



CHAPTER 5

Second Trimester: Normal

The mid-trimester, from the end of the twelfth week to the end of the twenty-fourth week of gestation, is a bit of a lull between the two busier trimesters. Bad things hardly ever happen in the second trimester. Most symptoms improve, and many women report feeling “more like themselves.” Although most pregnant women become obviously so during the second trimester, they are still able to get up and around with relative ease. It’s a good time to take a vacation, if you are so inclined. It’s also a good time to just relax and enjoy gestating.

Eat, Bubelah!

The second-trimester mandate is good nutrition. Food helps build the baby’s brain, heart, lungs, and every other body part; without good nourishment, the baby cannot grow. Additionally, there’s a growing body of evidence that suggests your baby’s nutrition in utero can affect its future risks of diabetes, high blood pressure, and heart disease.

Good nutrition can be tough for women who are usually too busy, picky, or lazy to eat healthfully. It’s tough for many women to make the transition to better eating habits during pregnancy, whether it’s having breakfast or getting enough greens. Plan ahead, especially if healthy eating does not come naturally to you. Begin

74 THE STRESS-FREE PREGNANCY GUIDE

incorporating these guidelines early on so that they're a cinch by the second trimester, when it really counts.

Women who tend to eat one big meal a day will have to learn a new rhythm. First of all, the one-meal plan is hard on the mother's stomach. It's also not great for the baby, who needs food pretty much all the time. Skipping meals guarantees a low blood sugar level and poor nutrition for the little tyke. Abstaining from food for more than thirteen hours can trigger a sequence of hormonal events that ultimately stimulates the production of acids in the blood, which increases the risk of preterm labor. Remember to eat regular meals and to graze.

Daily Second-Trimester Diet Requirements

Nutrition is not an exact science, but we do know a few basic facts. It seems that variety is essential. For example, eating foods that are vibrant and varied in color is a simple guideline worth keeping in mind. There always seems to be a new study out that shows how a precise component of food (see section on PUFAs) is extra important in pregnancy, but there could be hundreds left to identify. In short, the goal is to cover all your bases by consuming the broadest array of foods possible.

There are as many pregnancy diets as there are dietitians, so when you choose a nutritional plan, make sure it was designed by someone who knows what they're talking about. The following regimen was designed by the March of Dimes, and it's the one I recommend to my patients. It's simple, safe, and comprehensive.

HAZARDS: STILL WORTH AVOIDING

As the baby grows, external hazards become a bit less concerning. When the fetus consists of fewer cells, one or two going awry can have a tremendous impact. Once arms are formed, for example, they are not going to fall off. Needless to say, it's still worth avoiding unnecessary risks; for example, Chernobyl is not someplace you want to visit while pregnant and it's best to wait before having any plastic surgery.

Second Trimester: Normal 75

A Quart of Milk or Its Equivalent

Milk is not just calcium; it's got great value in terms of protein, carbohydrates, and fat. You can mix up the sources, as long as you end up with the equivalent of one quart (four cups) of milk total. Cottage cheese and yogurt are healthy and roughly equivalent to milk in their nutritional value. Skim milk is fine. One ounce of hard cheese is the equivalent of one cup of milk. Ice cream counts, but it isn't a great idea as a sole source of dairy. People who are lactose intolerant can substitute soy milk fortified with calcium. Live-culture yogurt is often safe for lactose-intolerant people because it contains the enzyme that they lack.

Eight Ounces of Protein (Animal Preferred)

Fish, chicken, and meat are the best and easiest ways to fulfill the animal protein requirement, and eight ounces every day is ideal. A helpful nutritionist's tip is that eight ounces is approximately the size of two decks of cards. Protein consists of many different amino acids, some of which must be consumed each day because the body cannot make them. These are called *essential amino acids*. Others can be converted from carbohydrates, and still others can be made from other materials in the body. Only animal food has all the essential amino acids. Remember to avoid certain fish (see page 15) and cook all meat thoroughly.

If you are an ovo-lacto vegetarian, you can eat eggs and cheese to fulfill your protein requirement, but remember that if you eat a block of cheese for protein, you still need to fulfill your dairy requirement. If you are a vegan, you need to work a little harder to derive all the essential amino acids from vegetable sources. However, there are food combinations that contain a full complement of protein: rice and beans, *pasta fagioli* (beans and pasta), and vegetarian chili on rice are just a few examples.

Four Grains

For most people, this is the easiest requirement to fulfill, since it includes pasta, bread, cereal, oatmeal, rice, bulgur, croutons, and so forth. One slice of bread equals one grain serving, so a sandwich, for example, counts as two grains. Whole wheat is healthier than white,

76 THE STRESS-FREE PREGNANCY GUIDE

but pregnant women benefit from all flour in the United States because it is fortified with folic acid.

Two Leafy Greens

Even with the abundance of fresh and frozen vegetables available in the average grocery store today, there are plenty of women who claim that they don't eat anything green. There are so many options: arugula, mesclun, field greens, kale, broccoli, okra, collard greens, escarole, spinach, swiss chard, and more all count toward this requirement. Figure one handful equals one serving. Sorry, but pistachio ice cream counts as a dairy, not a green.

