammation. Women with endometriosis don't make enough progesterone. Progesterone is a steroid hormone, meaning it is made from cholesterol. Therefore it is important to include plenty of good fats in your diet to encourage progesterone production. Good fats are found in raw nuts and seeds, oily fish (such as salmon, sardines, anchovies and mackerel), extra virgin olive oil, freshly ground flaxseeds, avocados and organic coconut oil.

- Avoid consuming cow's milk and gluten. Endometriosis displays several features of autoimmune disease, and these foods worsen inflammation and promote antibody production against your own organs and tissues. Please avoid all cow's milk and any food that is made of, or contains cow's milk. Lactose free milk is not suitable. It is not the lactose in milk that promotes immune system problems; it's the protein (casein). Gluten is found in wheat, rye, barley, oats, spelt, kamut and many processed foods. Gluten promotes auto-antibody production. All women with endometriosis need to follow our fertility diet in chapter 8 of this book.

- Correct poor liver and bowel function. The majority of women with endometriosis and other estrogen dominant conditions have sluggish liver and bowel function. Your body is constantly producing estrogen and breaking it down again and excreting it. It is your liver's job to break down estrogen after it has done its jobs in your body. Liver function can be compromised by an unhealthy diet and lifestyle; factors such as too much alcohol or sugar and not enough raw plant food put a great deal of stress on your liver. Some viruses, medication, autoimmune disease, Syndrome X (insulin resistance) and obesity also compromise liver function.

- Make sure you get enough sleep. Melatonin is a hormone made in the pineal gland of the brain that you produce when you sleep. Melatonin is available on prescription and is sometimes used by people who are

suffering from jet lag and are unable to sleep, or for other causes of insomnia. Melatonin has powerful anti-inflammatory and antioxidant effects in the body; it is largely responsible for the therapeutic effects of sleep on your body. Recently a Turkish research team found that when given to rats, melatonin significantly shrank endometriosis lesions over a two month period, compared to rats who did not receive melatonin. This is very promising research, but more studies need to be conducted in humans. Sleep is extremely therapeutic and you need to ensure you get enough good quality sleep each night; aim for seven to eight hours. Melatonin supplements should not be used long term.

- Minimize your exposure to environmental estrogens as much as possible. See chapter 9 for more information.

- Use natural progesterone. If the endometriosis is severe enough to interfere with your fertility, you need to use bio-identical progesterone. See page 49 for detailed information about the importance of progesterone.

Recommended nutritional supplements for endometriosis

- The most important vitamin required for progesterone production is vitamin B6. Women who experience premenstrual syndrome (PMS) are typically B6 deficient, and this worsens the condition. Symptoms such as premenstrual bloating, breast tenderness and mood disturbances all respond well to B6 supplementation. The oral contraceptive pill promotes vitamin B6 deficiency; therefore women who have taken the pill in the past are almost certainly deficient. Vitamin B6 is also required for the production of the brain chemicals (neurotransmitters) serotonin, noradrenalin, dopamine and GABA (gamma amino-butyric acid); therefore it promotes a healthy mood.

  Vitamin B6 is found in small quantities in most foods, including potatoes, bananas, salmon, chicken and spinach. If you have endometriosis, problem menstrual periods or have used the pill in the past, you will not get enough through diet; a supplement is essential. Research has shown that 100 mg of vitamin B6 per day is an effective dose. If you take a vitamin B6 supplement, it is important to take a B complex supplement as well, in order to avoid developing a deficiency in other B vitamins.

- Fish oil can prevent endometriosis developing in the first place, and it is an excellent treatment for women who already have the condition. Researchers from Harvard Medical School and Boston's Brigham and Women's Hospital in the USA analyzed diet and health data from

70,709 American nurses. The total amount of fat the women consumed each day didn't affect their risk of endometriosis, but the type of fat they ate did. Women who consumed the most omega 3 fats were 22 percent less likely to be diagnosed with endometriosis within 12 years, compared with women who ate the least. This is not surprising, as omega 3 fats are a powerful natural anti-inflammatory agent.

