

## **Pregnancy and Bikram Yoga**

I would like to first explain that much of the information provided is gained from my own experiences as well as from other mothers I have spoken to.

To date, there is no documented scientific evidence to support *or* disprove the effects of Bikram Yoga on the pregnant body.

This information is not intended to replace medical advice. Each mother must listen to her own body and gut feelings – you know your body and your baby best.

### **1. Is it safe to do Bikram Yoga for the full term of my pregnancy?**

Yes, if you meet the following criteria:

- You have been a regular practitioner of Bikram Yoga. My recommendation is at least 6 months – 1 year of 3-5 days/week of regular practice prior to becoming pregnant. In other words, you know the series, you know how your pre-pregnant body responds to the yoga, the hot room, etc.
- Your pregnancy is low-risk.
- You feel comfortable and have discussed it with your health care provider.

If you are concerned about practicing in the first trimester (during which time the natural rate of miscarriage is the highest for any pregnancy), then you can practice at home without the heat until the first trimester has passed. In fact, you can practice the yoga with the pregnancy modifications at home for your entire pregnancy if desired.

Bikram's wife, Rajashree, has developed a pregnancy series for the Bikram Yoga class. She has removed any postures that are contra-indicated for pregnancy and has provided modifications. Her DVD is sold at both Bikram Yoga Vancouver locations. Bikram and Rajashree recommend commencing the pregnancy series at around 12 weeks gestation, or earlier if desired. Personally, I began the pregnancy series at around 8 and then 7 weeks gestation for my first and second pregnancies, respectively.

You can practice Bikram Yoga in the heated classroom for as long as you feel comfortable during your pregnancy. For example, I stopped practicing in the heat at around 39 weeks gestation, and continued to practice at home until my first child was born at 42 weeks gestation. At 39 weeks, I just felt warm enough to do it by myself at home.

You may find that you need to modify the frequency of your practice according to how you are feeling. Know that different women experience pregnancy differently, and that every pregnancy is unique. I was able to maintain 5-6 days/week of practice throughout my entire first pregnancy. The first trimester of my second pregnancy hit me harder than the first time around, and therefore I practiced 3-4 days/week during that time.

Hydrate! It is always important for any person practicing Bikram Yoga to increase their water intake and to replace electrolytes. This becomes even more important when pregnant.

**2. Are any of the positions modified and can I participate in all poses, even the ones that include lying on my back, putting pressure on my stomach, using my abdominal muscles and twisting? Isn't it dangerous to strain your abdominal muscles during the second and third trimester?**

Follow Rajashree's pregnancy modifications. Postures that compress the stomach and growing baby are omitted.

The contraction of the abdominal muscles are not contra-indicated during a low-risk pregnancy. In fact, training of the Transversus Abdominus muscle is often recommended to stabilize the spine and support the lumbo-pelvic structures during pregnancy. It also makes sense to me that if the abdominal muscles are stimulated and kept strong during pregnancy, then they will remember how to contract to assist during the birth of the baby. It is not recommended to do traditional sit-ups or crunches during pregnancy. The sit-ups are omitted in Rajashree's pregnancy series.

It is okay to lie on your back for the postures. North American medicine recommends that women lie on their side once they are past 16 weeks gestation. The thought is that if a pregnant woman lies on their back, the growing baby and uterus may obstruct blood flow from the inferior vena cava (the vessel that returns blood from the legs back to the heart) and may therefore restrict blood flow to the mother and baby. Sounds scary, doesn't it. European medicine, on the other hand, does not enforce this thought much at all. Bottom line is, if you are uncomfortable lying on your back and are feeling dizzy or short of breath, then lie on your side. The postures in class where you are on your back last for only ~ 20 seconds or less. Rajashree recommends you lie on your side for the savasana's in the floor series.

Gentle twisting is okay, and is good for your spine. Again, do what feels good. You may find that you may not be able to twist as far.