One Vitamin C

This should be an easy dietary requirement to fill: a glass of orange or cranberry juice is all you need. Obviously citrus fruits count, as do most berries. Vitamins C and B (which are included in most prenatal vitamins) are considered *stress vitamins* because you tend to use them more during times of stress, and you need to eat them every day since you cannot store them (like amino acids).

One Yellow Fruit or Vegetable

These include apples, bananas, potatoes, pears, squash, corn, carrots, and tomatoes. If it's a fruit or vegetable and does not fall into one of the other categories, it's probably a yellow. This is perhaps the least understood of all the dietary requirements in pregnancy, but including it ensures the broadest possible food variety.

Water

Drink at least eight eight-ounce glasses (sixty-four ounces total) each day. Being pregnant makes you sweat and breathe more heavily than normal, draining additional water from your body. The gained weight and blood volume also tax hydration. Even non-pregnant people tend to simply feel better when they are adequately hydrated. Many women who have headaches in pregnancy find that drinking lots of water is a more effective treatment than medication.

Second Trimester: Normal 77

PUFAs (Polyunsaturated Essential Fatty Acids)

The latest prenatal nutritional studies show that two omega-3 essential fatty acids, called *polyunsaturated essential fatty acids* (PUFAs), are particularly important in developing the baby's central nervous system. *Docosahexaenoic acid*, otherwise known as DHA, is uncommon in most modern diets. DHA is found in fish, wild game, unprocessed grains, and some prenatal vitamins. *Arachidonic acid*, or AA, is more commonly found in modern diets and prenatal vitamins. AA is present in cereals, whole-grain breads, most vegetable oils, eggs, and poultry.

It's not uncommon for pregnant women to become obsessed with what they're eating. Maybe they entered pregnancy with a strong distaste for milk and have never been able to get over it. Maybe their family never served fish. These are small issues that can be fixed with the help of a nutritionist. The nutritional guidelines provided here will help you achieve an optimal outcome. But if you miss a serving of greens one day or are short on vitamin C another day, it's not worth worrying about, as long as on the whole you follow a healthy, nutritious, and balanced eating regimen.

Common Second-Trimester Symptoms

Despite the second trimester being the calmest, safest, and most comfortable, it's still a time of dramatic change within the mother's body. The symptoms discussed here reflect these changes, but again, not every woman experiences every symptom. If you've never felt better, you are extremely lucky. Most women experience at least a few of these symptoms, and it may help to know that these bodily changes are perfectly normal. Only in pregnancy will you hear a doctor tell you that it's fine to have an elevated heart rate, compromised vision, and relentless constipation. Enjoy it!

78 THE STRESS-FREE PREGNANCY GUIDE

ODD SIDE EFFECTS

To improve the blood supply to the uterus, the body has to build new arteries and veins to get blood in greater quantity to more places in the body. This is called *congestion*, and it strikes most noticeably in your mucous membranes (mouth, nose, and vagina) and pelvis. As a result, your gums may bleed when you brush your teeth, a condition dentists call *gum disease of pregnancy*. You may be more prone to nosebleeds. Your vagina might be a little swollen and blue. Other bodily fluids, such as saliva, can also increase.

Palpitations

As the pregnancy progresses, the heart beats not only faster but with greater *stroke volume*. In other words, the heart also beats harder. With pregnancy, total blood volume increases by about three liters. Most of this is water (hydration!) and fresh red blood cells. As a result, the heart has to work extra hard to pump all the extra blood to more places.

Some women notice the feeling of their hearts beating in their chests all the time. Some feel it when they lie down and their ear pressed against the pillow reports each gush of the blood through an artery. Some women don't really notice it at all. Whether you turn

WE'RE ANIMALS, AFTER ALL

Your primitive brain doesn't know about treadmills; it knows about imminent threats to your life. Thus, if you're running, your body figures your best chance at survival is to be able to run like hell or fight the danger. This reflex is called *fight or flight*, and it is automatically, unavoidably triggered by increased pulse and respiration. It's a reflex designed to preserve the maternal unit (you) by giving you a maximum chance at survival and a future shot at reproduction. Fight or flight is not designed with the baby in mind.

Second Trimester: Normal 79

out to be the former or the latter, rest assured that increased stroke volume is totally normal in pregnancy.

If you still need reassurance, count your pulse. Put your index finger on your wrist or neck and count the beats for one minute. If the number is under 110, chances are you're fine. Pay attention to the rhythm of your pulse; is it regular or erratic? If your heart is beating like a metronome, chances are you're totally fine. In fact, even if your heart rate is an irregular 120 beats per minute (BPM), it's still probably normal, but it is time to ask your doctor.

