**Supplementary Results**

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**Supplementary Figure 1. Time courses of skin conductance responses (SCR) for each session and group are consistent with the model-bases analysis and show that stimulus discrimination was similar in both groups during acquisition but increased in the prazosin group during extinction and re-extinction.** The level of SCR response was determined by taking the base-to-peak difference for the first waveform (in microSiemens, mS) with the base within the 0.5–4.5 s window after stimulus onset. The minimal response criterion was 0.02 mS. The raw SCR scores were square-root transformed and scaled according to each subject’s unconditioned response by dividing each response by the mean response to the shock. Responses for acquisition, extinction, and re-extinction after administration of placebo (top) and prazosin (bottom) are shown. Extinction and re-extinction started with a CS- presentation and thus involved one additional CS- (trial 0); subsequent presentations of CS+ and CS- were counterbalanced. Error bars denote standard errors.

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**Supplementary Figure 2. Time courses of aSNA responses for each session and group confirm that stimulus discrimination was similar in both groups during acquisition but increased in the prazosin group during extinction and re-extinction.** Mean logarithmized anticipatory sudomotor nerve activity estimates (aSNA) for acquisition, extinction, and re-extinction after administration of placebo (top) and prazosin (bottom) are shown. Estimates of aSNA indicate the anticipation of an aversive event within the time window of stimulus presentation. These were calculated by inverting a forward model that describes how (hidden) SNA translates into an (observable) SCR using a variational Bayes approximation. A unit increase in aSNA corresponds to an increase in SCR of 1 μ S. Extinction and re-extinction started with a CS- presentation and thus involved one additional CS- (trial 0); subsequent presentations of CS+ and CS- were counterbalanced. Error bars denote standard errors.

**Supplementary Table 1: Stimulus discrimination (CS+ minus CS-) for each group, session, and phase using model-based SNA and base-to-peak scored SCR data.**

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| **Base-to-peak scored SCR** | | | | | | | |
| **Group** | **Session** | **Phase** | ***t*** | **df** | ***P*** |  | **Cohen's *d*** |
| Placebo | Acq | all | 4.57 | 18 | 0.0002 | \*\*\* | 1.05 |
| Placebo | Acq | early | 4.01 | 18 | 0.0008 | \*\*\* | 0.92 |
| Placebo | Acq | late | 3.67 | 18 | 0.0017 | \*\* | 0.84 |
| Placebo | Ext | all | 2.51 | 18 | 0.0217 | \* | 0.58 |
| Placebo | Ext | early | 1.17 | 18 | 0.2569 |  | 0.27 |
| Placebo | Ext | late | 4.6 | 18 | 0.0002 | \*\*\* | 1.05 |
| Placebo | Reext | all | 1.54 | 17 | 0.1414 |  | 0.36 |
| Placebo | Reext | early | 2.3 | 17 | 0.0343 | \* | 0.54 |
| Placebo | Reext | late | 0.37 | 17 | 0.7166 |  | 0.09 |
| Prazosin | Acq | all | 2.55 | 18 | 0.0202 | \* | 0.58 |
| Prazosin | Acq | early | 0.6 | 18 | 0.5581 |  | 0.14 |
| Prazosin | Acq | late | 3.51 | 18 | 0.0025 | \*\* | 0.81 |
| Prazosin | Ext | all | 4.3 | 18 | 0.0004 | \*\*\* | 0.99 |
| Prazosin | Ext | early | 4.49 | 18 | 0.0003 | \*\*\* | 1.03 |
| Prazosin | Ext | late | 2.28 | 18 | 0.0353 | \* | 0.52 |
| Prazosin | Reext | all | 3.83 | 18 | 0.0012 | \*\* | 0.88 |
| Prazosin | Reext | early | 3.61 | 18 | 0.002 | \*\* | 0.83 |
| Prazosin | Reext | late | 2.34 | 18 | 0.031 | \* | 0.54 |
| **Model-based SNA** | | | | | | | |
| Placebo | Acq | all | 2.9 | 18 | 0.0097 | \*\* | 0.66 |
| Placebo | Acq | early | 2.83 | 18 | 0.011 | \* | 0.65 |
| Placebo | Acq | late | 1.76 | 18 | 0.095 | + | 0.4 |
| Placebo | Ext | all | 1.55 | 18 | 0.1394 |  | 0.35 |
| Placebo | Ext | early | 0.83 | 18 | 0.4198 |  | 0.19 |
| Placebo | Ext | late | 3.71 | 18 | 0.0016 | \*\* | 0.85 |
| Placebo | Reext | all | 1.3 | 17 | 0.21 |  | 0.31 |
| Placebo | Reext | early | 1.72 | 17 | 0.1032 |  | 0.41 |
| Placebo | Reext | late | -0.01 | 17 | 0.9916 |  | 0 |
| Prazosin | Acq | all | 4.1 | 18 | 0.0007 | \*\*\* | 0.94 |
| Prazosin | Acq | early | 2.44 | 18 | 0.026 | \* | 0.56 |
| Prazosin | Acq | late | 2.93 | 18 | 0.009 | \*\* | 0.67 |
| Prazosin | Ext | all | 5.04 | 18 | 0.0001 | \*\*\* | 1.16 |
| Prazosin | Ext | early | 2.44 | 18 | 0.026 | \* | 0.56 |
| Prazosin | Ext | late | 3.9 | 18 | 0.001 | \*\* | 0.9 |
| Prazosin | Reext | all | 4.76 | 18 | 0.0002 | \*\*\* | 1.09 |
| Prazosin | Reext | early | 2.44 | 18 | 0.026 | \* | 0.56 |
| Prazosin | Reext | late | 3.67 | 18 | 0.0017 | \*\* | 0.84 |

