Online Supplementary Materials.

When participants reported experiencing stress since the last assessment, they were asked three additional questions to further characterize these experiences. These items assessed how much of the time participants were feeling stressed, how severe their feelings of stress were, and how successful they believed they were in coping with stress. Responses to these items were used to test the secondary hypothesis that for the subset of measurement occasions when individuals endorsed feelings of stress since the previous assessment, MA training would improve perceptions of coping efficacy and decrease the severity and duration of stress relative to both MO training and NT control.

Methods.

Stressor severity was assessed by asking participants how severe their experiences of stress were since the previous assessment on a seven-point Likert scale with anchors at 1 (*mild*), 4 (*moderate*), and 7 (*severe*). Stress duration was assessed by asking participants how much of the time they felt stressed since the previous assessment using a seven-point Likert scale from 1 (*very little, 0-10%*) to 7 (*almost the entire time, 90-100%*). Coping success was assessed by asking participants how successful they were in coping with stress since the previous assessment using a 1 (*not at all*) to 7 (*extremely*) scale.

Results.

EMA Appraisal of Stressful Experiences

To better understand how individuals appraised stressful experiences when they did occur, exploratory analyses were conducted using the subsample of assessments wherein participants reported experiencing any stress since the previous assessment (n=1565; 57.52%). It is important to note that these secondary analyses should be treated with caution because they

examine only a subsample of all assessment occasions (57%), and are therefore underpowered. Additionally, and perhaps more problematic for rigorously evaluating these effects, there were significant base rate condition differences in the proportion of assessments that participants endorsed experiencing stress since the previous assessment at post-intervention, with NT control participants reporting more occasions stressed at post-intervention. ($\chi^2(2)=9.68$, $p=.0079$; MA=45.1%, MO=49.9%, NT=69.4%). (Note that this base rate difference is actually a strength of the main study findings in that they show mindfulness intervention reduces occasions stressed, as described in the main text).

When participants reported experiencing stress since previous assessment, they were asked three follow-up questions to ascertain: (i) how much of the time they were feeling stressed (stress duration); (ii) how severe their experiences of stress were since the previous assessment (stress severity); and (iii) how successful they believed they were in coping with stress (coping success). It was hypothesized that MA participants would have greater improvements in all outcomes compared to both MO and NT participants, as indicated by decreased stress duration and stress severity and increased coping success. To test these hypotheses, 3-level MLMs were used to evaluate the Time x Condition interaction.

Stress Duration. There were main effects of condition ($\chi^2(2)=6.85$, $p=.0326$) and time ($\chi^2(1)=55.68$, $p<.0001$). More importantly and consistent with prediction, these effects were qualified by an interaction between time and condition ($\chi^2(2)=11.05$, $p=.0040$). Both MA and MO participants showed decreases in the proportion of time they reported feeling stressed from baseline to post-intervention (MA mean change = .78, $p<.0001$, $d=.68$; MO mean change = .63, $p<.0001$, $d=.56$); there was no change in the NT group (NT mean change = .18, $p=.209$, $d=.17$). Relative to NT participants, both MA ($\chi^2(1)=10.88$, $p=.0010$, $d=.52$) and MO participants

($\chi^2(1)=5.85$, $p=.0156$, $d=.39$) showed a decrease in the proportion of time they reported feeling stressed. However, while effects were in the same direction as the main text analyses, there was no difference between MA and MO participants in change over time in stress duration for occasions when feelings of stress since the previous assessment were reported ($\chi^2(1)=0.92$, $p=.3380$, $d=.13$). (See Table S1 for condition means).

Stress Severity. There was no main effect of condition on the reported severity of stress ($\chi^2(2)=3.05$, $p=.2180$) but there was a main effect of time ($\chi^2(1)=59.39$, $p<.0001$). Consistent with prediction, an interaction between time and condition was found ($\chi^2(2)=9.98$, $p=.0068$). Participants in the MA and MO conditions decreased in stressor severity ratings from baseline to post-intervention (MA mean change = .81, $p<.0001$, $d=.81$; MO mean change = .61, $p<.0001$, $d=.63$); there was no change in the NT group (NT mean change = .24, $p=.109$, $d=.23$). Relative to NT participants, both MA ($\chi^2(1)=9.97$, $p=.0016$, $d=.57$) and MO participants ($\chi^2(1)=4.09$, $p=.0432$, $d=.38$) showed decreases in stressor severity ratings. There was no difference between MA and MO participants in change in stress severity for occasions when participants reported experiencing stress since previous assessment ($\chi^2(1)=1.60$, $p=.2061$, $d=.20$).

