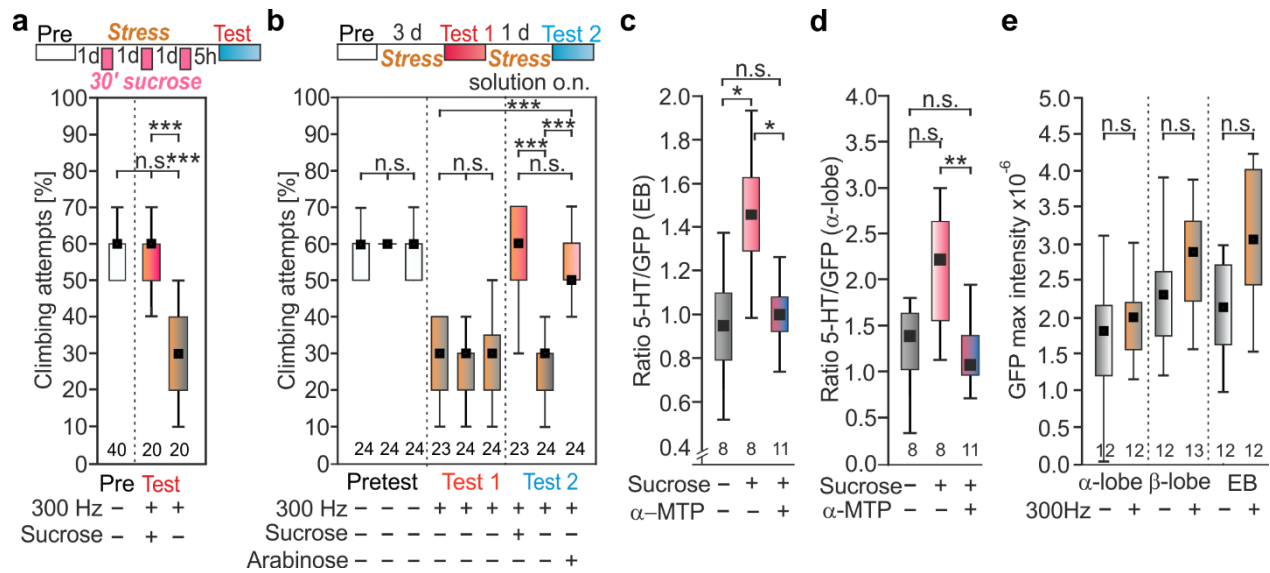
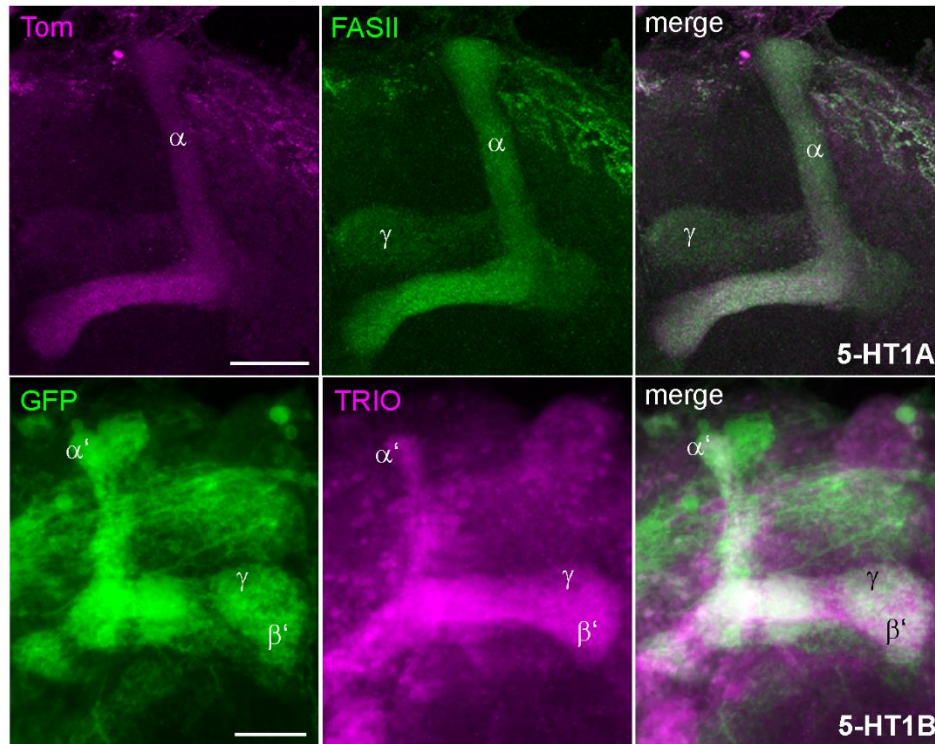


**Supplementary Figure 1 | Visual and odour stimuli enhance the motivation for trying to overcome a broad gap via mushroom body  $\alpha$ - $\beta$ -lobes.** Rate of climbing initiation of CS males at a just insurmountable gap of 4.5 mm width. Ten approaches to the gap per male fly. **(a)** An attractive visual landmark (dark vertical stripe with contact to the ground) as well as an attractive odour (yeast-apple juice) coming from the distal side of the gap enhance the fraction of climbing attempts as compared to a featureless climbing block. The combination of odour and visual cues is most effective. **(b)** Mapping of the odour-induced enhancement of climbing initiation by selective blocking the chemical synapses of groups of mushroom body Kenyon cells by UAS-TNT expression<sup>S1</sup>; wild-type CS for comparison. After a pre-test without odour half of the flies within a test group were tested 24h later and starved for 16h again without odour and the other half with yeast-apple juice odour coming from the distal side. A predominant block of  $\gamma$ -lobe neurons (*H24-GAL4*) or  $\alpha'$ - $\beta'$ -lobes (*c305a-GAL4*)<sup>S2</sup> does not impede the odour-induced increase of motivation. A predominant block of  $\alpha$ - $\beta$ - $\gamma$ -lobes (*mb247-GAL4*) or just  $\alpha$ - $\beta$ -lobes (*c739-GAL4*) precludes enhancement of motivation. **(c)** Corresponding experiment to (b) for mapping the

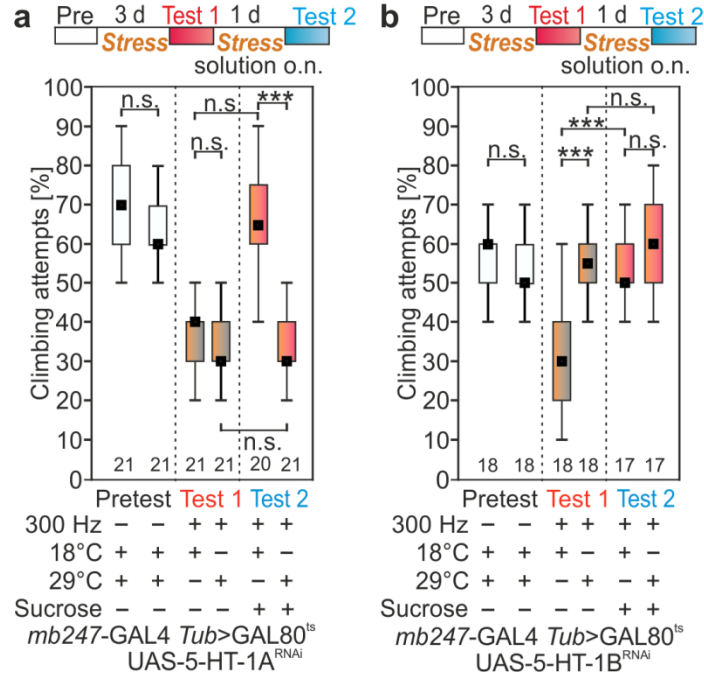
visually induced enhancement of climbing initiation by a dark vertical stripe behind the distal gap-side. Again, blocking of  $\gamma$ -lobes (*H24-GAL4*) or  $\alpha'$ - $\beta'$ -lobes (*NP1131-GAL4*)<sup>S2</sup> leaves the motivational enhancement intact. A predominant block of  $\alpha$ - $\beta$ - $\gamma$ -lobes (*mb247-GAL4*) or just  $\alpha$ - $\beta$ -lobes (*c739-GAL4*) precludes visual enhancement of motivation. Black squares, medians; boxes, 25% and 75% quartiles; whiskers, 10% and 90% quantiles; numbers of animals tested are indicated below the boxes; n.s., not significant; \*,  $p < 0.05$ ; \*\*,  $p < 0.01$ ; \*\*\*,  $p < 0.001$ ; Mann-Whitney-U test.



**Supplementary Figure 2 | Sweet sensation can prevent or relieve the depression like state.** (a) After each full-day vibration treatment (10 h), flies were put on 5% sucrose solution for 30 min and thereafter on regular fly food overnight. This daily treatment prevents the depression-like state. (b) Treating stressed flies overnight with either 5% sucrose or 5% arabinose relieves them from the depressive-like state. Note that arabinose has no caloric value to *Drosophila* suggesting that the sense of sweet can ameliorate the depressive-like state. (c-d) Sucrose offered overnight increases the 5-HT level in the entire brain in comparison to flies left overnight on water. 5-HT level does not increase when the blocker of 5-HT synthesis  $\alpha$ -methyl-DL-tryptophan ( $\alpha$ -MTP; 20mM) is added to the sucrose solution. 5-HT level was quantified from confocal stacks stained with 5-HT antibody of *189Y-GAL4>UAS-mCD8::GFP* flies. In the ellipsoid-body region layers with the broadest GFP expression were sampled in 22.5  $\mu$ m z-projections. At the  $\alpha$ -lobes of the mushroom body all layers expressing GFP were sampled (see Fig. 4c). (e) *189Y-GAL4* driven GFP expression does not change significantly upon stress application (control for 5-HT measurements in Fig.4d; z = 22.5  $\mu$ m). Black squares, medians; boxes, 25% and 75% quartiles; whiskers, 10% and 90% quantiles; numbers of animals tested are indicated below the boxes. n.s., not significant; \*, p<0.05; \*\*, p<0.01; \*\*\*, p<0.001; Kruskal-Wallis test.



**Supplementary Figure 3 | Expression analysis of the 5-HT-1A and 5-HT-1B driver lines.** (a) The UAS-CD4::tandem-Tomato (Tom; magenta) was used to report the expression pattern of the 5-HT-1A-GAL4 driver line<sup>S3</sup>. A weak but specific signal is detected in the  $\alpha$ -/ $\beta$ -Kenyon cells of the mushroom body (52.5  $\mu\text{m}$  z-projection). Anti-Fasciclin II (FASII; green) was used to visualize the  $\alpha$ -/ $\beta$ -lobes (and weakly the  $\gamma$ -lobes) of the mushroom body. (b) Expression of mCD8-GFP (GFP; green) in the pattern of the 5-HT-1B driver line<sup>S4</sup> is detected in the  $\alpha'$ -/ $\beta'$ - and  $\gamma$ -Kenyon cells of the mushroom body (54.75  $\mu\text{m}$  z-projection). Anti-TRIO (magenta) was used to visualize the  $\alpha'$ -/ $\beta'$ - and  $\gamma$ -lobes) of the mushroom body. Scale bars denote 25 $\mu\text{m}$ .



