

The Need for Stress Reduction in Gestational Hypertension

A significant increase in blood volume (approximately 40-50%) naturally occurs during pregnancy to ensure there is an adequate blood supply to nourish the placenta, to protect the mother from going into shock during labour (due to excessive blood loss), and to provide a storage of fluids for breast milk production. This considerable increase often predisposes the pregnant mother to high blood pressure (hypertension) and excess swelling, especially around the feet and or ankles.

Pharmaceutical and natural diuretics decrease the body's fluid volume, which may initially lower blood pressure due to a decrease in blood volume, but may reduce blood volume below the requirements for a healthy pregnancy, causing the kidneys to compensate by conserving fluids even more. This will consequently raise blood pressure once again and defy the purpose of taking diuretics in the first place. Therefore, a natural diuretic may be risky during pregnancy, especially if used concomitantly with hypertension medication. I, therefore, do not give suggestions that may significantly lower the woman's blood pressure even more, particularly if she is already on blood pressure medication for hypertension, as this may induce a hypotensive state (very low blood pressure) and pose a risk for mother and baby.

Instead, below I have made general suggestions to support stress management, optimal circulation, and blood vessel integrity.

Stress Management and Blood Pressure Regulation

- During periods of stress, the sympathetic nervous system

(SNS) is activated and prompts the blood vessels to constrict. Maternal stress in any form is, therefore, a risk factor for hypertension, especially if it continues over an extended period of time. Deep breathing exercises, meditation, and gentle physical exercise are all useful ways to activate the parasympathetic nervous system (PSNS), which is associated with a healthy regulation of blood pressure. In short: when the body and mind are relaxed, muscles and capillaries relax and allow proper blood pressure regulation and blood circulation.

- Emotional support and connection with loved ones are powerful strategies to induce a relaxed, stress-free state. She can make a daily practice of connecting with her partner for at least 10-15 minutes, with no phones or other disruptions. Over and above the cardiovascular benefits reaped from this habit, it may also ensure their foundation as a couple is strong when the little one arrives.

Promoting Circulation

- Some foods and spices are associated with improved circulation: raw ginger, sunflower seeds, olive oil, cherries, goji berries, pumpkin seeds, cinnamon, nutmeg, turmeric, and rosemary. Including these food sources regularly in meals and snacks may support circulation and also ensure the intake of a broad variety of nutrients to support the overall health of the mother and foetus.
- If she is in a state of dehydration, the kidneys may compensate by retaining body fluids. 1.5-2 litres of water per day should ensure hydration during pregnancy.
- Dry skin brushing from the feet upwards in clockwise circles is invigorating for the skin, improves overall blood circulation and prevents “pooling” of fluids in the lower legs.

- Being sedentary for extended periods of time can impair circulation, especially if she sits on hard surfaces, which may impede blood flow from the lower legs upwards. Using a footrest while sitting on a chair to lift the feet in line with the hips may improve the blood flow from the lower legs to the rest of the body.
- Gentle exercises tailored for pregnant women may be useful in stress management and also in mobilising fluids throughout her body.
- Wearing loose-fitting flat shoes will improve comfort and reduce constrictions around the feet.

Supporting Blood Vessel Integrity

- Throughout the day, pregnant women can enjoy the following drink: a cup of lukewarm water with juice of $\frac{1}{2}$ a lemon, 1 teaspoon raw unfiltered honey, and 2-3 small pieces of raw ginger. Lemon juice contains citrate and vitamin C: nutrients associated with blood pressure regulation, improved circulation, and maintenance of arterial flexibility. Raw honey tends to have a relaxing effect on the arteries and ginger acts as a “warming” food to support circulation.
- Maternal intake of omega 3 fatty acids in adequate amounts is essential for foetal development, but it also exhibits various cardio-protective properties for the mother: regulation of blood pressure, boosting circulation, reduced risk of thrombosis (blood clots), and increased arterial flexibility. A daily dose of high quality, purified fish oil supplement (with at least 1000mg EPA and DHA) is recommended during pregnancy.

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