Shortness of Breath

Most pregnant women experience some increase in respiratory rate. Whereas a nonpregnant woman may breathe twelve times each minute at rest, that number could increase to fourteen in the second trimester. It's more work to breathe for two; the blood needs to travel through a placenta to drop off some oxygen for the baby and then get all the way back to the lungs to pick up more. The central nervous system stimulates the heart and lungs to work faster to do all this extra hauling.

That stimulation can make the pregnant woman feel short of breath. It's a sign from your nervous system to breathe faster, and if you notice it out of the blue it can feel like an anxiety attack. But remember that if you can still talk, you're still breathing. Nevertheless, if the symptoms worry you, talk to your doctor.

Your Exercise Routine While You're Pregnant

The shortness of breath you experience during pregnancy may affect your exercise routine. It is unlikely that it will keep you from exercising altogether; however, you may have to change your idea of what you consider exercise. Ideal workouts for this time of your life include walking, low-impact aerobics, and swimming. A good rule of thumb is to do whatever you normally do, but cut back the intensity and increase the time. For example, walk the mile instead of running it. It may seem counterintuitive to exercise enthusiasts, but the goal in pregnancy is to maintain, not improve on, cardiovascular fitness.

80 THE STRESS-FREE PREGNANCY GUIDE

Cardiovascular fitness is a big part of many healthy women's exercise regimens. This sort of training aims to improve the heart muscle by working it like any other muscle. This is accomplished by stimulating the heart to beat faster through exertion, up to rates of 180 and beyond.

You may be reducing blood supply to the baby when you are out of breath and/or your heart is beating more than 50 beats per minute above your resting pulse. Because a high heart rate stimulates the fight-or-flight reflex in which the body focuses on self-preservation, the adrenal gland directs blood flow to the lungs and muscles and cuts off nonessential organs with a hormone called *epinephrine* (or *adrenaline* from the adrenal gland). The uterus is one of the first places to get cut out of the blood route.

It's important to remember that your resting heart rate is higher in pregnancy and climbs more precipitously with exercise. Let's say your normal heart rate is 70 at rest and goes up to 120 when you get on a treadmill. In the second trimester, it could be 90 at rest and go up to 150 with the same exertion.

Suffice it to say that the pregnant woman should aim to maintain her heart muscle, not improve it. A simple rule of thumb in exercise is that you can do anything you can talk through. If you're

YET ANOTHER REASON TO GET TO THE DOCTOR EARLY

Because your blood pressure will fall in the second trimester and then rise in the third, it can be hard to tell later on if and when it's getting too high. The only way to know what's normal is to establish a baseline blood pressure in the first trimester or, optimally, even before you are pregnant. Let's say you first get to the doctor in your second trimester and your blood pressure is normal, but it starts to go higher and higher. Your doctor can't be sure whether you have chronic hypertension that perhaps predates your pregnancy or if you are developing one of the hypertensive disorders in pregnancy (see page 145); it's important to know the difference because the treatment and risks are handled differently.

so out of breath while you're jogging that you can't talk, you're running too fast.

Vascular Issues

Pregnancy presents unique obstacles to the circulation of blood in the woman's body. First, there's the increase in blood volume (discussed on page 78), but also the weight of the pregnant uterus compresses all the vessels from the legs as they enter the abdominal cavity, preventing the easy flow of blood and leading to swollen veins. Heavier women, those who already have varicose veins, and women whose mothers have varicose veins are all at greater risk and should take preventive measures.

Varicose Veins 101

The heart circulates all the blood in your body by pushing it out into arteries. This pressure moves it along until eventually it flows into a vein to head back to the heart. Veins contain valves that prevent the blood from sloshing around in your feet all day. Each *pump* of the heart moves the blood along past a valve and into the next chamber. Then the valve closes behind it. The next *pump* moves it up to the next chamber, and so on. A varicose vein appears when a valve fails and twice the volume of blood presses down on the valve below, which can cause that one to fail, too. The vein swells with the added volume. Varicose veins happen throughout the leg, but you only see the ones close to the skin that look like thick, blue ropes.

A great way to prevent varicose veins is through exercise. A muscle contraction, especially around a vein, can help the blood move up the leg to the heart. If you make a muscle in your calf, you're squeezing blood in the right direction. Legs that are in good shape from walking, leg lifts, biking, and similar movements, are less likely to sustain varicose veins than ones with no muscle tone.

Support stockings can help prevent varicose veins closer to the skin. The stockings hug the vein, helping the blood to move along. To guarantee the greatest benefit it's best to put the support stockings on before getting out of bed. After lying prone for eight hours or more, the veins are mostly collapsed. Once standing, even momen-

82 THE STRESS-FREE PREGNANCY GUIDE

tarily, the veins in the legs fill up with blood, making it harder for the support stockings to do their job.

When you have to be on your feet all day, give the veins in your lower body a break by assuming an antigravity position. Accomplish this by creating a straight path from toe to heart. This means that sitting is bad, because the vein hits a right angle at the knee and at the hip. A better option is to lie straight. It's best of all to lie unbent but at a slight angle, with the legs raised above the heart. The blood will fall back to your abdomen, giving all the veins in your legs a rest.