**Supplementary Figure 4 | Conditional knock down of 5-HT-1A and 5HT-1B receptor genes in the adult mushroom body.** To restrict the RNAi mediated knock downs to the adult stage the *mb247-GAL4* driver line (expresses in the  $\alpha$ -/ $\beta$ - and  $\gamma$ -Kenyon cells of the mushroom body<sup>S2</sup>) was combined with the ubiquitously expressed temperature-sensitive GAL4 repressor transgene *Tub>GAL80<sup>ts</sup>* (ref. S5). Flies were raised at the restrictive temperature of 18°C and tested for the motivation to climb at the 4.5mm gap (Pretest). After each day of stress application (~22°C lab temperature) the experimental group was shifted to 29°C overnight, whereas the controls were set on 18°C again. **(a)** Knock down of 5-HT-1A receptor gene expression (#25834) in the adult mushroom body prevents the sucrose relief of the depressive-like state. **(b)** Knock down of 5-HT-1B receptor gene expression (#27634) in the adult mushroom body conveys resilience to the vibration stress. Therefore feeding sucrose to the stressed flies changes the motivation to climb only in the control (18°C) group. Black squares, medians; boxes, 25% and 75% quartiles; whiskers, 10% and 90% quantiles; numbers of animals tested are indicated below the boxes. n.s., not significant; \*,  $p < 0.05$ ; \*\*,  $p < 0.01$ ; \*\*\*,  $p < 0.001$ ; Kruskal-Wallis test.

## Supplementary Table 1 | Statistical analysis for Figure 1.

Tab. 1a refers to data presented in Figure 1a.

p-values of the KOLMOGOROV-SMIRNOV-Test (KS); LILLIFORS-Tests (Lillif) and SHAPIRO-WILK-Test (SW)

	N	Std.Dev.	p KS	p Lillif	p SW
<b>Pretest stressed group</b>	50	0.7825	< 0.01	< 0.01	< 10 <sup>-5</sup>
<b>Pretest control group</b>	50	0.7071	< 0.01	< 0.01	< 10 <sup>-5</sup>
<b>Test 1 stressed group</b>	20	1.3018	< 0.20	< 0.01	= 0.0606
<b>Test 1 control group</b>	20	1.1743	< 0.15	< 0.01	= 0.1166
<b>Test 2 stressed group</b>	15	1.7182	> 0.20	> 0.20	= 0.7916
<b>Test 2 control group</b>	14	0.9972	> 0.20	< 0.05	= 0.1737
<b>Test 3 stressed group</b>	15	1.5523	< 0.20	< 0.01	= 0.0382
<b>Test 3 control group</b>	15	1.3558	> 0.20	< 0.15	= 0.1543

Comparison of the unpaired median data by the MANN-WHITNEY-U-Test (MannU) at the individual days.

Group	U	Z	2*1 sided exact p
<b>Pretest stress vs. control</b>	1159.00	-0.6273	0.5343
<b>Test 1 stress vs. control</b>	195.50	-0.1217	0.9042
<b>Test 2 stress vs. control</b>	79.00	-1.1347	0.2703
<b>Test 3 stress vs. control</b>	37.00	-3.1316	0.0012

Comparison of the unpaired median data by the KRUSKAL-WALLIS-TEST (K-W).

Upper row: multiple p-values; lower row: z-values

	(2)	(3)	(4)	(5)	(6)	(7)	(8)
K-Wallis-Test: H(7 N=199)=37.4259 p< 10 <sup>-5</sup>							
<b>Pretest/stressed (1)</b> R: 111.93	~1.0000 0.5444	~1.0000 0.6337	~1.0000 0.4745	0.2633 2.5970	~1.0000 1.4234	< 10 <sup>-5</sup> 4.6516	~1.0000 0.6270
<b>Pretest/control (2)</b> R: 118.20	--	~1.0000 1.0452	~1.0000 0.8860	0.0843 2.9668	~1.0000 1.7835	< 10 <sup>-5</sup> 5.0214	~1.0000 0.9968
<b>Test 1/stressed (3)</b> R: 102.28	--	--	~1.0000 0.1332	~1.0000 1.7475	~1.0000 0.7540	0.0122 3.5183	~1.0000 0.0496
<b>Test 1/control (4)</b> R: 104.70	--	--	--	~1.0000 1.8708	~1.0000 0.8749	0.0076 3.6416	~1.0000 0.1728
<b>Test 2/stressed (5)</b> R: 67.90	--	--	--	--	~1.0000 0.8991	~1.0000 1.6564	~1.0000 1.5883
<b>Test 2/control (6)</b> R: 87.143	--	--	--	--	--	0.3223 2.5268	~1.0000 0.6615
<b>Test/stressed (7)</b> R: 33.067	--	--	--	--	--	--	0.0329 3.2447
<b>Test/control (8)</b> R: 101.30	--	--	--	--	--	--	--

**Tab. 1b** refers to data presented in Figure 1b.

p-values of the KOLMOGOROV-SMIRNOV-Test (KS); LILLIFORS-Tests (Lillif) and SHAPIRO-WILK-Test (SW)

Group	N	Std.Dev.	p KS	p Lillif	p SW
stressed	46	13.3221	> 0.20	< 0.15	= 0.0224
control	51	12.0736	> 0.20	> 0.20	= 0.7206

Comparison of the unpaired median data by the MANN-WHITNEY-U-Test (MannU) of the walking activity of the stressed and the control group

Group	U	Z	2*1 sided exact p
stressed vs. control	772.00	-2.8971	0.0035

**Tab. 1c** refers to data presented in Figure 1c.

p-values of the KOLMOGOROV-SMIRNOV-Test (KS); LILLIFORS-Tests (Lillif) and SHAPIRO-WILK-Test (SW)

Group	N	Std.Dev.	p KS	p Lillif	p SW
stressed	33	233.4105	< 0.05	< 0.01	= 0.0001
control	34	189.6690	< 0.05	< 0.01	< 10 <sup>-5</sup>

Comparison of the unpaired median data by the MANN-WHITNEY-U-Test (MannU) of latency time (courtship activity) of the stressed and the control group

Group	U	Z	2*1 sided exact p
stressed vs. control	314.50	3.0914	0.0017

**Tab. 1d** refers to data presented in Figure 1d.

p-values of the KOLMOGOROV-SMIRNOV-Test (KS); LILLIFORS-Tests (Lillif) and SHAPIRO-WILK-Test (SW)

Group	N	Std.Dev.	p KS	p Lillif	p SW
stressed	63	24.5805	< 0.01	< 0.01	< 10 <sup>-5</sup>
control	74	19.1411	< 0.01	< 0.01	< 10 <sup>-5</sup>

Comparison of the unpaired median data by the MANN-WHITNEY-U-Test (MannU) of light transitions (fast phototaxis) of the stressed and the control group

Group	U	Z	2*1 sided exact p
stressed vs. control	2231.50	0.4297	0.6684

**Tab. 1e** refers to data presented in Figure 1e.

p-values of the KOLMOGOROV-SMIRNOV-Test (KS); LILLIFORS-Tests (Lillif) and SHAPIRO-WILK-Test (SW)

Group	N	Std.Dev.	p KS	p Lillif	p SW
stressed	15	0.0582	> 0.20	> 0.20	= 0.5690
control	15	0.0546	> 0.20	> 0.20	= 0.9813

Comparison of the normally distributed data by the unpaired T-TEST (K-W) of the optomotor response of the stressed and the control group.

Group	T	F	p
stressed vs. control	-0.4531	1.1358	0.6540

Comparison of the unpaired median data by the MANN-WHITNEY-U-Test (MannU) of the optomotor response of the stressed and the control group.

Group	U	Z	2*1 sided exact p
stressed vs. control	102.50	0.4148	0.6827

Tab. 1f refers to data presented in Figure 1f.

p-values of the KOLMOGOROV-SMIRNOV-Test (KS); LILLIFORS-Tests (Lillif) and SHAPIRO-WILK-Test (SW)

Group	N	Std.Dev.	p KS	p Lillif	p SW
stressed	30	1.4559	>0.20	<0.05	= 0.0232
control	30	1.7006	>0.20	<0.05	= 0.0188

Comparison of the unpaired median data by the MANN-WHITNEY-U-Test (MannU) of the percentage of stops of the stressed and the control group.

Group	U	Z	2*1 sided exact p
stressed vs. control	296.00	-2.2768	0.0225

Tab. 1g refers to data presented in Figure 1g.

p-values of the KOLMOGOROV-SMIRNOV-Test (KS); LILLIFORS-Tests (Lillif) and SHAPIRO-WILK-Test (SW)

	N	Std.Dev.	p KS	p Lillif	p SW
Pretest	45	0.7804	< 0.01	< 0.01	< 10 <sup>-5</sup>
Stress	41	1.0927	< 0.20	< 0.01	= 0.0138
Control	41	0.9500	< 0.01	< 0.01	= 0.0002

Comparison of the unpaired median data by the MANN-WHITNEY-U-Test (MannU) of climbing attempts of males after courtship suppression and the control group

Group	(2)	(3)
K-Wallis-Test: H(2 N=127)=4.0942 p=0.1291		
Pretest (1) R: 55.633	0.4257 1.4688	0.2191 1.7926
stressed (2) R: 67.305	--	~1.0000 0.3165
control (3) R: 69.878	--	--



## Supplementary Table 2 | Statistical analysis for Figure 2.

Tab. 2a refers to data presented in Figure 2a.

p-values of the KOLMOGOROV-SMIRNOV-Test (KS); LILLIFORS-Tests (Lillif) and SHAPIRO-WILK-Test (SW)

	N	Std.Dev.	p KS	p Lillif	p SW
Pretest <i>npf-GAL4</i> > UAS- <i>npf</i> <sup>RNAi</sup>	43	1.1191	< 0.15	< 0.01	= 0.0012
Pretest <i>or83b-GAL4</i> > UAS- <i>npf</i> <sup>RNAi</sup>	43	1.1157	< 0.10	< 0.01	= 0.0016
Test/Stress <i>npf-GAL4</i> > UAS- <i>npf</i> <sup>RNAi</sup>	42	1.1088	< 0.15	< 0.01	= 0.0091
Test/Stress <i>or83b-GAL4</i> > UAS- <i>npf</i> <sup>RNAi</sup>	42	1.7539	> 0.20	< 0.10	= 0.3305
Test/Control <i>npf-GAL4</i> > UAS- <i>npf</i> <sup>RNAi</sup>	43	1.3753	< 0.10	< 0.01	= 0.0269
Test/Control <i>or83b-GAL4</i> > UAS- <i>npf</i> <sup>RNAi</sup>	42	1.4191	< 0.20	< 0.01	= 0.0741

Comparison of the unpaired median data by the KRUSKAL-WALLIS-TEST (K-W) of climbing attempts.

