

# Hot yoga and pregnancy

## *Fitness and hyperthermia*

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### Abstract

**Question** One of my pregnant patients wishes to continue her hot yoga exercises during pregnancy. Is this practice safe?

**Answer** With the increased risk of neural tube defects and possibly of other malformations among fetuses exposed to excessive heat, pregnant women should avoid practising hot yoga during pregnancy.

## Yoga chaud et grossesse

### *Condition physique et hyperthermie*

### Résumé

**Question** Une de mes patientes enceintes souhaite poursuivre ses exercices de yoga chaud durant sa grossesse. Cette activité est-elle sécuritaire?

**Réponse** Compte tenu du risque accru d'anomalies du tube neural et d'autres malformations possibles chez les fœtus exposés à une chaleur excessive, les femmes enceintes devraient s'abstenir de pratiquer le yoga chaud durant la grossesse.

The Society of Obstetricians and Gynaecologists of Canada and the Canadian Society for Exercise Physiology encourage pregnant women to maintain a good fitness level by participating in aerobic and strength and conditioning exercises without trying to reach peak performance.<sup>1</sup> With the recent growing interest in yoga, many pregnant women have been engaging in this form of physical activity. Yoga is thought to increase physical fitness, improve cardiovascular health, and manage stress, depression, and anxiety. There are many schools of yoga that typically use breathing exercises, stretching, physical postures, and meditation as forms of low-impact physical exercise. Two recent reviews of the literature have suggested that performing yoga in pregnancy is beneficial, with observational and randomized trials demonstrating improved quality of life and decreased stress, pain, anxiety, and sleep disturbances.<sup>2,3</sup> However, overall solid evidence is scarce.

One popular form of yoga, Bikram (hot) yoga, is practised at temperatures of 35°C to 40°C. To date, there are no published studies on the safety and outcomes of this form of yoga for pregnant women and their fetuses. Moreover, there is a lack of consensus among yoga clubs about allowing pregnant women into hot yoga classes. This is a concern because hyperthermia is a

known environmental teratogen in both animal models and humans. In humans, an elevated core body temperature can occur with fever, extreme exercise, saunas, and hot tubs.

In 2005, Motherisk conducted a systematic review and meta-analysis on maternal hyperthermia in the first trimester and risk of neural tube defects (NTDs) in humans.<sup>4</sup> In the studies available for that analysis, pregnant women who had maternal hyperthermia had a 2-fold increased risk of NTDs (odds ratio [OR] 1.93, 95% CI 1.53 to 2.42). The heat sources were fever ranging from 37.8°C to above 38.9°C, and external heat sources such as hot tubs, saunas, and electric blankets, producing temperatures of up to 43°C. Of note, fever did not appear to increase the risk of NTDs after adjusting for confounders.

A study investigating maternal use of hot tubs in pregnant women found that the fetuses of women who used hot tubs for any length of time more than once during the first trimester had an increased risk of gastroschisis and anencephaly (OR 1.54, 95% CI 1.10 to 2.17; and OR 1.68, 95% CI 1.05 to 2.70, respectively). Moreover, the investigators also found an increased risk of esophageal atresia and omphalocele among offspring of mothers who reported using hot tubs during pregnancy more than once for longer than 30 minutes.<sup>5</sup>

Further, excessive heat decreases the time to exhaustion and therefore increases the risk of overstretching, muscle damage, and torn cartilage due to fatigue.<sup>6,7</sup> As pregnant women bear extra weight, loose muscles and tendons might increase the risk of injury during hot yoga. Additionally, as blood pressure tends to be lower in the first trimester of pregnancy owing to progesterone relaxing blood vessel walls, excessive heat exposure might cause dizziness or fainting. With the increased risk of NTDs and possibly of other malformations in pregnant women exposed to excessive heat, practising hot yoga should be avoided. ❁

### Competing interests

None declared

### References

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## MOTHERISK

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Do you have questions about the effects of drugs, chemicals, radiation, or infections in women who are pregnant or breastfeeding? We invite you to submit them to the Motherisk Program by fax at 416 813-7562; they will be addressed in future Motherisk Updates. Published Motherisk Updates are available on the *Canadian Family Physician* website ([www.cfp.ca](http://www.cfp.ca)) and also on the Motherisk website ([www.motherisk.org](http://www.motherisk.org)).

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