Listen to your body, and do what feels comfortable for you. This may change each time you practice, or even during a single session. Some of Rajashree's modifications do not feel great for my body, so I don't do them. I lie out instead. Some women add in their own modified pregnancy poses. That's fine too. Personally, I found that when the time came to do a posture that is contra-indicated for pregnancy (e.g. standing-head-to-knee pose), I needed a break – so I lied down for a rest until the next posture.

During pregnancy, a hormone called relaxin is released to help prepare the body for labour and delivery. Its job is to help relax the connective tissue in the body to adapt to the growing baby and uterus, and to open to allow the passage of the baby through the pelvis and birth canal. Some medical professionals might advise against doing any posture that might cause the abdominal muscles to stretch more than they are already getting with the growing baby and uterus (e.g. backbends). I have spoken to a few physiotherapists who treat pregnant women, and have received the advice to avoid poses that stretch the abdomen. In my own yoga practice, I have continued to follow the pregnancy series that includes all backbends. I personally feel very comfortable doing them, and feel that when I do them slowly and mindfully, I help my body adapt to the gradual changes. It also feels marvelous for my spine, and I believe helps to avoid low back pain related to the changes occurring in pregnancy. After sharing this with my physiotherapist colleagues, they have shifted their advice to: if it feels okay, and you are doing the posture correctly without feeling pain or strain to the abdominal muscles, then continue what feels comfortable.

### 3. Are any of the poses dangerous or un-safe in any way to my baby or me?

The postures that compress or put pressure on the uterus and baby are contra-indicated, and are excluded from Rajashree's pregnancy series. Full inversion postures are also contra-indicated during pregnancy, but Bikram's series does not include any full inversions. Again, follow what feels comfortable. If a posture, or modification of a posture feels uncomfortable – don't do it.

### 4. What effect does the heat have on my baby and myself? Is it un-safe to raise my body temperature that much?

One of the main concerns that medical professionals have is the effect of the heated room on the pregnant woman. Like I stated above – to date, there is no documented scientific evidence to support *or* disprove the effects of Bikram Yoga on the pregnant body.

The Canadian Academy of Sport Medicine (CASM) was founded in 1970, and is a not-for-profit organization of physicians committed to excellence in the practice of medicine as it applies to all aspects of physical activity.

*CASM's summary of physiological research:* "Previous studies using pregnant rat models found that elevated maternal temperatures above 39 degrees C, during the first trimester of pregnancy, was associated with a significant increase in fetal anomalies – particularly neural tube defects.<sup>1, 2</sup> Human studies, however, have not supported this finding.<sup>3, 4</sup> Researchers have established that maternal basal core temperature declines throughout pregnancy until delivery, thereby allowing for more effective thermoregulation.<sup>5</sup> This pregnancy-induced adaptation appears to be fetoprotective; a short bout of high-intensity exercise [in late pregnancy] was not associated with a rise in maternal temperature of beyond 38 degrees C or adverse fetal heart rate changes.<sup>5, 6</sup>

*Position Statement:* Preliminary studies indicate that the exercising pregnant woman may be able to tolerate mild changes in core body temperature within the established exercise guidelines (PARmed-X for Pregnancy – Appendix A)."

The pregnant mother can simply take her temperature before, during, and after class to monitor changes in body temperature. Most people think of a "normal" body temperature as an oral temperature of 98.6F (37°C). This is an average of normal body temperatures. Your temperature may actually be 1°F (0.6°C) or more above or below 98.6F (37°C). Also, your normal body temperature changes by as much as 1°F (0.6°C) throughout the day, depending on how active you are, and the time of day.