Upper row: multiple p-values; lower row: z-values

Genotype	(2)	(3)	(4)	(5)	(6)
K-Wallis-Test: H(5,N=255)=95.3927 p< 10 <sup>-5</sup>					
Pretest <i>npf-GAL4</i> > UAS- <i>npf</i> <sup>RNAi</sup> (1) R: 169.91	~1.0000 0.1067	< 10 <sup>-5</sup> 7.2547	< 10 <sup>-5</sup> 4.9604	0.0988 2.7172	~1.0000 0.8312
Pretest <i>or83b-GAL4</i> > UAS- <i>npf</i> <sup>RNAi</sup> (2) R: 50.655	--	< 10 <sup>-5</sup> 7.5588	< 10 <sup>-5</sup> 5.0665	0.0712 2.8239	~1.0000 0.9373
Test(Stress) <i>npf-GAL4</i> > UAS- <i>npf</i> <sup>RNAi</sup> (3) R: 126.69	--	--	0.1983 2.4779	< 10 <sup>-5</sup> 4.7516	< 10 <sup>-5</sup> 6.5830
Test(Stress) <i>or83b-GAL4</i> > UAS- <i>npf</i> <sup>RNAi</sup> (4) R: 171.60	--	--	--	0.3580 2.2592	0.0006 4.1051
Test(Control) <i>npf-GAL4</i> > UAS- <i>npf</i> <sup>RNAi</sup> (5) R: 90.536	--	--	--	--	0.9224 1.8699
Test(Control) <i>or83b-GAL4</i> > UAS- <i>npf</i> <sup>RNAi</sup> (6) R: 156.61	--	--	--	--	--

Tab. 2b refers to data presented in Figure 2b.

p-values of the KOLMOGOROV-SMIRNOV-Test (KS); LILLIFORS-Tests (Lillif) and SHAPIRO-WILK-Test (SW)

	N	Std.Dev.	p KS	p Lillif	p SW
Pretest <i>npf-GAL4</i> > UAS- <i>npf</i> <sup>cDNA</sup>	17	1.0880	> 0.20	< 0.01	= 0.0064
Pretest CS	16	0.9309	< 0.15	< 0.01	= 0.0203
Test <i>npf-GAL4</i> > UAS- <i>npf</i> <sup>cDNA</sup>	34	1.5786	> 0.20	< 0.05	= 0.1648
Test CS	31	1.6017	< 0.15	< 0.01	= 0.0635

Comparison of the unpaired median data by the KRUSKAL-WALLIS-TEST (K-W) of climbing attempts.

Upper row: multiple p-values; lower row: z-values

Group	(2)	(3)	(4)
K-Wallis-Test: H(3.N=98)=48.2537 p < 10 <sup>-5</sup>			
<b>Pretest/<i>npf</i>-GAL4&gt; UAS-<i>npf</i><sup>cdNA</sup> (1)</b> R: 78.412	~1.0000 0.3129	< 10 <sup>-5</sup> 4.7428	< 10 <sup>-5</sup> 5.3445
<b>Pretest/CS (2)</b> R: 38.353	--	0.0001 4.2875	< 10 <sup>-5</sup> 4.8858
<b>Test / <i>npf</i>-GAL4&gt; UAS-<i>npf</i><sup>cdNA</sup> (3)</b> R: 75.313	--	--	~1.0000 0.8220
<b>Test/CS (4)</b> R: 32.548	--	--	--

**Tab. 2c** refers to data presented in Figure 2c.

p-values of the KOLMOGOROV-SMIRNOV-TEST (KS); LILLIFORS-Tests (Lillif) and SHAPIRO-WILK-TEST (SW)

Group	N	Std.Dev.	p KS	p Lillif	p SW
<b>Pretest (<i>rut</i><sup>l</sup>)</b>	51	1.0167	< 0.01	< 0.01	= 0.0002
<b>Stress (<i>rut</i><sup>l</sup>)</b>	46	1.1583	< 0.10	< 0.01	= 0.0111
<b>Control (<i>rut</i><sup>l</sup>)</b>	42	1.2605	< 0.15	< 0.01	= 0.0155

Comparison of the unpaired median data by the KRUSKAL-WALLIS-TEST (K-W) of climbing attempts.

Upper row: multiple p-values; lower row: z-values

Group	(2)	(3)
K-Wallis-Test: H(2.N=139)=50.5958 p < 10 <sup>-5</sup>		
<b>Pretest (<i>rut</i><sup>l</sup>) (1)</b> R: 84.206	< 10 <sup>-5</sup> 5.8313	~1.0000 0.6295
<b>Stress (<i>rut</i><sup>l</sup>) (2)</b> R: 36.457	--	< 10 <sup>-5</sup> 6.1704
<b>Control (<i>rut</i><sup>l</sup>) (3)</b> R: 89.488	--	--

**Tab. 2d** refers to data presented in Figure 2d.

p-values of the KOLMOGOROV-SMIRNOV-TEST (KS); LILLIFORS-Tests (Lillif) and SHAPIRO-WILK-TEST (SW)

	N	Std.Dev.	p KS	p Lillif	p SW
<b>Pretest (<i>dnc</i><sup>l</sup>)</b>	49	1.1173	< 0.15	< 0.01	= 0.0024
<b>Stress (<i>dnc</i><sup>l</sup>)</b>	24	1.3805	> 0.20	< 0.15	= 0.1513
<b>Control (<i>dnc</i><sup>l</sup>)</b>	24	0.9237	< 0.10	< 0.01	= 0.0093

Comparison of the unpaired median data by the KRUSKAL-WALLIS-TEST (K-W) of climbing attempts.

Upper row: multiple p-values; lower row: z-values

Group	(2)	(3)
K-Wallis-Test: H(2.N=97)=51.3956 p < 10 <sup>-5</sup>		
<b>Pretest (<i>dnc</i><sup>l</sup>) (1)</b> R: 64.347	< 10 <sup>-5</sup> 7.0282	0.2076 0.6295
<b>Stress (<i>dnc</i><sup>l</sup>) (2)</b> R: 15.063	--	< 10 <sup>-5</sup> 4.4975
<b>Control (<i>dnc</i><sup>l</sup>) (3)</b> R: 51.604	--	--

### Supplementary Table 3 | Statistical analysis for Figure 3.

**Tab. 3a** refers to data presented in Figure 3a.

p-values of the KOLMOGOROV-SMIRNOV-Test (KS); LILLIFORS-Tests (Lillif) and SHAPIRO-WILK-Test (SW)

	<b>N</b>	<b>Std.Dev.</b>	<b>p KS</b>	<b>p Lillif</b>	<b>p SW</b>
<b>Pretest stressed</b>	19	0.8377	< 0.15	< 0.01	= 0.0163
<b>Pretest control</b>	18	0.8556	< 0.20	< 0.10	= 0.0279
<b>Test 1 stressed</b>	17	0.8489	> 0.20	< 0.05	= 0.0332
<b>Test 1 control</b>	17	0.8703	< 0.15	< 0.01	= 0.0295
<b>Test 2 + 50 mM LiCl stressed</b>	14	1.0510	> 0.20	< 0.10	= 0.0516
<b>Test 2 + 50 mM LiCl control</b>	15	1.1339	> 0.20	< 0.05	= 0.0050

Comparison of the unpaired median data by the KRUSKAL-WALLIS-TEST (K-W) of climbing attempts.

Upper row: multiple p-values; lower row: z-values

	<b>(2)</b>	<b>(3)</b>	<b>(4)</b>	<b>(5)</b>	<b>(6)</b>
K-Wallis-Test: $H(5, N=100) = 73.6387$ $p < 10^{-3}$					
<b>Pretest (1) stressed</b> R: 42.00	~1.0000 0.3190	0.0061 3.5373	~1.0000 0.3922	0.0029 3.7254	0.0010 3.9995
<b>Pretest (2) control</b> R: 40.850	--	0.0022 3.8020	~1.0000 0.0769	0.0106 3.3878	0.0039 3.6513
<b>Test (3) stressed</b> R: 10.417	--	--	0.0020 3.8247	< $10^{-3}$ 6.9078	< $10^{-3}$ 7.2332
<b>Test (4) control</b> R: 33.150	--	--	--	0.0160 3.2729	0.0062 3.5300
<b>Test + 50mM LiCl (5) stressed</b> R: 70.038	--	--	--	--	~1.0000 0.1864
<b>Test + 50mM LiCl (6) control</b> R: 65.00	--	--	--	--	--

**Tab. 3b** refers to data presented in Figure 3b.

p-values of the KOLMOGOROV-SMIRNOV-Test (KS); LILLIFORS-Tests (Lillif) and SHAPIRO-WILK-Test (SW)

<b>Group</b>	<b>N</b>	<b>Std.Dev.</b>	<b>p KS</b>	<b>p Lillif</b>	<b>p SW</b>
<b>Pretest stressed</b>	21	0.8647	< 0.15	< 0.01	= 0.0041
<b>Pretest control</b>	21	0.8647	< 0.15	< 0.10	= 0.0279
<b>Test stressed</b>	21	1.1106	< 0.10	< 0.01	= 0.0137
<b>Test 1 control</b>	21	0.8136	< 0.10	< 0.01	= 0.0116
<b>Test 2 + 5 mM LiCL</b>	21	1.3887	> 0.20	> 0.15	= 0.0343

<b>stressed</b>					
<b>Test 2 + 5 mM LiCl control</b>	19	1.2402	> 0.20	< 0.05	= 0.0540

Comparison of the unpaired median data by the KRUSKAL-WALLIS-TEST (K-W) of climbing attempts.

