

Audio relaxation program may help lower blood pressure in elderly

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An audio relaxation program lowered blood pressure more than a Mozart sonata in a group of elderly people with high blood pressure, researchers reported at the American Heart Association's 62nd Annual Fall Conference of the Council for High Blood Pressure Research.

In a study of 41 elderly participants at three retirement facilities:

- Twenty participants listened three times a week for four months to a 12-minute audio-guided relaxation training program (ATP) with background sounds of ocean waves and a calming voice.
- The group of 21 participants listened to a 12-minute Mozart sonata three times a week for four months.
- Researchers recorded systolic blood pressure, diastolic blood pressure and heart rate before and after each session.

The ATP group lowered their:

- blood pressure from 141/73 millimeters of mercury (mmHg) to 132/70 mmHg and
- heart rates from 73 to 70 beats per minute.

The Mozart music listeners also lowered their:

- blood pressure levels from 141/71 mmHg to 134/69 mmHg and
- heart rates from 69 to 66 beats per minute.

The decrease in systolic blood pressure was greater in the ATP group than the Mozart group: 6.4 percent (9 mmHg) versus almost 5 percent (7 mmHg).

For both groups, the reduction in systolic blood pressures after intervention were statistically significant, although it may not reach clinical significance.

"Physiologic augmentation is difficult to achieve, especially with blood pressure study, because people can only lower their blood pressure to a certain extent," Tang said. "A 3 percent-5 percent change has been used as the cutting point in clinical research. It has been suggested that a 5 mmHg reduction in systolic blood pressure would result in a 9 percent reduction in coronary heart disease related death and 14 percent reduction in stroke related death."

However, the drop in diastolic blood pressure approached, but didn't reach, a statistical difference, with slightly more than a 4 percent drop in the ATP group and a 2.8 percent drop in the music group. The decline in heart rate showed no difference between the two groups, she added.

"Higher systolic blood pressure is very prevalent in the elderly population," said Jean Tang, Ph.D., ARNP, lead author of the study and assistant professor in the College of Nursing at Seattle University. "This program may provide yet another way to help manage hypertension in conjunction with medication, lifestyle changes, exercise, diet and stress management."

The hypertension rate in Americans more than 65 years old is between 60 percent and 80 percent, with isolated systolic hypertension accounting for 65 percent to 75 percent of cases, according to the U.S. Centers for Disease Control.

The ATP sessions consisted of listening with headphones to a CD of ocean waves in the background — a binaural sound that is calming while a voice guides listeners to relax from head to toe and do deep abdominal breathing. Binaural tones are a special kind of stereophonic sound that incorporates two tones which are of two different frequencies for brainwave entrainment.

The Mozart sonata group listened to 12 minutes of music.

"The binaural sound regulates the brain waves to the alpha range, which produces a calming effect allowing participants to concentrate," Tang said. "The relaxation method affects the parasympathetic nervous system, which lowers the blood pressure by relaxing the blood vessels."

The relaxation therapy program, used for years to correct TMJ problems (acute or chronic inflammation of the temporomandibular joint which connects the lower jaw to the skull), for chronic pain, cancer patients and to train athletes, had never been used in the elderly for blood pressure reduction.

"Both groups did really well in reducing their blood pressures," Tang said. "But the guided relaxation group did a little bit better. It is very possible that the guided relaxation group members were better able to connect their mind with their body. Some in the classical music session may have just sat through it without consciously trying to relax their body.

"We had some participants in the ATP group that were skeptical; they didn't like the man's voice and wanted to switch to the music group. But even when they didn't like the program, their blood pressure was reduced after the intervention."

Healthcare providers can use the simple program not only to help

patients manage stress, but as a supplemental option to lower blood pressure, Tang said. "This is a self-regulation tool that promotes patient autonomy in managing their health. Nursing homes or senior living facilities may use this without a doctor's order. It's noninvasive, available and has been around for 20 years."

However, long-term adherence to the program may be a problem in elderly people with high blood pressure, Tang said. Although a few individuals reported their doctors reduced their hypertension medications after regular program use, a three-month follow-up showed that only 52 percent of participants continued to use the relaxation technique regularly.

Source: American Heart Association

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