

# Better blood pressure control—by mobile phone

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An interactive web system with the help of your mobile phone can be an effective tool for better blood pressure control. Test persons lowered their blood pressure, were better able to understand how their lifestyle affects their blood pressure and actively participated in followup discussions. These results were shown in a doctoral thesis at the

University of Gothenburg.

Well controlled [blood pressure](#) reduces the risk for cardio-vascular complications. In addition to taking daily medication, persons with high blood pressure need to understand the sometime complicated connection between the blood pressure values and daily life. Blood pressure medication combined with changes in lifestyle gives good results, but despite awareness of this, few people are able to reach a well controlled blood pressure.

## **Interactive system**

In her thesis, researcher Ulrika Bengtsson developed and evaluated an interactive system for persons living with high blood pressure that, with the help of their own [mobile phone](#), can be used to self-manage the high blood pressure on a daily basis.

"The result showed statistical and clinical significance in lowering blood pressure between the first and last weeks of the study," says Ulrika Bengtsson, PhD student at the Sahlgrenska Academy, Gothenburg University.

Systolic blood pressure, on average, was lowered by 7 mmHg and [diastolic blood pressure](#) by 4.9 mmHg. The reduction generally occurred during the first weeks and then stabilized.

"The blood pressure reduction trend was fairly similar, regardless of the initial blood pressure level, blood pressure dropped," says Ulrika Bengtsson.

## **Reports in their mobile**

The patient reports their blood pressure, pulse, medication intake, lifestyle, symptoms and state of well being in their mobile. The web system sends questions, individual lifestyle related and encouraging messages and reminders to the patient's mobile. Graphic feedback is available on the Internet allowing the [patients](#) and their [healthcare professionals](#) to check blood pressure values in relation to other estimates, either on a specific day or over time.

## **Better understanding**

The results show that the use of the interactive system gave patients a better understanding of the connection between their lifestyle and their blood pressure.

"The patients actively contributed to the followup discussions that were conducted at the end of the study. Particularly by relating their blood pressure values to a context, such as a specific event of perceived stress, insufficient sleep or physical activity. The discussions primarily addressed how blood pressure can be managed in [daily life](#)," says Ulrika Bengtsson

The thesis shows how the use of an interactive system with questions and messages designed to act as a support in the treatment of high blood pressure can result in a reduction in blood pressure and function as a good basis for discussions and understanding of how the individual's lifestyle affects their blood pressure.

"However, the long-term effects on a larger number of participants should be studied," Ulrika Bengtsson points out.

Facts: The development was carried out with a person centered approach in cooperation with the patients and healthcare professionals. The patients' shared their experiences, expectations and preferences in the

development and evaluation of the system. 50 patients with [high blood pressure](#) participated in the study.

The system was first evaluated after 8 weeks for its effect on blood pressure. In the next step, audio and video recordings of the follow-up discussions were analyzed to examine how the patients' experiences of self-managing their condition impacted communication between patient and caregiver. The study was recently highlighted by the American periodical the *Journal of Clinical Hypertension*.

The thesis 'Self-management in hypertension care' was defended on 20 November.

**More information:** Link to thesis - [gupea.ub.gu.se/bitstream/2077/ ...  
pea\\_2077\\_39563\\_1.pdf](https://gupea.ub.gu.se/bitstream/2077/.../pea_2077_39563_1.pdf)

Provided by University of Gothenburg

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