**Supplementary material**

Experiment 1:

**Post hoc analysis method:** We applied model contrasts to test the two-way interaction of group X valence for every time point. In case of a significant two-way interaction, we examined the group differences for each valence (neutral/aversive) separately. In addition, based on previous evidence of a decrease in BP levels in response to aversive stimuli38–41, we used the model to compare the interaction between group and valence in two parameters: (a) The *slope* from the block onset to the minimum point during the stimulus exposure period and (b) the *minimum* *point* the BP level reached during the stimulus exposure period42. All analyses were FDR-corrected.

**Post hoc results for diastolic blood pressure reactivity:** Further analyses to explain the three-way interaction (group X valence X time) focused on the differences between valence and group at each second of the stimulus exposure and recovery periods. The differences between valence and groups reached significance at all time points between the 24th–53rd seconds and 86th–101st seconds (all *p*s *<* 0.05). Post hoc comparisons revealed that during time points 24–53, there was a different diastolic BP reaction between conditions, as both groups reacted with a larger decrease to aversive compared to neutral pictures (all *p*s *<* 0.05). In addition, during time points 35–53, group differences were found in the reaction to aversive pictures, indicating that prehypertensives had a larger decrease in BP levels compared to the normotensives group. At time points 86–100 (time point 101 was marginally-significant (p = 0.056)), differences in diastolic BP reaction to aversive compared to neutral pictures were found only in the prehypertensives group, indicating a slower recovery back to baseline in response to aversive pictures only in this group (all *p*s *<* 0.05).

Slope and minimum point analysis: Examination of the slope (i.e., the decline from the 5-second post block presentation to the minimum point in the stimulus exposure period) revealed an interaction between group and valence (B = -1.821, t = ‑3.13, p < 0.005). Post hocanalyses showed that prehypertensives reacted to aversive compared to neutral pictures with a steeper decline (B = -1.315 , t = -2.99, p = 0.003), while in the normotensive group, the slope did not differ between aversive and neutral pictures (B = 0.50 , t = 1.33, p = 0.184). Examination of the minimum point (the minimum BP level reached during the stimulus exposure period) revealed a marginally-significant interaction between group and valence (B = 0.670, t = 1.78, p = 0.0755). Post hocanalyses showed that this interaction resulted from a lower minimum point of BP reaction to aversive compared to neutral pictures in the prehypertensive group (B = 1.069, t = 4.06, p < 0.0001), while in the normotensive group, no differences between neutral and aversive pictures were found (B = 0.370, t = 1.27, p = 0.205).

**Post hoc results for systolic blood pressure reactivity:** Further analyses to explain the three-way interaction (group X valence X time) focused on the differences between valence and groups at each second during the stimulus exposure and recovery periods. The differences between valence and group reached significance at all the time points between 15–23 seconds, 34–62 seconds, 75–89 seconds and 108–110 seconds (all *p*s *<* 0.05). Post hoc comparisons revealed that during time points 15–23, differences in systolic BP reaction were found between aversive and neutral pictures only in the prehypertensive group (all *p*s *<* 0.05). In contract, during time points 34–54 and 84–89, there was a different systolic BP reaction to aversive and neutral pictures only in the normotensive group (all *p*s *<* 0.05), which demonstrated a larger systolic BP decrease to aversive compared to neutral pictures. In addition, at time points 55–84 and 89, both groups showed differences in their response to aversive compared to neutral pictures (all *p*s *<* 0.05) and responded to the aversive pictures with lower levels of BP.

Slope and minimum point analysis: Additional analyses examining the slopes and minimum point interactions between group and valence were not significant (B = ‑0.114, t = -0.17, p = 0.8636; B = -0.536, t = -1.07, p = 0.283).

Experiment 2:

**Post hoc analysis method:** We conducted post hoc analysis applying model contrasts to test differences between the groups at each time point. Similarly, based on previous evidence of an increase in BP levels in response to IHE18–25, model contrasts were used to test the group differences in (a) the *slope* from block onset to the *maximum point* during the 15 seconds of the IHE period and (b) the maximum point the BP level reached 5 seconds after the block onset to the maximum point during the 15 seconds of the IHE period. All the analyses were FDR-corrected.

**Post hoc results for diastolic blood pressure reactivity:** Further analyses to explain the two-way interaction (group X time) focused on the differences between groups at every second during the block presentation. The diastolic BP reaction differed between groups at all the time points between the 7th–21st seconds and the 30th–35th seconds following the block onset (all *p*s *<* 0.05), indicating a greater increase in BP in the prehypertensives group.

Slope and maximum point analysis: Examination of the slope revealed group differences in BP elevation (B = -2.806, t = -3.35, p < 0.001). Asteeper elevation was found in the prehypertensive group (B =10.529, t(330) = 17.95, p < 0.0001) compared to the normotensive group (B = 7.723, t(330)=12.94, p < 0.0001). In addition, a significant difference between groups was found at the maximum point (B = -2.766, t(330) = ‑3.12, p < 0.005), resulting from a larger elevation in the prehypertensive group (B = 10.196, t(330) = 15.63, p < 0.0001) compared to the normotensive group (B = 7.429, t(330) = 12.33, p < 0.0001).