Other research has shown that an inflammatory protein made by the immune system called Nf-Kappa B plays a key role in promoting and maintaining abnormal growth of endometrial tissue. Nf-Kappa B is a type of switch that turns on the production of a whole host of inflammatory chemicals by our cells. Chronically high blood levels of this protein are found in people who consume sugar, starch and omega 6 fat rich diets; that's most of the Western world. High levels of Nf-Kappa B are associated with several degenerative and painful diseases. The good news is that fish oil (as well as antioxidants) can suppress Nf-Kappa B production.

Fish oil is an essential component of the treatment of all inflammatory diseases and immune dysfunction. Consuming oily fish in your diet, along with walnuts and freshly ground flaxseeds is very beneficial, but it is not enough if you already have endometriosis. You will need to take a fish oil supplement. A beneficial dose would be approximately 1200 mg of DHA and 1800 mg of EPA per day. You will need to find a strong, concentrated fish oil in capsule form, or use liquid fish oil to achieve that dose.

- Vitamin D has an anti-inflammatory effect in the body and is beneficial for all immune system disorders, including endometriosis. For more information on vitamin D see page 89.

- Selenium is an anti-inflammatory mineral and is necessary for women with endometriosis. See page 91 for more information on selenium.

- Vitamin E helps to reduce scar tissue and is essential for healing. Vitamin E is found in extra virgin olive oil, nuts and seeds and avocados. If you have endometriosis, you would benefit from a vitamin E supplement of 500 to 1000 IU per day. Vitamin E is best taken as mixed tocopherols.

- MSM is an organic form of sulfur; it stands for methyl sulfonyl methane. It can be taken in supplement form along with vitamin C.

- Vitamin K is found in dark green leafy vegetables and extra virgin olive

oil. Deficiency of vitamin K makes it more difficult for your blood to clot; thereby promoting heavier bleeding. Including more vitamin K in your diet will help to reduce excessive menstrual bleeding.

- There are several herbs that are very beneficial for correcting the hormone imbalance of endometriosis. These herbs include Vitex agnus castus, Paeonia lactiflora and Angelica sinensis. It is best to see a naturopath or herbalist, as they can recommend the ideal combination of herbs for your specific condition.

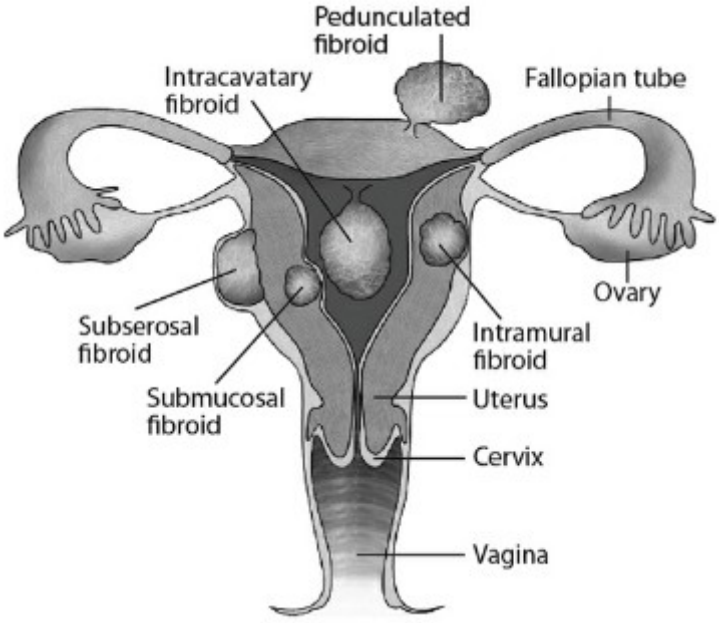
Uterine fibroids

Uterine fibroids are non-malignant tumors of the muscular wall of the uterus. They are also known as myomas and leiomyomas. It is estimated that between 30 and 50 percent of women aged 35 to 50 years have one or more uterine fibroids. They are most common in women in their late 30s up until menopause. Fibroids are sensitive to estrogen; it stimulates them to grow; especially if inadequate progesterone is produced in your body. Studies have shown that fibroids contain a greater quantity of estrogen receptors than surrounding healthy uterine tissue. When a woman reaches menopause, the lack of estrogen causes them to shrink. Hormone replacement therapy would enable fibroids to keep growing.