What I found in my searches on the web:

- Dr. Maureen E. Paul (Obstetrics & Gynecology, Occupational Medicine) book: *Occupational and Environmental Reproductive Hazards*. She says that when maternal core **temps** reach **102 degrees F (38.9 C or greater)** there have been reports of abnormal fetal development. Fevers this high occurring during the period of neural tube closure (days 20 to 28 after conception) have been associated with a significantly increased incidence of central nervous system related defects.
- Kenneth F. Trofatter, Jr., MD, PhD (Director of Maternal-Fetal Medicine and Professor of Clinical Obstetrics in the Department of Obstetrics and Gynecology of the University of South Carolina): "*Any source of maternal hyperthermia -*

fever, hot tubs, saunas, electric blankets, excessive sun or other environmental exposure, and hyperthermia-inducing activities – that results in **significant core temperature increase** (generally considered to be **above the threshold of 38.9 degrees C**) could potentially affect the baby, but the consequences of hyperthermia depend on the extent and duration of the temperature elevation, the timing of the exposure with regard to fetal development and, perhaps, maternal nutritional status (e.g., folic acid), concurrent medical problems, medications, genetic background and, I am sure, many other factors".<sup>7</sup>

- "In humans, an oral temperature of 37°C or a deep body (core) temperature of 38°C is considered normal. **A 2°C elevation of maternal temperature to 39°C in oral temperature or to 40°C in core temperature** is regarded as the threshold of damage. In humans, a body temperature above the upper limit of the normal range has been associated with NTDs".<sup>8</sup>
- Neural Tube Defects in the Neonatal Period. Author: Richard G Ellenbogen, BA, MD, Neurosurgeon at University of Washington: "Over the last century, teratogens implicated in the etiology of neural tube defects (NTDs) in experimental animals and in humans include potato blight, hyperthermia, low economic status, antihistamine and sulfonamide use, nutritional deficiencies, vitamin deficiencies, and anticonvulsant use. Of all the suspected teratogens, carbamazepine, valproic acid, and folate deficiency have been most strongly tied to the development of neural tube defects."<sup>9</sup>

## 5. How strenuously should I work out during Bikram Yoga?

Before pregnancy, you are used to pushing yourself, going past your limits. Now is the time to listen to your body, learn, relax, breathe, and accept changes occurring in your body. Your body will guide you – it is usually the mind that gives you trouble. Your practice will fluctuate throughout your pregnancy. Some aspects become more difficult, and some less. Go with the flow. Accept. Explore your new limits, gently.

Your yoga practice will prepare you for the physical event of labour. Yogini's are constantly expanding boundaries, pushing edges and learning how to accept and be comfortable while doing so.

## 6. How many times a week should I do attend class?

As many times as you are comfortable. For my first pregnancy, I taught 10 classes/week (2 classes/day) and practiced 5-6 days/week.

## 7. Do I get enough oxygen during a class? Is the air I breathe in good for me?

For maximum oxygen during class, go to the spots in the yoga room where there are doors (or windows). Usually, there is a crack/slit under the door where fresh air sneaks in. If there is a towel in the way, just move it. My favorite spot at the Kits studio is in the front left corner in front of the mirror door. You can also ask the instructor to open the window (if there is one) for you during class.

Tell the instructor that you are pregnant before class. Leave class at any time if you feel overheated or very uncomfortable. You can run cool water over your wrists and back of neck to cool yourself down. Move slowly, and take deep breaths. Return to the yoga room when you feel comfortable.

## 8. Does Bikram Yoga have any benefits particular to pregnant women?

Relaxation – you learn how to relax and release muscle tension. This skill is key during labour when you need to completely let go and relax between contractions, much like savasana. This helps to conserve your energy for when you need it – i.e. helping to push the baby out! A muscle that is relaxed may be less at risk for pain and tearing – all helpful in minimizing the pain experience during childbirth, and associated injury to muscle and soft tissue.

Training for labour – regular practice of Rajashree’s pregnancy yoga will get you in shape for labour. Your muscles will be strengthened and will have increased endurance. Your mind will also be strengthened which undoubtedly be an asset during labour and delivery.

## 9. How soon after giving birth is it safe to begin Bikram Yoga again?

It will depend many things: on your delivery (C-section/vaginal); complications (e.g. interventions needed – forceps, vacuum resulting in perineal tearing/injury); level of perineal injury/tearing; amount of lochia/bleeding; how you are generally recovering and coping with the new arrival.

Once you may feel that you may be ready, try doing the series at home first. (Notice how I mentioned “*feel*” that you may be ready. There is no specified timeline when a woman should return to her yoga practice postpartum). When you return to the studio, let the instructor know that you are returning from the birth of your child.

