

Aunty Pat Anjali's Problem Page

In the post bag this month are a couple of questions about high blood pressure:

Dear Aunty Pat

I have several students with high blood pressure (HBP) in my yoga class. I have always been told that students with high blood pressure should not do head down postures or inverted postures. Yet I have recently read that inverted postures lower blood pressure! I am totally confused.

Yes it is confusing because both can be correct! First we need to understand that blood pressure is normally measured at the level of the heart. In a normal upright position the blood pressure in the upper extremities, i.e. the head will be lower than the blood pressure at the level of the heart, and the blood pressure at the lower extremities will be higher because of the effects of gravity on the circulatory system. When we fully invert the body the blood pressure in the head increases and the blood pressure in the feet will decrease because of the effects of gravity. Also in a full inversion with the legs raised we have the additional effect of hugely increased venous return of blood from the legs and pelvic region to the heart. Cardiac output is therefore increased and the blood pressure in the whole system will increase momentarily. Semi inversions where the head is lowered below the heart but the legs are not raised, such as Adho Mukha Svanasana (Dog) and Uttanasana (standing forward bend) will raise the blood pressure in the head slightly, but not nearly as much as full inversions with the legs raised.

In a healthy individual our internal blood pressure monitors, the baroreceptors, in the region of the neck respond to the increased pressure by sending signals for the blood vessels to dilate (expand) and therefore lower the pressure in the full system. Whenever the head is lowered below the level of the heart the blood pressure in the neck will increase. This is detected and the blood pressure is lowered. In the case of Sarvangasana, the shoulderstand, the chin lock position stimulates the baroreceptors in the neck to “think” the blood pressure in the whole system is higher than it actually is and the response is to send more signals lower the blood pressure in the whole system. So this is why it is said practicing Sarvangasana can lower blood pressure.

However, the person with HBP may not respond in the same way as a healthy individual. It depends what causes the HBP. In the case of arteriosclerosis (hardening of the arteries) the arteries cannot dilate sufficiently to lower the pressure and upon inversion, the blood pressure in the head could increase to dangerously high levels.

To conclude-for safety's sake full inversions should **not** be done by people with high blood pressure due to arteriosclerosis or aging.

I have heard that people with high blood pressure should not raise their arms above their head but I do not understand why this should be so.

The reasons for this contraindication are often misunderstood leading some yoga teachers to suggest that people with HBP should never take the arms alongside the ears even when lying supine.





Again, it's mainly to do with gravity. If we elevate the arms above the head in an upright position the heart has to work against gravity to circulate the blood to the hands and fingers. A simplified analogy is to imagine that the blood vessels leading to the fingers are like a hose pipe. If we have a steady flow of water through the pipe there is no problem when the pipe is pointing down. If we point the hose pipe upwards we have to compress the hose pipe at the end, that is increase the water pressure, for the water to be squirted up effectively. So, in the body when the arms are raised, the blood pressure needs to be raised by constricting the blood vessels to maintain circulation to the fingers. That means that in someone who already has HBP the blood pressure will be increased even more. This is only the case if we are holding the arms above the head for some time in a static posture. There is no problem at all in raising and lowering the arms without holding, as in dynamic movements with the breath. There is no

problem at all in having the arms above the head when the trunk is horizontal as in lying supine or “L-shaped forward bend to a wall” (ardha Uttanasana).

To conclude: If you are teaching an asana with raised arms such as Vrksasana (tree) suggest that students with HBP have their hands in Namaste at the level of the heart. In postures such as Virabhadrasana 1 (Warrior 1), students with HBP can do the full posture dynamically without holding, or can maintain a static posture keeping the hands on the hips.

Top Tip-vigorously shaking the hands after an inverted posture will dilate the blood vessels in the extremities and therefore help to lower blood pressure back to normal.

Aunty Pat would love to hear your problems! If you have any problem to do with any aspect of yoga please email Pat directly patanjali42@aol.com , or write to the Editor.

	<p>Slight increase in blood pressure in the head</p>
	<p>Slight increase in blood pressure in the head</p>
	<p>Greater increase in blood pressure because the legs are raised</p>
<p>Picture of Virabhadrasana1 with raised arms or vrksasana with raised arms</p>	<p>Increase in blood pressure because the arms are raised above the head in a posture that is held statically for some time.</p>
	<p>no increase in blood pressure</p>