Symptoms of uterine fibroids

In many cases fibroids cause no symptoms and a woman may not be aware she has them. The following list describes the most common symptoms of uterine fibroids:

- Heavy menstrual bleeding and/or lengthy periods
- Menstrual cramps
- Spotting between periods
- Painful sexual intercourse (dyspareunia)
- Frequent urination if fibroids press against the bladder
- A sensation of pressure or heaviness in the back
- Backache There are several different types of uterine fibroids, depending on their location and features; they include:
- Intramural
- Pedunculated
- Intracavitary
- Submucus
- Subserus



Uterine fibroids can be as small as a pea, or larger than a grapefruit. It is their size, as well as their location that determines whether they adversely affect a woman's fertility. Submucosal fibroids are most likely to interfere with fertility, mainly because they can inhibit successful implantation of an embryo. Women with intramural fibroids are also likely to have fertility problems, and they are more prone to miscarriages. Intramural fibroids are the most common variety. Any type of fibroid can restrict the growth of the fetus while in the womb and this increases the risk of stillbirth (intrauterine fetal death) or premature delivery.

What causes uterine fibroids?

Estrogen fuels the growth of uterine fibroids and progesterone suppresses their growth. The same factors that promote endometriosis also promote uterine fibroids. Fibroids are the result of years of estrogen dominance and relative progesterone deficiency. Synthetic hormones found in the contraceptive pill, implant and vaginal ring, as well as the hormones in HRT (hormone replacement therapy) also fuel their growth. Environmental estrogens such as pesticides and plastic have a significantly detrimental effect on fibroids. Interestingly, research has shown that females fed soy formula in infancy are more likely to develop uterine fibroids by age 35, and so too are infants who had mothers with diabetes.

Diagnosis and conventional treatment of uterine fibroids

In many cases fibroids do not cause any problems and women are not aware they have them. Fibroids can be detected during a physical examination performed by a gynecologist or general practitioner. The diagnosis needs to be confirmed with an ultrasound. Small fibroids that are not causing any

symptoms or interfering with fertility are left alone and monitored with regular ultrasounds. If fibroids are causing problems, there are a number of treatment options. Drugs can be prescribed to reduce hormone production, and this gradually shrinks the fibroids. A hysterectomy is the most common treatment for fibroids that are large and are causing heavy menstrual bleeding and discomfort; fibroids are a leading cause of hysterectomy.

Clearly this is not a favorable option for women who want to have children. There are other procedures available for fibroid removal, including removing the fibroids only (during hysteroscopy), or blocking the blood supply to a fibroid (arterial embolization) so that it eventually dies. In most cases neither of those procedures is very successful, because fibroids tend to grow back, and surgically removing fibroids can weaken the uterine wall, making child bearing risky or impossible. Often the best option for women with fibroids who want to preserve their fertility is myomectomy; this is a surgery to remove the fibroids through an incision in the abdomen.

This is also the best choice for women with many fibroids (15 to 20) which are 7 cm or larger. This surgery can also be used for fibroids that are in a sensitive location, such as on top of a fallopian tube. A myomectomy is a major surgery, and requires a hospital stay of several days, and a recovery time of several weeks. Fibroids on the inside of the uterus can be removed through the vagina with a hysteroscope. This is a telescope that goes into the uterus through the vagina and cervix.

Women who have this procedure can usually go home the same day and return to normal activities in around 24 hours. Another benefit of this procedure is it usually doesn't leave scars in the uterus; this is important in order to preserve fertility. This procedure is most suitable for submucosal fibroids. Laparoscopy can be used in women with only a few fibroids that are on the outside of the uterus and that aren't larger than 6 cm. A laparoscopy is where the fibroids are removed via small incisions in the navel. After a laparoscopy women can usually leave the hospital the same day, but will need around three days to recover.

The biggest drawback with laparoscopy is that the uterus must be sewn back together with multiple layers of stitches to prevent it from rupturing during pregnancy. If you wish to have this procedure, it is vital you find a highly skilled and experienced gynecologist. In most cases, women who have had fibroid surgery can attempt getting pregnant around three months later. The delivery will have to be monitored closely to make sure the uterus doesn't rupture. Some doctors strongly recommend a caesarean section instead.