In general, it is recommended to monitor lochia flow when returning to exercise postpartum. The flow should be generally decreasing as you recover from the birth. If you exercise and there is an increase in flow or return to bright red color, then the exercise was too intense for what you are ready for. If you exercise and the flow continues to decrease, then the level of exercise/activity you did was probably okay for your level of recovery.

## 10. Are there any positions I should be careful doing?

If you have delivered your baby by C-section, you may want to continue Rajashree’s pregnancy series until you feel comfortable.

It has been recommended from some physicians to avoid a “bottom’s up” position (bottom is higher than head) until the flow of lochia has ceased. The thought is that the vessels from the placenta in the uterus are still healing and closing, and a bottom’s up position may increase the risk of air embolism in the maternal blood. This may be life threatening to the mother. This is a rare risk. Most cases of fatalities due to air embolism occur after sexual intercourse in the early postpartum period. Again, sounds very scary. I was not aware of this information when I was healing from my first pregnancy, and I continued to do all postures of the regular Bikram series. Like many recommendations for pregnancy and postpartum, it is important to gather knowledge and then make your own educated decisions.

Practicing Bikram Yoga postpartum is the same as practicing when you are pregnant – go with what feels comfortable and what you are ready for.

### **11. How many times a week should I come?**

Start slowly, listen to your body – it will tell you what it is ready for. Gradually (or maybe even quicker than you think) you can return to your normal frequency of practice.

### **12. Is Bikram Yoga a good way to get my body back into pre-pregnancy shape?**

Bikram Yoga is one of the best (if not the best – okay, I am a bit biased!) ways to bring your body back to pre-pregnancy shape.

Bikram Yoga is non-impact – an important factor to consider for postpartum mothers whose pelvic floors are recovering from birth. An injured and weakened pelvic floor is susceptible to further injury and damage when exposed to impact exercises (think of a stretched/weakened trampoline or hammock having to support pelvic organs that are bouncing up and down). Bikram Yoga will raise your heart rate and respiratory rate giving you an excellent cardiovascular exercise that will burn calories and melt fat. Your muscles, tissues and organs will receive a plentiful supply of fresh blood to facilitate their recovery. Your muscles will tone and you will be sculpted into fabulous shape. Bikram Yoga will also help you relax and cope with stress more effectively.

### **13. What about breastfeeding and Bikram Yoga?**

I have heard concerns that practicing yoga in a heated room may alter your breast milk. Secretory IgA is the predominant immunoglobulin present in colostrum and mature breast milk, and plays a key role in early infant immune function. Lovelady et al.,<sup>10</sup> demonstrated that moderate-intensity exercise in lactating women improved cardiovascular fitness without affecting levels of IgA in breast milk. [*moderate-intensity exercise*: 12-14 on 20 point Borg RPE scale → see PARMed-X page 2: target heart rate zones, RPE and talk test; or described another way: a moderate level of activity noticeably increases your heart rate and breathing rate. You may sweat, but you are still able to carry on a conversation. You can talk, but you can't sing.]

Personally, I returned to practicing in the heated room 2 weeks after giving birth. I breastfed my son exclusively for the first 6 months, and continued to breastfeed through my first trimester of this pregnancy. He has always been content after feedings, and has always been at the top of the growth charts.

It is important for all breastfeeding women to increase their intake of water as well as nutritionally sound calories. This becomes even more important when practicing yoga in a heated room. Before you come to class, empty both breasts of milk (via baby or pump) to allow yourself to be more comfortable in class.

Please feel free to contact me at [laura.werner@hotmail.com](mailto:laura.werner@hotmail.com) if you have any further questions. Also read my pregnancy testimonial that is on BYV's website [www.bikramyogavancouver.com](http://www.bikramyogavancouver.com) under 'testimonials' and then 'pregnancy'.

I wish you all the best for your journey into motherhood.

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**Appendix A**

PARmed-X for Pregnancy (attached)