Upper row: multiple p-values; lower row: z-values

<b>Group</b>	<b>(2)</b>	<b>(3)</b>	<b>(4)</b>	<b>(5)</b>	<b>(6)</b>
K-Wallis-Test: H(5 N=100)= 73.6387 p< 10 <sup>-5</sup>					
<b>Pretest (1) stressed R: 42.00</b>	~1.0000 < 10 <sup>-5</sup>	< 10 <sup>-5</sup> 5.8755	~1.0000 1.0583	~1.0000 1.7903	~1.0000 0.6519
<b>Pretest (2) control R: 40.850</b>	--	< 10 <sup>-5</sup> 5.8755	~1.0000 1.0583	~1.0000 1.7903	~1.0000 0.6519
<b>Test (3) stressed R: 10.417</b>	--	--	< 10 <sup>-5</sup> 4.8172	0.0007 4.0852	< 10 <sup>-5</sup> 5.0748
<b>Test (4) control R: 33.150</b>	--	--	--	~1.0000 0.7320	~1.0000 0.3796
<b>Test + 5mM LiCl (5) stressed R: 70.038</b>	--	--	--	--	~1.0000 1.0931
<b>Test + 5mM LiCl (6) control R: 65.00</b>	--	--	--	--	--

## Supplementary Table 4 | Statistical analysis for Figure 4

**Tab. 4a** refers to data presented in Figure 4a.

p-values of the KOLMOGOROV-SMIRNOV-Test (KS); LILLIFORS-Tests (Lillif) and SHAPIRO-WILK-Test (SW)

	<b>N</b>	<b>Std.Dev.</b>	<b>p KS</b>	<b>p Lillif</b>	<b>p SW</b>
<b>Pretest</b>	125	1.0442	< 0.01	< 0.01	< 10 <sup>-5</sup>
<b>Test</b>	125	1.1555	< 0.01	< 0.01	< 10 <sup>-5</sup>
<b>Test 2 (H<sub>2</sub>O)</b>	31	1.1188	< 0.20	< 0.05	= 0.0059
<b>Test 2 (5-HTP)</b>	30	1.5844	< 0.10	< 0.01	= 0.0426
<b>Test 2 (sucrose)</b>	30	1.4404	< 0.15	< 0.01	= 0.0061
<b>Test 2 (5-HTP &amp; sucrose)</b>	30	1.4223	< 0.15	< 0.01	= 0.0081

Comparison of the unpaired median data by the KRUSKAL-WALLIS-TEST (K-W) of climbing attempts.

Upper row: multiple p-values; lower row: z-values

<b>Group</b>	<b>(2)</b>	<b>(3)</b>	<b>(4)</b>	<b>(5)</b>	<b>(6)</b>
K-Wallis-Test: H(5 N=371)= 229.9513 p< 10 <sup>-5</sup>					
<b>Pretest (1)</b> R: 279.01	< 10 <sup>-5</sup> 13.4850	< 10 <sup>-5</sup> 9.1319	0.0001 4.4548	0.1090 2.6844	~1.0000 1.3459
<b>Test (2)</b> R: 96.084	--	~1.0000 0.6305	0.0012 3.9352	< 10 <sup>-5</sup> 5.7056	< 10 <sup>-5</sup> 7.0441
<b>Test 2 (H<sub>2</sub>O) (3)</b> R: 82.516	--	--	0.0045 3.6179	< 10 <sup>-5</sup> 5.0232	< 10 <sup>-5</sup> 6.0858
<b>Test 2 (5-HTP) (4)</b> R: 181.88	--	--	--	~1.0000 1.3940	0.2155 2.4479
<b>Test 2 (sucrose) (5)</b> R: 220.48	--	--	--	--	~1.0000 1.0539
<b>Test 2 (5-HTP+sucrose) (6)</b> R: 249.67	--	--	--	--	--

**Tab. 4b** refers to data presented in Figure 4b.

p-values of the KOLMOGOROV-SMIRNOV-Test (KS); LILLIFORS-Tests (Lillif) and SHAPIRO-WILK-Test (SW)

	<b>N</b>	<b>Std.Dev.</b>	<b>p KS</b>	<b>p Lillif</b>	<b>p SW</b>
<b>Pretest</b>	105	1.1105	< 0.01	< 0.01	< 10 <sup>-5</sup>
<b>Test</b>	103	1.3691	< 0.01	< 0.01	= 0.0003
<b>Test 2 (H<sub>2</sub>O)</b>	24	1.3486	< 0.10	< 0.01	= 0.0123
<b>Test 2 (sucrose)</b>	25	1.1180	< 0.15	< 0.01	= 0.0275
<b>Test 2 (αMTP)</b>	26	1.5616	< 0.20	< 0.01	= 0.0802
<b>Test 2 (αMTP+sucrose)</b>	26	1.0325	> 0.20	< 0.01	= 0.0295

Comparison of the unpaired median data by the KRUSKAL-WALLIS-TEST (K-W) of climbing attempts.  
Upper row: multiple p-values; lower row: z-values.

Group	(2)	(3)	(4)	(5)	(6)
K-Wallis-Test: H(5 N=309)=208.8431 p < 10 <sup>-3</sup>					
<b>Pretest (1)</b> R: 279.01	< 10 <sup>-5</sup> 11.2570	< 10 <sup>-5</sup> 8.6472	~1.0000 0.7840	< 10 <sup>-5</sup> 8.0892	< 10 <sup>-5</sup> 7.8190
<b>Test (2)</b> R: 96.084	--	~1.0000 1.7441	< 10 <sup>-5</sup> 6.2195	~1.0000 0.9606	~1.0000 0.6909
<b>Test 2 (H<sub>2</sub>O) (3)</b> R: 82.516	--	--	< 10 <sup>-5</sup> 6.2356	~1.0000 0.6517	~1.0000 0.8608
<b>Test 2 (5-HTP) (4)</b> R: 181.88	--	--	--	< 10 <sup>-5</sup> 5.7031	< 10 <sup>-5</sup> 5.4918
<b>Test 2 (sucrose) (5)</b> R: 220.48	--	--	--	--	~1.0000 0.2431
<b>Test 2 (5-HTP+sucrose) (6)</b> R: 249.67	--	--	--	--	--

**Tab. 4c** refers to data presented in Figure 4e.

p-values of the KOLMOGOROV-SMIRNOV-Test (KS); LILLIFORS-Tests (Lillif) and SHAPIRO-WILK-Test (SW).

Group	N	Std.Dev.	p KS	p Lillif	p SW
<b>stressed</b>	12	0.2386	> 0.20	< 0.05	= 0.1307
<b>control</b>	12	0.2441	> 0.20	> 0.20	= 0.6657

Comparison of the unpaired median data of the 5HT-quantification in the ellipsoid body by the MANN-WHITNEY-U-Test (MannU) of *Drosophila* males of the stressed and control group.

Group	U	Z	2*1 sided exact p
<b>stressed vs. control</b>	49.00	-1.3279	0.1978

**Tab. 4d** refers to data presented in Figure 4f.

p-values of the KOLMOGOROV-SMIRNOV-Test (KS); LILLIFORS-Tests (Lillif) and SHAPIRO-WILK-Test (SW).

Group	N	Std.Dev.	p KS	p Lillif	p SW
<b>stress</b>	12	0.4265	> 0.20	< 0.15	= 0.0632
<b>control</b>	13	0.1856	> 0.20	< 0.20	= 0.0653

Comparison of the normally distributed data of the 5HT-quantification in the  $\alpha$ -lobe by the unpaired T-TEST of *Drosophila* males of the stressed and control group.

Group	T	F	p
<b>stressed vs. control</b>	2.3142	5.2771	0.0297

Comparison of the unpaired median data of the 5HT-quantification in the  $\alpha$ -lobe by the MANN-WHITNEY-U-Test (MannU) of *Drosophila* males of the stressed and control group.

Group	U	Z	2*1 sided exact p
<b>stressed vs. control</b>	40.00	-2.0669	0.0398

**Tab. 4e** refers to data presented in Figure 4g.

p-values of the KOLMOGOROV-SMIRNOV-Test (KS); LILLIFORS-Tests (Lillif) and SHAPIRO-WILK-Test (SW).

Group	N	Std.Dev.	p KS	p Lillif	p SW
<b>stressed</b>	13	0.1717	> 0.20	> 0.20	= 0.8165
<b>control</b>	12	0.3861	> 0.20	> 0.20	= 0.8753

Comparison of the normally distributed data of the 5HT-quantification in the  $\beta$ -lobe by the unpaired T-TEST of *Drosophila* males of the stressed and control group.

Group	T	F	p
stressed vs. control	-1.1871	5.0543	0.2473

Comparison of the unpaired median data of the 5HT-quantification in the  $\beta$ -lobe by the MANN-WHITNEY-U-Test (MannU) of *Drosophila* males of the stressed and control group.

Group	U	Z	2*1 sided exact p
stressed vs. control	64.00	0.7615	0.4696

**Tab. 4f** refers to data presented in Figure 4h.

p-values of the KOLMOGOROV-SMIRNOV-Test (KS); LILLIFORS-Tests (Lillif) and SHAPIRO-WILK-Test (SW)

Group	N	Std.Dev.	p KS	p Lillif	p SW
stressed	13	0.1555	> 0.20	< 0.15	= 0.0040
control	12	0.4826	> 0.20	> 0.20	= 0.3733

Comparison of the unpaired median data of the 5HT-quantification in the  $\gamma$ -lobe by the MANN-WHITNEY-U-Test (MannU) of *Drosophila* males of the stressed and control group.

Group	U	Z	2*1 sided exact p
stressed vs. control	71.00	0.6923	0.5114

## Supplementary Table 5 | Statistical analysis for Figure 5.

**Tab. 5a** refers to data presented in Figure 5a.

p-values of the KOLMOGOROV-SMIRNOV-Test (KS); LILLIFORS-Tests (Lillif) and SHAPIRO-WILK-Test (SW).

Group	N	Std.Dev.	p KS	p Lillif	p SW
Pretest <i>Trh493-GAL4&gt; UAS-TNT</i>	23	0.8528	< 0.01	< 0.01	= 0.0003
Pretest UAS-TNT/+	25	0.8124	< 0.10	< 0.01	= 0.0026
Test (stressed) <i>Trh493-GAL4&gt; UAS-TNT</i>	23	1.3112	> 0.20	< 0.05	= 0.1251
Test (stressed) UAS-TNT/+	24	1.1672	< 0.15	< 0.01	= 0.0038
Test (sucrose) <i>Trh493-GAL4&gt; UAS-TNT</i>	23	1.2777	> 0.20	< 0.01	= 0.0310
Test (sucrose) UAS-TNT/+	25	0.8524	< 0.10	< 0.01	= 0.0060

Comparison of the unpaired median data by the KRUSKAL-WALLIS-TEST (K-W) of climbing attempts.

Upper row: multiple p-values; lower row: z-values.

Genotype	(2)	(3)	(4)	(5)	(6)
K-Wallis-Test: H(5 N=143)=103.5219 p < 10 <sup>-5</sup>					
Pretest (1) <i>Trh493-GAL4&gt; UAS-TNT</i> R: 107.24	~1.0000 0.2374	< 10 <sup>-5</sup> 5.7749	< 10 <sup>-5</sup> 6.2262	< 10 <sup>-5</sup> 5.3425	~1.0000 0.6032
Pretest (2) UAS-TNT/+ R: 110.08	--	< 10 <sup>-5</sup> 6.1314	< 10 <sup>-5</sup> 6.5974	< 10 <sup>-5</sup> 5.6900	~1.0000 0.8586
Test (stressed) (3) <i>Trh493-GAL4&gt; UAS-TNT</i> R: 36.696	--	--	~1.0000 0.3902	~1.0000 0.4325	< 10 <sup>-5</sup> 5.2908
Test (stressed) (4) UAS-TNT/+ R: 31.979	--	--	--	~1.0000 0.8272	< 10 <sup>-5</sup> 5.7476
Test (sucrose) (5) <i>Trh493-GAL4&gt; UAS-TNT</i> R: 41.978	--	--	--	--	< 10 <sup>-5</sup> 4.8495
Test (sucrose) (6) UAS-TNT/+ R: 100.02	--	--	--	--	--



**Tab. 5b** refers to data presented in Figure 5b.

p-values of the KOLMOGOROV-SMIRNOV-Test (KS); LILLIFORS-Tests (Lillif) and SHAPIRO-WILK-Test (SW).