One of the best ways to effortlessly achieve a vein-friendly position is to put a book under the foot of the bed, so your whole sleeping surface is at a slight, one-degree angle. The goal is to create a straight shot from feet to torso, so pillows under the head are fine even if the waistline becomes the lowest point in the mattress. The slightest slope makes a difference. You can put pillows under your feet as well, in which case you should also put a pillow under your hips so that there's no kink in blood flow at the groin.

Increased blood volume and the blockage of free-flowing blood from the legs to the heart also contribute to swollen ankles, which happen when water oozes out of the veins because the pressure is so high. Salt, which increases blood volume, contributes to this problem. During pregnancy, the feet tend to stay puffy twice as long after a salty meal, waiting for the body to mobilize that extra fluid out of the ankles. Unfortunately, this process of deflating the ankles often happens at night when the pressure of the uterus is alleviated because you're lying down. This may mean several nighttime trips to the bathroom as all that water is finally channeled to the bladder, but at least your ankles should look—and feel—normal in the morning. If swollen ankles are a persistent problem, lower your salt intake and drink more water.

Peeing and Pooping

Constipation increases in the second trimester, once more because of progesterone. This hormone can double intestinal transit time from mouth to toilet bowl and diminish gastric emptying time. Usually, food you ate right now would show up in the toilet bowl by

Second Trimester: Normal 83

tomorrow. But when you're pregnant, it might be the day after tomorrow. The digestive tract just isn't moving the way it used to. Exercise helps by stimulating the intestines, but most pregnant women encounter some constipation.

When excrement lingers in the system, it tends to dry out. The intestine extracts all the moisture, making for hard, difficult bowel movements. Many pregnant women must strain to evacuate, which increases the risk of varicosities or hemorrhoids around the vagina and rectum. You can avoid this situation by doing what you can to create bulky, moist stools.

Your best bet is to increase the size and fluid content of what's in your digestive system. The intestines are a tube that responds to pressure; when the inner walls of the tube are stretched, they contract in response and move things along. All kinds of fiber including fruit, vegetables, whole grains, nuts, oats, bran, and even fiber supplements such as Metamucil, are a great idea in pregnancy because these materials bulk up the contents of the intestines to encourage motility. Water is the obvious choice to raise the moisture level, but sometimes it's not enough. When increasing your water and fiber intake doesn't do the trick, a stool softener such as Colace is a perfectly safe alternative, as these are not laxatives and do not irritate the colon. They simply help to hold moisture in the stool so what you pass is bulky and moist; ideally, it won't hurt and you won't have to strain.

Prenatal vitamins can also contribute to digestive problems because they are high in iron, which causes constipation. If you are really struggling, talk to your doctor about your constipation. If you're not anemic, you might be able to go without the iron to get some relief for a little while. You could replace this mineral with lots of meat and leafy greens.

Although pregnant women may struggle with bowel movements, they usually have incredible urinary frequency. As the baby grows, so does the number of trips to the bathroom. The uterus presses right on the bladder; every time the baby kicks it's probably in that vicinity.

Kicking isn't the only thing that stresses the urinary tract in pregnancy. The two kidneys are high on the flank, close to the ribs.

84 THE STRESS-FREE PREGNANCY GUIDE

A tube (called a *ureter*) runs along the flank and down behind the uterus, connecting each kidney to the bladder. The growing uterus inevitably compresses the ureters. Furthermore, progesterone relaxes these tubes, so urine is free to collect in the kidney. For these reasons, all pregnant women eventually develop a *physiologic hydronephrosis*. This is when the urine does not flow freely to the bladder, leading to swelling in the kidney, which, in an X-ray, would look like terminal kidney disease. But in pregnancy it's perfectly normal and completely painless. The only health concern associated with this symptom of pregnancy is how it contributes to urinary tract infections—swollen kidneys indicate a greater amount of urine throughout the system. This urine is relatively stagnant and, therefore, it is more fertile breeding ground for bacteria.

Urinary tract infections are one of the most common medical problems in pregnancy, if not *the* most common, so it's worth the time to try and avoid as many of them as possible. Your only weapon is water. As you hydrate yourself, the kidney filters the water and pushes the urine down the ureter. Hydration prevents the urinary stream from stagnating. Remember to constantly drink and pee, drink and pee, drink and pee.

BACKACHES

A study was done decades ago that found unwed mothers had fewer backaches than pregnant married women. The researchers concluded that married women's posture was different and more harmful than that of their single counterparts because married women were more likely to have wanted to get pregnant and were subsequently thrilled and wanted everyone to know about their pregnancy. Thus, they tended to stick out their bellies, putting a lot of pressure on their lower backs. Unwed pregnant women, who were less eager to share their news, tended to stand with their stomachs in, backs straight. This created less pressure on their backs. The lesson to be taken from this is to keep your knees bent, hold your stomach in, tilt your pelvis, hold your head up, and keep your shoulders relaxed. This is easier on your whole neuromuscular system, and you will feel better. Everyone will know you're pregnant soon enough.