*Abbreviations*: Acq, acquisition; Ext, extinction; Reext, re-extinction; df, degrees of freedom; SNA, sudomotor nerve activity; SCR, skin conductance response. +, P < 0.1; \*, P < 0.05; \*\*, P < 0.01; \*\*\*; P < 0.001.

***Post hoc comparisons of phases and stimuli within sessions***

We compared the stimulus discrimination between the late phase of acquisition (second half) and the early phase of extinction (first half) between groups. Stimulus discrimination was similar in late acquisition in both groups (*P* = 0.9) and increased from late acquisition to early extinction in prazosin but not placebo, although this interaction of group x stage did not quite reach significance (*F*(1, 35) = 3.01, *P* = 0.09).

As evident from the time courses (Supplementary Figure 2), the response to the CS+ decreased over time in extinction and re-extinction in both groups, indicated by lower responses in late extinction/re-extinction compared to early extinction/re-extinction (all *P* < 0.001) but did not differ between groups in early or late extinction and re-extinction (all *P* > 0.71). Responses to the CS- also decreased over time in extinction/re-extinction in both groups (all *P* < 0.001) but responses to the CS- were significantly lower in the prazosin group compared to the placebo group in late extinction and early and late re-extinction (all *P* < 0.05).

Regarding spontaneous recovery, threat discrimination in late extinction and early re-extinction were not significantly different in placebo (*F*(1, 17) = 0.11, *P* = 0.74) or prazosin (*F*(1, 18) = 3.34, *P* = 0.08) and similar in both groups, i.e., no group x session interaction (*F*(1, 35) = 2.25, *P* = 0.14) was evident.

Together, these findings indicate that the experiment successfully induced threat learning on day 1 in each group and threat extinction and re-extinction on days 2 and 3 in each group. Although there was some evidence for spontaneous recovery in the prazosin group, the effect did not quite reach statistical significance, and it did not significantly differ from the placebo group.

***Analysis of skin conductance response using base-to-peak data***

Results of the manually scored peak-to-peak SCR data were consistent with the model-based SNA data; the three-way interaction was evident using peak-to-peak SCR data (χ2 (2) = 6.14, *P* = 0.046) and was driven by higher threat discrimination in extinction and re-extinction but not acquisition in the prazosin compared to the placebo group. This interaction was also evident when we used ANOVA instead of linear mixed models (*F*(2, 70) = 3.81, *P* = 0.0268).