Group	N	Std.Dev.	p KS	p Lillif	p SW
Pretest <i>Trh493-GAL4&gt; UAS-NaChBac</i>	45	0.7433	< 0.01	< 0.01	< 10 <sup>-5</sup>
Pretest UAS-NaChBac/+	44	0.9634	< 0.01	< 0.01	= 0.0005
Test (stressed) <i>Trh493-GAL4&gt; UAS-NaChBac</i>	43	1.1206	< 0.05	< 0.01	= 0.0021
Test (stressed) UAS-NaChBac/+	44	1.2449	< 0.15	< 0.01	= 0.0212
Test (sucrose) <i>Trh493-GAL4&gt; UAS-NaChBac</i>	20	0.8645	< 0.10	< 0.01	= 0.0055
Test (sucrose) UAS-NaChBac/+	22	1.1622	> 0.20	< 0.05	= 0.0622
Test (sucrose+αMTP) <i>Trh493-GAL4&gt; UAS-NaChBac</i>	21	1.0282	> 0.20	< 0.05	= 0.0215
Test (sucrose+αMTP) UAS-NaChBac/+	21	0.9636	> 0.20	< 0.05	= 0.0531

Comparison of the unpaired median data by the KRUSKAL-WALLIS-TEST (K-W) of climbing attempts.

Upper row: multiple p-values; lower row: z-values.

Genotype	(2)	(3)	(4)	(5)	(6)	(7)	(8)
K-Wallis-Test: H(7 N=260)=152.0367 p< 10 <sup>-5</sup>							
Pretest (1) <i>Trh493-GAL4&gt; UAS-NaChBac</i> R: 167.43	~1.0000 0.8737	~1.0000 1.0494	~1.0000 6.9851	~1.0000 0.1835	~1.0000 1.1466	< 10 <sup>-5</sup> 5.7413	< 10 <sup>-5</sup> 6.2661
Pretest (2) UAS-NaChBac/+ R: 181.36	--	~1.0000 1.9075	< 10 <sup>-5</sup> 7.8150	~1.0000 0.8698	~1.0000 0.4329	< 10 <sup>-5</sup> 6.4191	< 10 <sup>-5</sup> 6.9420
Test (stress) (3) <i>Trh493-GAL4&gt; UAS-NaChBac</i> R: 150.60	--	--	< 10 <sup>-5</sup> 5.8625	~1.0000 0.6446	~1.0000 1.9916	< 10 <sup>-5</sup> 4.8587	< 10 <sup>-5</sup> 5.3796
Test (stress) (4) UAS-NaChBac/+ R: 56.068	--	--	--	< 10 <sup>-5</sup> 5.3086	< 10 <sup>-5</sup> 6.8138	~1.0000 0.1371	~1.0000 0.6600
Test (sucrose) (5) <i>Trh493-GAL4&gt; UAS-NaChBac</i> R: 163.72	--	--	--	--	~1.0000 1.1250	0.0001 4.6984	< 10 <sup>-5</sup> 5.1423
Test (sucrose) (6) UAS-NaChBac/+ R: 189.86	--	--	--	--	--	< 10 <sup>-5</sup> 5.9511	< 10 <sup>-5</sup> 6.4057
Test (sucrose+αMTP) (7) <i>Trh493-GAL4&gt; UAS-NaChBac</i> R: 53.33	--	--	--	--	--	--	~1.0000 0.4494
Test (sucrose+αMTP) (8) UAS-NaChBac/+ R: 42.905	--	--	--	--	--	--	--

**Tab. 5c** refers to data presented in Figure 5f.

p-values of the KOLMOGOROV-SMIRNOV-Test (KS); LILLIFORS-Tests (Lillif) and SHAPIRO-WILK-Test (SW).

	<b>N</b>	<b>Std.Dev.</b>	<b>p KS</b>	<b>p Lillif</b>	<b>p SW</b>
<b>Pretest</b> <i>mb247-GAL4</i> > UAS-TNT	46	0.9631	< 0.05	< 0.01	= 0.0012
<b>Pretest</b> UAS-TNT/+	25	0.8124	< 0.10	< 0.01	= 0.0026
<b>Pretest</b> <i>mb247-GAL4</i> +	23	0.9154	< 0.15	< 0.01	= 0.0107
<b>Test</b> <i>mb247-GAL4</i> > UAS-TNT	42	1.1527	< 0.01	< 0.01	= 0.0028
<b>Test</b> UAS-TNT/+	24	1.1672	< 0.15	< 0.01	= 0.0038
<b>Test</b> <i>mb247-GAL4</i> +	23	1.5258	> 0.20	< 0.05	= 0.1750

Comparison of the unpaired median data by the KRUSKAL-WALLIS-TEST (K-W) of climbing attempts.

Upper row: multiple p-values; lower row: z-values.

<b>Genotype</b>	<b>(2)</b>	<b>(3)</b>	<b>(4)</b>	<b>(5)</b>	<b>(6)</b>
K-Wallis-Test: H(5 N=183)=92.5351 p < 10 <sup>-5</sup>					
<b>Pretest (1)</b> <i>mb247-GAL4</i> > UAS-TNT R: 122.83	0.8440 1.9090	~1.0000 0.1736	~1.0000 1.8148	< 10 <sup>-5</sup> 7.8870	< 10 <sup>-5</sup> 5.4011
<b>Pretest (2)</b> UAS-TNT/+ R: 97.70	--	~1.0000 1.7951	~1.0000 0.3445	< 10 <sup>-5</sup> 5.2897	0.0260 3.1323
<b>Pretest (3)</b> <i>+/mb247-GAL4</i> R: 125.17	--	--	~1.0000 1.6640	< 10 <sup>-5</sup> 6.9580	< 10 <sup>-5</sup> 4.8278
<b>Test (4)</b> <i>mb247-GAL4</i> > UAS-TNT R: 102.31	--	--	--	< 10 <sup>-5</sup> 6.2477	0.0020 3.8243
<b>Test (5)</b> UAS-TNT/+ R: 17.625	--	--	--	--	0.5642 2.0791
<b>Test (6)</b> <i>+/mb247-GAL4</i> R: 49.761	--	--	--	--	--

**Tab. 5d** refers to data presented in Figure 5g.

p-values of the KOLMOGOROV-SMIRNOV-Test (KS); LILLIFORS-Tests (Lillif) and SHAPIRO-WILK-Test (SW).

<b>Group</b>	<b>N</b>	<b>Std.Dev.</b>	<b>p KS</b>	<b>p Lillif</b>	<b>p SW</b>
<b>Pretest</b> <i>H24-GAL4</i> > UAS-TNT	22	0.9726	> 0.20	< 0.05	= 0.0097
<b>Pretest</b> UAS-TNT/+	25	0.8124	< 0.10	< 0.01	= 0.0026
<b>Pretest</b> <i>+/H24-GAL4</i>	22	0.7799	< 0.10	< 0.01	= 0.0059
<b>Test</b> <i>H24-GAL4</i> > UAS-TNT	22	1.2239	> 0.20	< 0.10	= 0.0290
<b>Test</b> UAS-TNT/+	24	1.1672	< 0.15	< 0.01	= 0.0038
<b>Test</b> <i>+/H24-GAL4</i>	22	0.2868	< 0.15	< 0.01	= 0.0548

Comparison of the unpaired median data by the KRUSKAL-WALLIS-TEST (K-W) of climbing attempts.  
Upper row: multiple p-values; lower row: z-values.

Genotype	(2)	(3)	(4)	(5)	(6)
K-Wallis-Test: H(5 N=137)=83.3922 p< 10 <sup>-5</sup>					
<b>Pretest (1)</b> <i>H24-GAL4</i> > UAS-TNT R: 94.636	~1.0000 0.3358	~1.0000 0.2906	~1.0000 1.6047	< 10 <sup>-5</sup> 6.3635	~1.0000 4.8596
<b>Pretest (2)</b> UAS-TNT/+ R: 90.740	--	~1.0000 0.6355	~1.0000 1.3193	< 10 <sup>-5</sup> 6.2290	< 10 <sup>-5</sup> 4.6765
<b>Pretest (3)</b> +/ <i>H24-GAL4</i> R: 98.114	--	--	0.8709 1.8952	< 10 <sup>-5</sup> 6.6603	< 10 <sup>-5</sup> 5.1502
<b>Test (4)</b> <i>H24-GAL4</i> > UAS-TNT R: 75.432	--	--	--	< 10 <sup>-5</sup> 4.7243	0.0170 3.2550
<b>Test (5)</b> UAS-TNT/+ R: 20.083	--	--	--	--	~1.0000 1.3993
<b>Test (6)</b> +/ <i>H24-GAL4</i> R: 36.477	--	--	--	--	--

**Tab. 5e** refers to data presented in Figure 5h.

p-values of the KOLMOGOROV-SMIRNOV-Test (KS); LILLIFORS-Tests (Lillif) and SHAPIRO-WILK-Test (SW).

Group	N	Std.Dev.	p KS	p Lillif	p SW
<b>Pretest</b> <i>c739-GAL4</i> > UAS-TNT	21	1.1402	< 0.15	< 0.01	= 0.0220
<b>Pretest</b> UAS-TNT/+	25	0.8124	< 0.10	< 0.01	= 0.0026
<b>Pretest</b> +/ <i>c739-GAL4</i>	21	0.8891	< 0.15	< 0.01	= 0.0074
<b>Test</b> <i>c739-GAL4</i> > UAS-TNT	21	1.1792	> 0.20	< 0.05	= 0.0850
<b>Test</b> UAS-TNT/+	25	1.1672	< 0.15	< 0.01	= 0.0038
<b>Test</b> +/ <i>c739-GAL4</i>	21	0.9487	< 0.20	< 0.01	= 0.0712
<b>Test 2 (sucrose)</b> <i>c739-GAL4</i> > UAS-TNT	21	1.3002	> 0.20	< 0.05	= 0.0671
<b>Test 2 (sucrose)</b> UAS-TNT/+	25	0.8524	< 0.10	< 0.01	= 0.0060
<b>Test 2 (sucrose)</b> +/ <i>c739-GAL4</i>	21	0.8647	< 0.15	< 0.01	= 0.0032

Comparison of the unpaired median data by the KRUSKAL-WALLIS-TEST (K-W) of climbing attempts.  
 Upper row: multiple p-values; lower row: z-values.