Coping Success. There was no main effect of condition in coping success ($\chi^2(2)=1.45$, $p=.4848$) but there was a main effect of time ($\chi^2(1)=81.15$, $p<.0001$). Consistent with prediction, there was an interaction between time and condition ($\chi^2(2)=29.86$, $p<.0001$). While participants in the MA and MO conditions improved in coping efficacy from baseline to post-intervention (MA mean change = .96, $p<.0001$, $d=.96$; MO mean change = .75, $p<.0001$, $d=.77$), there was no change in the NT group (NT mean change = .06, $p=.663$, $d=.06$). Relative to NT participants, both MA ($\chi^2(1)=29.13$, $p<.0001$, $d=.89$) and MO participants ($\chi^2(1)=16.77$, $p<.0001$, $d=.68$)

increased in coping efficacy on stressful occasions. There was no difference between MA and MO participants in coping success change over time ($\chi^2(1)=1.98$, $p=.1593$, $d=.21$).

Discussion.

While MA participants had greater reductions in both state stress and the proportion of assessment occasions that they reported experiencing stress relative to MO participants, MA and MO participants did not differ in how their ratings of stress severity, stress duration, or coping success changed over time when stressful events did occur (though both experienced improvements relative to NT participants). One possible reason for this lack of difference is that these analyses were underpowered because participants were only asked these additional questions if they indicated experiencing stress since the previous assessment; overall, participants reported experiencing stress in less than 60% of all assessments. Consistent with the possibility that these analyses were underpowered for detecting between-group differences, effect sizes for the within-group mean change from baseline to post-intervention for appraisals of stressful experiences were similar in magnitude to those for stress ratings and proportion of occasions stressed, as reported in the main text analyses. Moreover, there were significant differences between conditions at post-intervention in the proportion of assessments that participants reported experiencing stress. MA and MO participants reported experiencing stress since the previous assessment less than half of the time at post-intervention, while control participants reported experiencing stress since the previous assessment nearly 70% of the time; additionally, MA participants had greater reductions in the proportion of assessment occasions that they reported experiencing stress from baseline to post-intervention than MO participants. Future research is needed to better understand how monitoring and acceptance skills affect appraisals of stressful experience.

Table S1.

Appraisals of stressful experiences at baseline and post-intervention by study condition

Outcome	Monitor + Accept (Pre and Post N=51)			Monitor Only (Pre N=51; Post N=46)			No Treatment Control (Pre N=26;Post N=28)			Time x Condition Difference
	Pre	*Post*	*d*	*Pre*	*Post*	*d*	*Pre*	*Post*	*d*	
Duration	3.35 (.16)	2.57 (.16)	.68	3.21 (.16)	2.58 (.16)	.56	3.61 (.22)	3.42 (.21)	.17	**$\chi^2(2)=11.05$, $p=.004$**
Severity	3.57 (.14)	2.76 (.14)	.81	3.60 (.14)	2.99 (.14)	.63	3.66 (.20)	3.43 (.18)	.23	**$\chi^2(2)=9.98$, $p=.007$**
Coping Success	3.33 (.14)	4.29 (.14)	.96	3.61 (.14)	4.36 (.14)	.77	3.71 (.20)	3.77 (.19)	.06	**$\chi^2(2)=29.86$, $p<.001$**

Note: Data are reported as means (SE) adjusted for observation number within day (coded 0-4). *d* = Cohen's *d* effect size estimate. Participants were asked additional questions assessing stress duration, stress severity, and coping success for the subsample of assessments where they reported experiencing stress since previous assessment (*n*=1565; 57.52% of total assessments).