Skin Changes

In general, skin just becomes unpredictable in pregnancy, but more than anything in terms of its color. The area around the nipple (called the *areola*) grows darker. A dark line called the *linea nigra* appears up the belly, like a racing stripe, from the pubic bone straight up toward the chest. Sometimes, hyperpigmentation (also called *chloasma*) can happen across the bridge of the nose and cheeks, between the eyebrows, and/or on the upper lip, like a mustache. This is romantically dubbed a *mask of pregnancy*. It's not very common, although it also happens to certain women on the pill.

Most hyperpigmentation fades after delivery, but do not expect a complete return to your old self. Your breasts will look different; the areolas are likely to remain a little darker and browner. Pregnancy masks fade, but not always completely. The *linea nigra* most often disappears. Dermatologists are always coming up with new ways to help this problem; if you have persistent hyperpigmentation, find a dermatologist to help after the baby is born.

Pregnancy also makes sunbathing a risky endeavor. You may burn when you've never burned before. You may get the best tan you've ever had in your whole life. If you develop a *chloasma*, the sun can make it much worse. For these reasons, pregnancy is probably not the best time to tan your face. (In fact, there is no good time to tan your face, because sun damage and skin cancer are associated with prolonged exposure to ultraviolet rays.) When you're out in the hot daylight sun, wear a hat, big sunglasses, and a lot of sunblock. Even then, take it slow and don't make your first foray onto the beach an all-day event. If you do choose to sunbathe, at least expose your nipples to the sun so they get the benefit of toughening up before breast-feeding.

Pregnant women sometimes sprout skin tags. These are just accumulations of skin cells (*epithilium*) and pose no health risks. They can be removed, but most women don't bother until after the baby is born.

Stretch marks (called *stria*) are probably the least attractive and most permanent mark of pregnancy. A rapid change in figure can lead to these bright pink linear marks. They can happen any-

86 THE STRESS-FREE PREGNANCY GUIDE

MY PUBLIC SERVICE CAMPAIGN

In adolescence, the skin is so immature that even girls who rapidly sprout breasts get stretch marks. You can imagine that pregnant teenagers end up with pretty significant *stria* across their bellies. (Perhaps we could lower teen pregnancy rates just by including pictures of real teenagers' bellies, post-childbearing, in teen sex ed texts.) As far as this one small, superficial facet of pregnancy goes, the older you are, the better.

where the skin rapidly stretches as the body underneath it expands, but most often they appear on the belly, buttocks, thighs, breasts, or upper arms. While stretch marks never go away completely, they fade to a silvery skin tone within a few years.

There are some ways to predict the odds of sustaining stretch marks. If you're pregnant and under twenty-five, the chances of getting stretch marks go up. Another bad sign is if your mother got terrible stretch marks when she was pregnant. If you're having twins, you are practically guaranteed to develop bad stretch marks. There are all sorts of creams and emollients available to minimize stria; cocoa butter and vitamin E oil are perennial favorites among pregnant women. Although these creams are unlikely to prevent stretch marks entirely, they might help to make them a little lighter or fewer. Dermatologists are always coming up with new, more effective treatments for this problem.

Increased Susceptibility to Illness

It's a medical miracle that the body doesn't reject the baby like a bad organ transplant, but one way it accomplishes this is by lessening the mother's immunity. Thus, even if a pregnant woman looks like the picture of vitality, she is actually more likely to get sick because her immune system is handicapped. Because the nasal membranes often swell with increased mucus production and blood flow, a little cold can block up the nose and take an inordinately long time to clear.

Second Trimester: Normal 87

The American College of Obstetrics and Gynecology (ACOG) and the American Medical Association (AMA) recommend flu shots for pregnant women in the flu season, which is the fall. This protects the mother from getting seriously ill, and it stimulates her immune system to make antibodies that are then passed through the placenta to the baby, so the child is born resistant to the flu.

Increased Body Temperature

As you may recall from the normal menstrual cycle, progesterone kicks in only in the second half of the cycle. In pregnancy, the body simply continues making more and more of it. Because progesterone is *hyperthermic* (that is, it raises the body temperature), the pregnant woman is at least one degree warmer than usual, which means that she feels hotter and sweats more than usual. The sweat may even smell different. This increase in body temperature explains why pregnant women are always opening windows and fanning themselves.

Vaginal Changes

Vaginal discharge typically increases during pregnancy. Further, not only does the discharge smell more than usual, it may also smell a little different. The labia are chock-full of sweat glands—more per square centimeter than the armpits—so you can expect a lot of sweating as your body temperature rises with pregnancy. Further, the vagina is flush with additional blood flow, making it warmer. Huge amounts of hormones stimulate the production of creamy, copious secretions. All of this makes the external genitalia an extra smelly, moist place.