Genotype	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
K-Wallis-Test: H(8 N=200)=141.2200 p< 10 <sup>-5</sup>								
<b>Pretest (1)</b> <i>c739-GAL4&gt; UAS-TNT</i> R: 146.10	~1.0000 0.3482	~1.0000 0.3292	< 10 <sup>-5</sup> 5.7504	< 10 <sup>-5</sup> 6.0430	< 10 <sup>-5</sup> 5.4892	< 10 <sup>-5</sup> 5.2279	~1.0000 0.4842	~1.0000 0.6718
<b>Pretest (2)</b> <i>UAS-TNT/+</i> R: 152.06	--	~1.0000 0.6914	< 10 <sup>-5</sup> 6.3434	< 10 <sup>-5</sup> 6.6792	< 10 <sup>-5</sup> 6.0710	< 10 <sup>-5</sup> 5.7986	~1.0000 0.8711	~1.0000 1.0486
<b>Pretest (3)</b> <i>c739-GAL4/+</i> R: 140.21	--	--	< 10 <sup>-5</sup> 5.4212	< 10 <sup>-5</sup> 5.7030	< 10 <sup>-5</sup> 5.1600	< 10 <sup>-5</sup> 4.8987	~1.0000 0.1409	~1.0000 0.3426
<b>Test (4)</b> <i>c739-GAL4&gt; UAS-TNT</i> R: 43.381	--	--	--	~1.0000 0.1039	~1.0000 0.2613	~1.0000 0.5225	< 10 <sup>-5</sup> 5.5111	< 10 <sup>-5</sup> 5.0786
<b>Test (5)</b> <i>UAS-TNT/+</i> R: 41.583	--	--	--	--	~1.0000 0.3738	~1.0000 0.6436	< 10 <sup>-5</sup> 5.8171	< 10 <sup>-5</sup> 5.3491
<b>Test (6)</b> <i>c739-GAL4/+</i> R: 48.048	--	--	--	--	--	~1.0000 0.2613	< 10 <sup>-5</sup> 5.2387	< 10 <sup>-5</sup> 4.8174
<b>Test 2 (sucrose) (7)</b> <i>c739-GAL4&gt; UAS-TNT</i> R: 52.714	--	--	--	--	--	--	< 10 <sup>-5</sup> 4.9663	0.0002 4.5561
<b>Test 2 (sucrose) (8)</b> <i>UAS-TNT/+</i> R: 137.80	--	--	--	--	--	--	--	~1.0000 0.2162
<b>Test 2 (sucrose) (9)</b> <i>c739-GAL4/+</i> R: 134.10	--	--	--	--	--	--	--	--

## Supplementary Table 6 | Statistical analysis for Figure 6.

Tab. 6a refers to data presented in Figure 6a.

p-values of the KOLMOGOROV-SMIRNOV-Test (KS); LILLIFORS-Tests (Lillif) and SHAPIRO-WILK-Test (SW).

Group	N	Std.Dev.	p KS	p Lillif	p SW
Pretest <i>mb247-GAL4</i> > UAS-5HT-1A <sup>RNAi</sup>	52	0.8042	< 0.01	< 0.01	< 10 <sup>-5</sup>
Pretest UAS-5HT-1A <sup>RNAi/+</sup>	52	0.7794	< 0.01	< 0.01	< 10 <sup>-5</sup>
Pretest +/mb247-GAL4	52	0.8975	< 0.01	< 0.01	= 0.0001
Test <i>mb247-GAL4</i> > UAS-5HT-1A <sup>RNAi</sup>	26	1.3633	> 0.20	< 0.10	= 0.1371
Test UAS-5HT-1A <sup>RNAi/+</sup>	26	1.2026	> 0.20	< 0.05	= 0.1197
Test +/mb247-GAL4	26	1.5237	< 0.15	< 0.01	= 0.0795
Test 2 (sucrose) <i>mb247-GAL4</i> > UAS-5HT-1A <sup>RNAi</sup>	26	1.2508	< 0.10	< 0.01	= 0.0645
Test 2 (sucrose) UAS-5HT-1A <sup>RNAi/+</sup>	24	1.1034	> 0.20	< 0.01	= 0.0185
Test 2 (sucrose) +/mb247-GAL4	26	1.2102	< 0.10	< 0.01	= 0.0174

Comparison of the unpaired median data by the KRUSKAL-WALLIS-TEST (K-W) of climbing attempts.

Upper row: multiple p-values; lower row: z-values.

Genotype	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
K-Wallis-Test: H(8 N=310)=152.6476 p < 10 <sup>-5</sup>								
Pretest (1) <i>mb247-GAL4</i> > 5HT1A <sup>RNAi</sup> R: 187.84	~1.0000 0.2773	~1.0000 0.9354	< 10 <sup>-5</sup> 5.1991	< 10 <sup>-5</sup> 5.5073	< 10 <sup>-5</sup> 5.5555	< 10 <sup>-5</sup> 5.6475	~1.0000 1.3627	~1.0000 0.7284
Pretest (2) UAS-5HT1A <sup>RNAi/+</sup> R: 192.71	--	~1.0000 0.6580	< 10 <sup>-5</sup> 5.4255	< 10 <sup>-5</sup> 5.7337	< 10 <sup>-5</sup> 5.7819	< 10 <sup>-5</sup> 5.8739	~1.0000 1.1423	~1.0000 0.5020
Pretest (3) <i>mb247-GAL4</i> /+ R: 204.28	--	--	< 10 <sup>-5</sup> 5.9628	< 10 <sup>-5</sup> 6.2710	< 10 <sup>-5</sup> 6.3193	< 10 <sup>-5</sup> 6.4112	~1.0000 0.6194	~1.0000 0.0353
Test (4) <i>mb247-GAL4</i> > 5HT1A <sup>RNAi</sup> R: 75.904	--	--	--	~1.0000 0.2669	~1.0000 0.3087	~1.0000 0.3883	< 10 <sup>-5</sup> 5.5996	< 10 <sup>-5</sup> 5.1334
Test (5) UAS-5HT1A <sup>RNAi/+</sup> R: 69.269	--	--	--	--	~1.0000 0.0418	~1.0000 0.1215	< 10 <sup>-5</sup> 5.8611	< 10 <sup>-5</sup> 5.4003
Test (6) <i>mb247-GAL4</i> /+ R: 68.231	--	--	--	--	--	~1.0000 0.0797	< 10 <sup>-5</sup> 5.9020	< 10 <sup>-5</sup> 5.4420
Test 2 (sucrose) (7) <i>mb247-GAL4</i> > 5HT1A <sup>RNAi</sup> R: 66.250	--	--	--	--	--	--	< 10 <sup>-5</sup> 5.9801	< 10 <sup>-5</sup> 5.5217
Test 2 (sucrose) (8) UAS-5HT1A <sup>RNAi/+</sup> R: 217.98	--	--	--	--	--	--	--	~1.0000 0.5699
Test 2 (sucrose) (9) <i>mb247-GAL4</i> /+ R: 203.52	--	--	--	--	--	--	--	--

**Tab. 6b** refers to data presented in Figure 6b.

p-values of the KOLMOGOROV-SMIRNOV-Test (KS); LILLIFORS-Tests (Lillif) and SHAPIRO-WILK-Test (SW).

Genotype	N	Std.Dev.	p KS	p Lillif	p SW
Pretest <i>mb247-GAL4</i> > UAS-5HT-1B <sup>RNAi</sup>	50	0.7890	< 0.05	< 0.01	< 10 <sup>-5</sup>
Pretest UAS-5HT-1B <sup>RNAi/+</sup>	50	0.7273	< 0.01	< 0.01	< 10 <sup>-5</sup>
Pretest +/ <i>mb247-GAL4</i>	52	0.8975	< 0.01	< 0.01	= 0.0001
Test <i>mb247-GAL4</i> > UAS-5HT-1B <sup>RNAi</sup>	24	1.0206	< 0.10	< 0.01	= 0.0206
Test UAS-5HT-1B <sup>RNAi/+</sup>	26	1.2006	> 0.20	< 0.05	= 0.1340
Test +/ <i>mb247-GAL4</i>	26	1.5237	< 0.15	< 0.01	= 0.0795
Test 2 (sucrose) <i>mb247-GAL4</i> > UAS-5HT-1B <sup>RNAi</sup>	24	1.3270	> 0.20	< 0.15	= 0.1000
Test 2 (sucrose) UAS-5HT-1B <sup>RNAi/+</sup>	25	1.0985	> 0.20	< 0.01	= 0.0075
Test 2 (sucrose) +/ <i>mb247-GAL4</i>	26	1.2102	< 0.10	< 0.01	= 0.0174

Comparison of the unpaired median data by the KRUSKAL-WALLIS-TEST (K-W) of climbing attempts; data separated according to different days. Upper row: multiple p-values; lower row: z-values.

Genotype	(2)	(3)
K-Wallis-Test: H(2 N=152)=30.7643 p< 10 <sup>-5</sup>		
Pretest (1) <i>mb247-GAL4</i> > UAS-5HT-1B <sup>RNAi</sup> R: 94.130	< 10 <sup>-5</sup> 4.9849	0.8535 1.0702
Pretest (2) UAS-5HT-1B <sup>RNAi/+</sup> R: 50.240	--	0.0002 3.9633
Pretest (3) +/ <i>mb247-GAL4</i> R: 84.798	--	--

Genotype	(2)	(3)
K-Wallis-Test: H(2 N=76)=28.0599 p< 10 <sup>-5</sup>		
Test (1) <i>mb247-GAL4</i> > UAS-5HT-1B <sup>RNAi</sup> R: 56.146	< 10 <sup>-5</sup> 5.1855	0.0065 3.0659
Test (2) UAS-5HT-1B <sup>RNAi/+</sup> R: 23.731	--	0.0915 2.1633
Test (3) +/ <i>mb247-GAL4</i> R: 36.981	--	--

Genotype	(2)	(3)
K-Wallis-Test: H(2 N=75)=7.3992 p=0.0247		
Test 2 (sucrose) (1) <i>mb247-GAL4</i> > UAS-5HT-1B <sup>RNAi</sup> R: 31.083	~1.0000 0.7220	0.0339 2.5332
Test 2 (sucrose) (2) UAS-5HT-1B <sup>RNAi/+</sup> R: 35.580	--	0.2947 1.8234
Test 2 (sucrose) (3) +/ <i>mb247-GAL4</i> R: 46.712	--	--

**Tab. 6c** refers to data presented in Figure 6c.

p-values of the KOLMOGOROV-SMIRNOV-Test (KS); LILLIFORS-Tests (Lillif) and SHAPIRO-WILK-Test (SW).