Recommended nutritional treatment for uterine fibroids

The diet and supplement recommendations we give you in the following section are effective for shrinking small fibroids in the majority of cases. However, clearly it is best to try and avoid developing uterine fibroids in the first place. The problem is, when they are small and easily reversed, they often don't cause any symptoms, so women are generally unaware of their presence. It is important to remember that uterine fibroids are a consequence of estrogen dominance and progesterone deficiency. Therefore, if you have symptoms of progesterone deficiency, this needs to be corrected before it does irreparable harm to your reproductive organs. See page 49 for information about progesterone.

How to treat uterine fibroids

- Women with uterine fibroids have suffered long term progesterone deficiency. See page 49 for our recommendations on increasing your progesterone level.

- Green tea may be effective for fibroids. A study published in the American Journal of Obstetrics and Gynecology found that an extract of green tea has the ability to kill human fibroid cells in tissue cultures, and it can eradicate fibroid lesions in animals. The researchers are in the process of recruiting participants for human trials.

- Reduce your exposure to environmental estrogens as much as possible. Plastic, pesticides, dioxins and several other chemicals all promote fibroid growth. See chapter 9 for more information.

- Make sure you don't have high blood insulin levels. Insulin is a growth promoting hormone, and it as well as insulin-like growth factor 1 both stimulate the growth of tumors in the body. Insulin is produced when you eat sugar, flour, grains, cereals and sugar. Therefore it is important to limit your intake of these foods.

- Have your iron level checked, as fibroids usually cause heavy bleeding which makes a woman iron deficient. Iron deficiency can inhibit ovulation.

- Take a selenium supplement, as this mineral helps to reduce the growth of benign tumors. An ideal dose is 200 micrograms of selenium per day.

- Vitamin K helps to reduce bleeding caused by fibroids. Vitamin K is found in dark green leafy vegetables and extra virgin olive oil.

Ovarian cysts

Ovarian cysts are fluid filled sacs that are common in women during their reproductive years. Most types of ovarian cysts do not cause symptoms; they are harmless and go away on their own. Every menstruating woman produces several cyst-like structures during the first half of her menstrual cycle. One "cyst" becomes the dominant follicle, which releases an egg at ovulation. If a pregnancy doesn't occur, the remaining follicle becomes the corpus luteum and then eventually breaks down and dissolves when a woman bleeds. Ovarian cysts form when this process does not develop properly and the resulting empty ovarian follicle fills with fluid and enlarges.

There are several types of ovarian cysts:

- * Simple cysts, also called functional cysts. This is the most common type. These cysts are usually harmless and typically go away on their own within approximately three menstrual cycles.

- Endometrial cysts. These are sometimes called chocolate cysts because they are filled with blood. They occur when endometrial tissue attaches itself to the ovaries. If not treated promptly there is a risk these cysts can damage the ovaries and seriously impair fertility.

- Dermoid cysts. These cysts contain various types of tissue, such as hair, nails, teeth and others.

- Cystadenoma. These cysts form from cells lining the outer surface of the ovaries.

Symptoms of ovarian cysts

Ovarian cysts often cause no symptoms at all. If symptoms are present, the following may occur:

- If the cysts become very large they can cause pressure, a feeling of fullness and discomfort in the abdomen.

- Painful sexual intercourse

- A disrupted menstrual cycle and/or unusually painful menstrual periods

If a cyst becomes twisted (called torsion) this can cause intense pain; so too can a large cyst that bursts. An ultrasound or laparoscopy can diagnose ovarian cysts.

Treatment of ovarian cysts

In the case of simple cysts the usual medical approach is to wait and see. In many cases the cysts resolve themselves. Oral contraceptives are often prescribed because they inhibit ovulation and suppress production of the body's own hormones. This is not a long term solution and we do not recommend this option. If cysts are very large and causing discomfort, surgery may be required to remove them. Most ovarian cysts will dissolve in time, with appropriate diet changes. It is vitally important for women with ovarian cysts to avoid all dairy products.

Dairy products worsen cysts present anywhere in the body. A healthy diet, as described in chapter 8 should help to resolve cysts. Margarine and processed vegetable oil must be avoided. Iodine deficiency increases the risk of cysts in the ovaries, breasts and thyroid gland. Many women are iodine deficient. We recommend an iodine intake of between 160 and 350 mcg in supplement form per day. Women with thyroid dysfunction are at increased risk of ovarian cysts. Treating the thyroid problem with nutritional medicine usually resolves ovarian cysts as well. Selenium and vitamin D are also beneficial for helping to shrink ovarian cysts.