Like everywhere else in the body, the vagina tends to swell with increased blood flow. It can become swollen to the point of being bluish with the added pressure of the enlarged uterus. This swelling can challenge the mechanics of intercourse; some women find it uncomfortable, while others enjoy this new sensation. You may have to make some adjustments. Entry should be slower, and extra lubrication might come in handy. However, sex can play an important,

88 THE STRESS-FREE PREGNANCY GUIDE

healthy role in pregnancy, so don't let a little congestion get in the way of some intimate time with your partner.

Other Physical Changes

Obviously, the whole body, including the skeleton, has to grow to accommodate a pregnancy. One way nature accomplishes this is with a hormone called *relaxin* that literally melts cartilage—the rubbery stuff that connects bones. This allows the pelvis and rib cage to expand, sometimes dramatically. Your chest has to grow to allow for improved pulmonary capacity, and your pelvis needs to be as big as possible to allow the baby through. The chest and pelvis grow about half an inch in pregnancy and will not shrink after delivery.

Pregnant women are a little more prone to injury. First of all, the pregnancy grows so quickly that you are almost always off balance because your center of gravity is constantly changing. The body is stressed in unique ways in pregnancy; all the muscles in the back of the legs tighten, while the ones in the front stretch. The ligaments relax and stop supporting the body as strongly. Because of this, be extra cautious on your feet—keep your knees bent and look where you're going, especially on irregular terrain. The ACOG advises pregnant women to avoid downhill skiing in particular. I personally do not think skiing poses a significant health risk to the pregnant woman who also happens to be an experienced skier.

Even if you're just walking around, the added strain on your changing body also very frequently leads to leg cramps, usually at the end of a long day. The best way to avoid this is to stretch at night before getting into bed.

CHILDBEARING CAN ENHANCE YOUR FIGURE

It's subtle, but you'll probably look different after having a baby. I like to think of the postpregnancy figure as more lush, voluptuous, and sexy. You end up curvier. Most women bid adieu to straight, boyish hips.

ALAS! THAT THICK, LUSH HAIR WON'T LAST

After the baby is born, you will pretty much lose all the hair you gained in pregnancy: *number of days pregnant* \times 20 = *number of lost hairs postdelivery*. Once the pregnancy hormones stop, it can feel like your hair is coming out in clumps. The stress of delivery and postpartum sleep deprivation don't help. I've had patients think they were going bald, but I've never seen it get that bad.

Healthier Hair and Nails

Pregnant women often have the best hair and fingernails of their lives. Normally, we lose approximately twenty hairs each day. The hormones in pregnancy often prevent that hair from falling out; it grows thick and lush. Fingernails are less brittle and grow long. Pregnant women often assume that it's really the prenatal vitamins that are behind this welcome change, but women who have continued with the vitamins after pregnancy find that it's just not the same.

Because hair and nails are dead cells, you can really do just about anything to them during pregnancy as long as you're healthy. This includes hair dye, which is completely safe (and was probably never dangerous anyway). The active ingredient in most hair dyes is hydrogen peroxide, which you'd put on your finger if you had a cut so it is also okay to put in your hair. If, for some reason, you have open sores on your scalp, you should not get your hair colored. When it comes to nail treatments, avoid any that require the mani-

TREAT WITH CARE

Even though your hair may be thick and lustrous, it is impossible to know how it will react to chemicals. The dye you normally use might not produce the same color as you're used to. Or a chemical straightener might not work. Also avoid anything elaborate or exotic—if your hair turns out to be more sensitive than usual, you might lose it.

90 THE STRESS-FREE PREGNANCY GUIDE

curist to wear a mask to protect herself, just to be on the safe side. I would also recommend avoiding any particularly new, drastic hair treatments, again, just because we do not know for sure if it is safe or not.

Vision Changes

The shape of the eyeball can change with pregnancy, compromising vision. Your contact lenses may no longer be comfortable. If you don't seem to be seeing as clearly, try glasses for the duration of the pregnancy. You could also speak to your ophthalmologist. Just remember that if you get a new prescription during pregnancy, there's a good chance you'll revert to the old one once the baby's born.

Dental Work

There's an old myth that you lose a tooth with every pregnancy, but don't let this tale lull you into quietly accepting dental problems and possible tooth loss when you are pregnant. Even though your gums are more likely to bleed, don't skip your regular cleanings and exams. It should go without saying that if you have a real dental emergency—like an excruciating toothache that won't go away—you should always take care of it no matter what stage of pregnancy you're in.

All routine dental work is certainly acceptable, especially in the mid-trimester. Even dental X-rays are okay during pregnancy. These are tiny X-ray machines, and the dentist will blanket you with a lead apron. Local anesthetics, such as Novocain, are also perfectly safe.

The one real hazard in getting dental work in the second trimester is the common dental practice of adding *adrenaline* to Novocain. Adrenaline constricts the vessels nearby, preventing the anesthetic from leaking away too quickly; that is, it holds the drug in that place a little longer. This vasoconstriction can raise blood pressure, which is dangerous for the baby. If you're prone to hypertension, adrenaline can trigger an unhealthy sequence of events. *If you*

Second Trimester: Normal 91

are pregnant, you should not have adrenaline (or epinephrine, which is the same thing). You can have any plain local anesthetic such as Novocain, but no adrenaline.