Genotype	N	Std.Dev.	p KS	p Lillif	p SW
Pretest <i>H24-GAL4&gt; 5HT1A<sup>RNAi</sup></i>	25	0.8660	< 0.05	< 0.01	= 0.0037
Pretest <i>c739-GAL4&gt; 5HT1A<sup>RNAi</sup></i>	25	0.8660	< 0.05	< 0.01	= 0.0037
Test 1 <i>H24-GAL4&gt; 5HT1A<sup>RNAi</sup></i> Stressed	23	0.9472	< 0.10	< 0.01	= 0.0077
Test 1 <i>c739-GAL4&gt; 5HT1A<sup>RNAi</sup></i> Stressed	25	1.0924	< 0.10	< 0.01	= 0.0095
Test 2 (Sucrose) <i>H24-GAL4&gt; 5HT1A<sup>RNAi</sup></i> Stressed	20	0.8256	< 0.15	< 0.01	= 0.0145
Test 2 (Sucrose) <i>c739-GAL4&gt;5HT1A<sup>RNAi</sup></i> Stressed	25	1.2083	> 0.20	< 0.01	= 0.0371

Comparison of the unpaired median data by the KRUSKAL-WALLIS-TEST (K-W).

Upper row: multiple p-values; lower row: z-values.

Genotyp	(2)	(3)	(4)	(5)	(6)
K-Wallis-Test: H(5 N=143)= 106.6746 p< 10 <sup>-5</sup>					
Pretest (1) <i>H24-GAL4&gt; 5HT1A<sup>RNAi</sup></i> R: 105.92	~1.0000 < 10 <sup>-5</sup>	< 10 <sup>-5</sup> 5.0427	< 10 <sup>-5</sup> 5.8259	~1.0000 0.5094	< 10 <sup>-5</sup> 6.4267
Pretest (2) <i>c739-GAL4&gt; 5HT1A<sup>RNAi</sup></i> R: 105.92	--	< 10 <sup>-5</sup> 5.0427	< 10 <sup>-5</sup> 5.8259	~1.0000 0.5094	< 10 <sup>-5</sup> 6.4267
Test 1/Stressed (3) <i>H24-GAL4&gt; 5HT1A<sup>RNAi</sup></i> R: 45.565	--	--	~1.0000 0.6605	< 10 <sup>-5</sup> 5.2652	~1.0000 1.2487
Test 1/Stressed (4) <i>c739-GAL4&gt; 5HT1A<sup>RNAi</sup></i> R: 37.660	--	--	--	< 10 <sup>-5</sup> 6.0021	~1.0000 0.6009
Test 2/Stressed (Sucrose)(5) <i>H24-GAL4&gt; 5HT1A<sup>RNAi</sup></i> R: 112.25	--	--	--	--	< 10 <sup>-5</sup> 6.5686
Test 2/Stressed (Sucrose) (6) <i>c729-GAL4&gt; 5HT1A<sup>RNAi</sup></i> R: 30.620	--	--	--	--	--

**Tab. 6d** refers to data presented in Figure 6d.

p-values of the KOLMOGOROV-SMIRNOV-Test (KS); LILLIFORS-Tests (Lillif) and SHAPIRO-WILK-Test (SW).

<b>Genotype</b>	<b>N</b>	<b>Std.Dev.</b>	<b>p KS</b>	<b>p Lillif</b>	<b>p SW</b>
<b>Pretest</b> <i>H24-GAL4&gt; 5HT1B<sup>RNAi</sup></i>	26	1.0266	< 0.05	< 0.01	= 0.0137
<b>Pretest</b> <i>c739-GAL4&gt; 5HT1B<sup>RNAi</sup></i>	26	1.0077	< 0.15	< 0.01	= 0.0026
<b>Test 1</b> <i>H24-GAL4&gt; 5HT1B<sup>RNAi</sup></i> <b>Stressed</b>	20	0.9403	< 0.10	< 0.01	= 0.0148
<b>Test 1</b> <i>c739-GAL4&gt; 5HT1B<sup>RNAi</sup></i> <b>Stressed</b>	21	1.3381	> 0.20	< 0.05	= 0.0793

Comparison of the unpaired median data by the KRUSKAL-WALLIS-TEST (K-W).

Upper row: multiple p-values; lower row: z-values.

<b>Genotyp</b>	<b>(2)</b>	<b>(3)</b>	<b>(4)</b>
K-Wallis-Test: H(3 N=93)= 47.2488 p< 10 <sup>-5</sup>			
<b>Pretest (1)</b> <i>H24-GAL4&gt; 5HT1B<sup>RNAi</sup></i> R: 58.404	~1.0000 0.8580	~1.0000 0.4075	< 10 <sup>-5</sup> 5.7666
<b>Pretest (2)</b> <i>c739-GAL4&gt; 5HT1B<sup>RNAi</sup></i> R: 51.981	--	~1.0000 1.2076	< 10 <sup>-5</sup> 4.9555
<b>Test/Stressed (3)</b> <i>H24-GAL4&gt; 5HT1B<sup>RNAi</sup></i> R: 61.675	--	--	< 10 <sup>-5</sup> 5.8030
<b>Test/Stress (4)</b> <i>c739-GAL4&gt; 5HT1B<sup>RNAi</sup></i> R: 12.738	--	--	--



**Supplementary Table 7 | Statistical analysis for Figure 7.**

**Tab. 7a** refers to data presented in Figure 7a.

p-values of the KOLMOGOROV-SMIRNOV-Test (KS); LILLIFORS-Tests (Lillif) and SHAPIRO-WILK-Test (SW).

Genotype	N	Std.Dev.	p KS	p Lillif	p SW
Pretest / <i>5HT-1A-GAL4</i> >UAS-NaChBac	26	0.8038	< 0.01	< 0.01	< 10 <sup>-5</sup>
Pretest / UAS-NaChBac/+	21	0.8891	< 0.05	< 0.01	= 0.0003
Pretest / + <i>5HT-1A-GAL4</i>	20	0.9787	> 0.20	< 0.05	= 0.0464
Test / <i>5HT-1A-GAL4</i> >UAS-NaChBac	26	1.0763	< 0.15	< 0.01	= 0.0009
Test / UAS-NaChBac/+	21	1.2611	> 0.20	< 0.05	= 0.1032
Test / + <i>5HT-1A-GAL4</i>	19	1.1161	< 0.15	< 0.01	= 0.0271

Comparison of the unpaired median data by the KRUSKAL-WALLIS-TEST (K-W) of climbing attempts.

Upper row: multiple p-values; lower row: z-values.

Genotype	(2)	(3)	(4)	(5)	(6)
K-Wallis-Test: H(5 N=133)=72.9694 p< 10 <sup>-5</sup>					
Pretest (1) <i>5HT-1A-GAL4</i> > UAS-NaChBac R: 78.923	~1.0000 0.8175	~1.0000 0.3382	~1.0000 1.0579	< 10 <sup>-5</sup> 4.9017	~1.0000 4.4686
Pretest (2) UAS-NaChBac /+ R: 88.167	--	~1.0000 0.4457	~1.0000 0.1826	< 10 <sup>-5</sup> 5.4374	< 10 <sup>-5</sup> 5.0172
Pretest (3) + <i>5HT-1A-GAL4</i> R: 82.800	--	--	~1.0000 0.6483	< 10 <sup>-5</sup> 4.9249	0.0001 4.5239
Test (4) <i>5HT-1A-GAL4</i> > UAS-NaChBac R: 90.231	--	--	--	< 10 <sup>-5</sup> 5.9018	< 10 <sup>-5</sup> 5.4408
Test (5) UAS-NaChBac /+ R: 23.50	--	--	--	--	~1.0000 0.2825
Test (6) + <i>5HT-1A-GAL4</i> R: 26.947	--	--	--	--	--

**Tab. 7b** refers to data presented in Figure 7b.

p-values of the KOLMOGOROV-SMIRNOV-Test (KS); LILLIFORS-Tests (Lillif) and SHAPIRO-WILK-Test (SW).

Genotype	N	Std.Dev.	p KS	p Lillif	p SW
Pretest <i>5HT-1B-GAL4</i> > UAS-NaChBac	63	0.8957	< 0.01	< 0.01	< 10 <sup>-5</sup>
Pretest UAS-NaChBac/+	64	0.8858	< 0.01	< 0.01	< 10 <sup>-5</sup>
Pretest + <i>5HT-1B-GAL4</i>	60	0.7702	< 0.01	< 0.01	< 10 <sup>-5</sup>
Test 1 <i>5HT-1B-GAL4</i> > UAS-NaChBac	21	1.5675	< 0.20	< 0.01	= 0.0924
Test 1 UAS-NaChBac/+	23	0.7777	< 0.05	< 0.01	= 0.0035
Test 1 + <i>5HT-1B-GAL4</i>	20	0.9881	< 0.15	< 0.01	= 0.0436
Test 2 <i>5HT-1B-GAL4</i> > UAS-NaChBac	20	1.0311	< 0.15	< 0.01	= 0.0056
Test 2 UAS-NaChBac/+	21	1.1233	> 0.20	< 0.01	= 0.0336
Test 2 + <i>5HT-1B-GAL4</i>	19	1.0976	> 0.20	< 0.10	= 0.0114
Test 3 <i>5HT-1B-GAL4</i> > UAS-NaChBac	20	0.9403	< 0.05	< 0.01	= 0.0022
Test 3 UAS-NaChBac/+	20	1.0311	< 0.10	< 0.01	= 0.0114
Test 3 + <i>5HT-1B-GAL4</i>	19	1.6490	< 0.20	< 0.01	= 0.1887