Some Good News

Your hearing will almost definitely remain unchanged throughout your pregnancy!

Fetal Movement

Babies start moving at around eight weeks of gestation, and every woman feels movement by the end of the second trimester. However, it takes a certain amount of experience to feel the earliest fetal movement, which tends to be inconsistent and light. The earliest activity usually occurs when the baby is only about one pound and still has a lot of space in the uterus, so it can turn over without jabbing you. A woman pregnant with her first baby may not feel anything until after the twentieth week. Because she's never felt it before, the first-timer might mistake baby kicks for gas or an upset stomach. Women who have been pregnant before recognize fetal movement as early as sixteen weeks.

When the baby kicks, the mother feels it on the surface of her body, even though it ripples out from the uterus. The kick has to travel through the abdomen to the skin for the mother to sense it. This means that thin moms tend to feel the baby moving earlier in pregnancy.

Common Second-Trimester Testing

It can feel like the tests pile up in the second trimester, but this is the most crucial time in determining how the baby is developing. By the end of this period, you and your doctor will know every detectable thing about your child. The vast majority of all structural and chromosomal anomalies are tested for during these three

92 THE STRESS-FREE PREGNANCY GUIDE

months, so you can enter the third trimester confident about the health of your baby.

Second-Trimester Evaluation of Risk

The second-trimester evaluation of risk happens at around seventeen weeks. This is a quadruple screening, done with a blood sample. The tests seek to measure *alfa fetoprotein* (AFP), *inhibin*, *pregnancy-associated plasma protein* (PAPP), and HCG. When these four substances are present in certain quantities, it signifies a higher risk of genetic or structural defects. They are evaluated in much the same way as the hormones in the first-trimester risk evaluation; there's a huge overlap of abnormal with normal. It's the aggregate of these tests that gives you a good picture of what's going on with the baby.

The measure of AFP is used to determine the presence of a number of abnormalities, including neural tube defects and Down syndrome. AFP is highly concentrated in the fetus. If there's a hole in the baby that doesn't belong there, AFP will leak into the amniotic fluid and across the placenta. Most of these holes are called *open neural tube defects*, and there's little else that explains a very high AFP level in the mother's blood.

AFP also tends to be a little low in babies with Down syndrome; however, this finding is less meaningful than a high AFP level. There's a very small difference between low and normal, so the other three tests either reinforce or contradict that finding. Genetics labs crunch these four different numbers to estimate the risk of chromosomal abnormalities, of which Down syndrome accounts for 90 percent.

Amniocentesis

Amniocentesis (called *amnio* for short) is also done at fifteen to seventeen weeks. In this procedure, the doctor extracts amniotic fluid, which is fetal in origin, from the uterine cavity. This is done under sonographic guidance, usually with an obstetrician and a sonographer working in concert. Some obstetricians can do both if they're practiced and very good with their hands. The sonogram

A NUMBERS GAME

A lot of obstetrics is numbers. One of my patients had an abnormal quadruple test that suggested her risk of a chromosomal abnormality was one in fifty. The patient asked, "What's the false positive rate for this test?" I said, "Well forty-nine out of fifty times it's wrong." She was not satisfied with that answer because she was expecting something more absolute. But the quadruple test does not in any way say "This baby is sick." Instead, it says "We think there's a higher risk that this baby has a problem." The test is not definitive. It provides odds. There's no such thing as a false positive with screening tests because they do not yield positive/negative results.

allows the technician to watch the needle enter the uterine cavity and thereby completely avoid the baby and umbilical cord. It also allows the mom to see that the baby looks fine afterward.

Many pregnant women dread the large needle involved in an amnio, but this test is really no more or less painful than a blood test. There's a plexus of nerves under your skin; if the needle hits one of them, it hurts. If the needle misses them all, it doesn't. An amniocentesis needle is actually thinner than the ones doctors use for blood tests. It is longer, but the whole thing is rarely used, depending on the thickness of the patient's abdominal wall.

A genetic lab technician cultures (in other words, grows the cells within) the amniotic fluid extracted via amnio and then adds an enzyme to stop the process just as the chromosomes are dividing and at their plumpest. This is the only time when scientists are able to count the chromosomes because they all line up to divide; when cells are not actively dividing, chromosomes wander around the cell incognito. The lab tech typically blows up ten to fifteen nuclei, cuts out the chromosomes, and pastes them on a big board called a *karyotype*.

The geneticist then examines the karyotype for abnormalities such as discrepancies in shape, shading, and number. Twenty-two pairs of chromosomes plus one X and one Y or two XXs is normal. The geneticist looks for unusual shapes or extra pieces and analyzes the dark and light places, which is called *banding*. Through ongoing research, scientists are constantly finding new correlations

94 THE STRESS-FREE PREGNANCY GUIDE

between the shade of the chromosome and health implications. For example, banding on a particular chromosome could indicate an increased risk of diabetes.

There are normal and abnormal results, although some abnormal findings are insignificant from a health standpoint. Normal is when there are forty-six chromosomes, two of which determine the sex, and these chromosomes are all regular in appearance. The most common abnormality is when there are more or less than forty-six chromosomes. Abnormal results also include a diagnosis of any specific, rare chromosomal problem, in which case the results are either positive or negative (for example, if both the parents are carriers of cystic fibrosis, the geneticists would look for chromosomal mutations associated with this disease). Sometimes, the chromosomes are correct in number, but appear slightly abnormal and unique to the geneticist; this doesn't always have an apparent health effect.

Amniocentesis does not statistically increase your risk of having a miscarriage, but there are some concerns associated with the procedure. When the needle pierces the uterine sac, it leaves a hole in the membrane. That hole puckers and seals when you withdraw the needle, like a thumbtack pulled from a tire. Very rarely, the hole fails to close and water might leak from the gestational sac into the uterus, through the cervix, out the vagina, and down the leg. If you have a watery, heavy discharge the day after your amnio, call your doctor. These leaks frequently seal, but they may require extra care.

"INTERESTING" RESULTS?

I got an amnio report that said my patient's baby had a "funny-looking" Y chromosome. It was abnormal in a way that had never been documented before. When we tested the father's blood, we found the same goofy-looking Y chromosome, and he was perfectly healthy, both physically and mentally. Because of this, we concluded that the baby would be fine, too. There are people who have a piece of chromosome floating around in their cells, but they usually don't know about it until they become parents. The rule of thumb on these highly unusual aberrations is that if either parent has it, we assume that it's just an extraordinary but harmless variation on normal.

Second Trimester: Normal 95

Another potential problem following an amniocentesis is uterine contractions. Because the uterus is a muscle, it may tense in response to the pain of the needle—an automatic reaction to a noxious stimulus. The uterus, like the heart, is a rhythmic muscle, meaning that once stimulated, it tends to continue contracting at regular intervals. Once the uterus contracts, it could theoretically contract again ten minutes later, then ten minutes after that, and so on. It's best to rest as much as possible the day of the amnio to avoid stimulating uterine activity. Some obstetricians even recommend a glass of wine just after the test to help keep the uterus relaxed and prevent a continuing contraction pattern from becoming unstoppable; in this case, alcohol can offer more benefits than risks.

The final threat incurred with an amnio is infection. Everyone's skin has tons of bacteria on it, and if there's something unusually pathological on the belly, the needle can track it inside the abdomen. A fever within a week of an amnio could mean a serious infection as a result of a contaminant from your skin. Even though the obstetrician will take all sorts of precautions (Betadine, gloves, sterile equipment), be sure to take the extra step of washing your belly really well on the morning of the amnio.

Ultrasound

The final test in the second trimester is the *twenty-week ultrasound*. This is also called the *anomaly, birth defect, or level two sonogram*. Here, the obstetrician takes a very extensive look at the baby, first looking at the overall measurements, which are called *biometrics*. These include the length of the thighbone (femur) and the circumference of the abdomen, as well as the circumference and diameter of the head. From these measurements, the obstetrician can deduce whether or not the baby is *appropriate for gestational age*, or AGA. She'll also measure the volume of amniotic fluid, which should be of a certain quantity. It's important to locate the placenta in the uterine cavity, though an abnormal presentation of the placenta is more of a problem in the third trimester.

This key ultrasound is done at twenty weeks because at that point the uterus isn't yet crowded, which makes details easier to discern. All the internal organs are mature and ready for evaluation.

96 THE STRESS-FREE PREGNANCY GUIDE

This sonogram reveals virtually everything the obstetrician would want to examine: the internal anatomy of the brain, the chambers of the heart, the aorta, pulmonary artery, diaphragm, lungs, face, stomach, kidneys, intestines, arms, legs, fingers, toes, and so forth.

Structural anomalies (see page 100) outnumber chromosomal anomalies in the United States, so this is one of the most important obstetrical tests. If it goes well, you know for sure that your baby is structurally and anatomically normal. Usually this sonogram happens right around the time you start to feel fetal movement, so it's nice to feel and see the baby. It makes it easy for a mom to start thinking of the alien in her belly as a real person.

Congratulations!

The end of the second trimester the baby now weighs about a pound and a half and has grown from about twelve centimeters (or three inches) to at least a foot long. All the parts are matured and visible. You have ideally gained another ten to fifteen pounds, for a total of twenty (thirteen at minimum). The top of the uterus is about one to two inches above the belly button—a long way from where it used to be, buried in your pelvis. You can still see your feet, so you don't put on mismatched shoes, and you still look cute and sexy as well as a little pregnant.

SECOND-TRIMESTER NORMAL CALENDAR

Week

13	Second trimester begins.
17	Second-trimester evaluation of risk and/or amnio.
20	Ultrasound/sonogram.
20	Fetal movement.
24	On to the third trimester!