Genotype	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
K-Wallis-Test: H(11 N=370)=199.0453 p < 10 <sup>-5</sup>											
<b>Pretest (1)</b> <i>5HT-1B-GAL4&gt;NaChBac</i> R: 218.95	~1.0000 2.2699	~1.0000 0.2500	0.0003 4.5905	~1.0000 1.5812	~1.0000 0.8088	< 10 <sup>-5</sup> 6.4990	~1.0000 0.1793	~1.0000 1.7290	< 10 <sup>-5</sup> 6.3752	< 10 <sup>-5</sup> 5.1311	0.0001 4.9384
<b>Pretest (2)</b> <i>UAS-NaChBac/+</i> R: 262.04	--	~1.0000 1.9909	< 10 <sup>-5</sup> 6.2014	~1.0000 0.0726	~1.0000 2.3829	< 10 <sup>-5</sup> 8.0839	~1.0000 1.4222	0.0670 3.2741	< 10 <sup>-5</sup> 7.9598	< 10 <sup>-5</sup> 6.7134	< 10 <sup>-5</sup> 6.4893
<b>Pretest (3)</b> <i>+/5HT-1B-GAL4</i> R: 223.78	--	--	0.0001 4.7399	~1.0000 1.3869	~1.0000 0.9786	< 10 <sup>-5</sup> 6.6349	~1.0000 0.0004	~1.0000 1.8903	< 10 <sup>-5</sup> 6.5118	< 10 <sup>-5</sup> 5.2751	< 10 <sup>-5</sup> 5.0813
<b>Test 1 (4)</b> <i>5HT-1B-GAL4&gt;NaChBac</i> R: 95.238	--	--	--	< 10 <sup>-5</sup> 5.1087	0.1573 3.0378	~1.0000 1.6365	0.0065 3.8946	~1.0000 2.2240	~1.0000 1.5348	~1.0000 0.5129	~1.0000 0.4290
<b>Test 1 (5)</b> <i>UAS-NaChBac/+</i> R: 260.15	--	--	--	--	~1.0000 1.9389	< 10 <sup>-5</sup> 6.7156	~1.0000 1.1266	0.4546 2.7022	< 10 <sup>-5</sup> 6.6116	< 10 <sup>-5</sup> 5.5673	< 10 <sup>-5</sup> 5.4118
<b>Test 1 (6)</b> <i>+/5HT-1B-GAL4</i> R: 196.75	--	--	--	--	--	0.0003 4.6183	~1.0000 0.8090	~1.0000 0.7646	0.0004 4.5178	0.0298 3.5081	0.0467 3.3866
<b>Test 2 (7)</b> <i>5HT-1B-GAL4&gt;NaChBac</i> R: 40.550	--	--	--	--	--	--	< 10 <sup>-5</sup> 5.4833	0.0098 3.7942	~1.0000 0.1005	~1.0000 1.1102	~1.0000 1.1721
<b>Test 2 (8)</b> <i>UAS-NaChBac/+</i> R: 223.79	--	--	--	--	--	--	--	~1.0000 1.5720	< 10 <sup>-5</sup> 5.3816	0.0009 4.3597	0.0016 4.2250
<b>Test 2 (9)</b> <i>+/5HT-1B-GAL4</i> R: 170.55	--	--	--	--	--	--	--	--	0.0145 3.6949	0.4601 2.6982	0.6351 2.5891
<b>Test 3 (7)</b> <i>5HT-1B-GAL4&gt;NaChBac</i> R: 43.950	--	--	--	--	--	--	--	--	--	~1.0000 1.0097	~1.0000 1.0729
<b>Test 3 (8)</b> <i>UAS-NaChBac/+</i> R: 78.100	--	--	--	--	--	--	--	--	--	--	~1.0000 0.0762
<b>Test 3 (9)</b> <i>+/5HT-1B-GAL4</i> R: 80.711	--	--	--	--	--	--	--	--	--	--	--

Tab. 7c refers to data presented in Figure 7c.

p-values of the KOLMOGOROV-SMIRNOV-Test (KS); LILLIFORS-Tests (Lillif) and SHAPIRO-WILK-Test (SW).

	N	Std.Dev.	p KS	p Lillif	p SW
<b>Pretest Group 1 (CS)</b>	21	0.9258	< 0.10	< 0.01	= 0.0109
<b>Pretest Group 2 (CS)</b>	21	0.9437	< 0.20	< 0.01	= 0.0265
<b>Test 1/Stressed Group 1 (CS)</b>	21	1.3274	> 0.20	< 0.10	= 0.2061
<b>Test 1/Stressed Group 2 (CS)</b>	21	1.1792	> 0.20	< 0.05	= 0.0581
<b>Test 2/Stressed Group 1 + SSRI</b>	18	1.1448	> 0.20	< 0.05	= 0.1330
<b>Test 2/Stressed Group 2 + H<sub>2</sub>O</b>	21	1.2440	> 0.20	< 0.05	= 0.2987

Comparison of the unpaired median data by the KRUSKAL-WALLIS-TEST (K-W).

Upper row: multiple p-values; lower row: z-values.

	(2)	(3)	(4)	(5)	(6)
K-Wallis-Test: H(5 N=123)= 80.0898 p< 10 <sup>-5</sup>					
<b>Pretest (1) Group 1 (CS) R: 95.095</b>	~1.0000 0.3051	< 10 <sup>-5</sup> 5.5898	< 10 <sup>-5</sup> 5.2717	~1.0000 1.7815	< 10 <sup>-5</sup> 5.4729
<b>Pretest 1 (2) Group 2 (CS) R: 98.452</b>	--	< 10 <sup>-5</sup> 5.8949	< 10 <sup>-5</sup> 5.5768	0.5703 2.0747	< 10 <sup>-5</sup> 5.7781
<b>Test 1/Stressed (3) Group 1 (CS) R: 33.595</b>	--	--	~1.0000 0.3181	0.0050 3.5890	~1.0000 0.1169
<b>Test 1/Stressed (4) Group 2 (CS) R: 37.095</b>	--	--	--	0.0154 3.2834	~1.0000 0.2013
<b>Test 2/Stressed (5) Group 1 + Prozac R: 74.694</b>	--	--	--	--	0.0076 3.4767
<b>Test 2/Stressed (6) Group 2 + H<sub>2</sub>O R: 34.881</b>	--	--	--	--	--

**Tab. 7d** refers to data presented in Figure 7d.

p-values of the KOLMOGOROV-SMIRNOV-Test (KS); LILLIFORS-Tests (Lillif) and SHAPIRO-WILK-Test (SW).

Genotype	N	Std.Dev.	p KS	p Lillif	p SW
Pretest <i>H24-GAL4&gt;UAS-TNT</i>	25	0.7024	< 0.10	< 0.01	= 0.0003
Test 1 <i>H24-GAL4&gt;UAS-TNT+8-OH-DPAT</i>	24	1.0206	> 0.20	< 0.05	= 0.0095
Pretest UAS-TNT/II	25	1.2069	< 0.10	< 0.01	= 0.0280
Test 1 UAS-TNT/II+8-OH-DPAT	25	1.1662	< 0.20	< 0.01	= 0.0194
Pretest <i>H24-GAL4/II</i>	25	0.9183	< 0.15	< 0.01	= 0.0077
Test 1 <i>H24-GAL4/II+8-OH-DPAT</i>	24	1.1034	> 0.20	< 0.10	= 0.0346

Comparison of the unpaired median data by the KRUSKAL-WALLIS-TEST (K-W).

Upper row: multiple p-values; lower row: z-values.

Genotyp	(2)	(3)	(4)	(5)	(6)
K-Wallis-Test: H(5 N=148)= 80.5844 p< 10 <sup>-5</sup>					
Pretest (1) <i>H24-GAL4&gt;UAS-TNT</i> R: 110.84	~1.0000 1.3066	0.0908 2.7448	< 10 <sup>-5</sup> 6.9048	~1.0000 1.1464	< 10 <sup>-5</sup> 5.8557
Test 1 <i>H24-GAL4&gt;UAS-TNT+8-OH-DPAT</i> R: 94.833	--	~1.0000 1.4100	< 10 <sup>-5</sup> 5.5274	~1.0000 0.1720	0.0001 4.5034
Pretest UAS-TNT/II R: 77.560	--	--	0.0005 4.1600	~1.0000 1.5984	0.0254 3.1391
Test 1 UAS-TNT/II+8-OH-DPAT R: 27.120	--	--	--	< 10 <sup>-5</sup> 5.7584	~1.0000 0.9783
Pretest <i>H24-GAL4/II</i> R: 96.940	--	--	--	--	< 10 <sup>-5</sup> 4.7211
Test 1 <i>H24-GAL4/II+8-OH-DPAT</i> R: 39.104	--	--	--	--	--

**Supplementary Table 8 | Statistical analysis for Figure S1.**

**Tab. 8a** refers to data presented in Figure S1a.

p-values of the **KOLMOGOROV-SMIRNOV-Test (KS)**; **LILLIFORS-Tests (Lillif)** and **SHAPIRO-WILK-Test (SW)**.

	<b>N</b>	<b>Std.Dev.</b>	<b>p KS</b>	<b>p Lillif</b>	<b>p SW</b>
<b>CS no object</b>	29	0.9285	< 0.10	< 0.01	= 0.0130
<b>CS vis. obj.</b>	28	0.7935	< 0.05	< 0.01	= 0.0014
<b>CS odour</b>	28	0.9201	< 0.05	< 0.01	= 0.0036
<b>CS vis. obj. + odour</b>	28	0.8698	< 0.10	< 0.01	= 0.0028

Comparison of the unpaired median data by the **KRUSKAL-WALLIS-TEST (K-W)** of climbing attempts.  
Upper row: multiple p-values; lower row: z-values.

	<b>(2)</b>	<b>(3)</b>	<b>(4)</b>
K-Wallis-Test: $H(3, N=113)=73,7944$ $p < 10^{-5}$			
<b>CS no obj. (1)</b> R: 111.93	< $10^{-5}$ 5.2158	< $10^{-5}$ 4.9710	< $10^{-5}$ 8.2809
<b>CS vis. obj. (2)</b> R: 118.20	--	~1,0000 0.2427	0.0143 3.0385
<b>CS odour (3)</b> R: 102.28	--	--	0.0062 3.2812
<b>CS vis. obj. + odour (4)</b> R: 104.70	--	--	--

**Tab. 8b** refers to data presented in Figure S1b.

p-values of the KOLMOGOROV-SMIRNOV-Test (KS); LILLIFORS-Tests (Lillif) and SHAPIRO-WILK-Test (SW).

<b>Genotype</b>	<b>N</b>	<b>Std.Dev.</b>	<b>p KS</b>	<b>p Lillif</b>	<b>p SW</b>
<b>CS 1<sup>st</sup> run no stimulus (Group I)</b>	24	1.5598	> 0.20	< 0.15	= 0.0941
<b>CS 1<sup>st</sup> run no stimulus (Group II)</b>	23	1.5616	> 0.20	< 0.10	= 0.2649
<b>CS 2<sup>nd</sup> run (24h later) odour</b>	24	1.0734	< 0.10	< 0.01	= 0.0061
<b>CS 2<sup>nd</sup> run (24h later) no odour</b>	23	1.4904	< 0.10	< 0.01	= 0.0043
<b>H24&gt;TNT 1<sup>st</sup> run no stimulus (Group I)</b>	27	1.5021	> 0.20	< 0.10	= 0.1796
<b>H24&gt;TNT 1<sup>st</sup> run no stimulus (Group II)</b>	22	1.7563	> 0.20	< 0.01	= 0.1867
<b>H24&gt;TNT 2<sup>nd</sup> run (24h later) odour</b>	27	1.6486	> 0.20	< 0.05	= 0.0876
<b>H24&gt;TNT 2<sup>nd</sup> run (24h later) no odour</b>	22	1.3266	< 0.20	< 0.01	= 0.0261
<b>c305a&gt;TNT 1<sup>st</sup> run no stimulus (Group I)</b>	23	1.1995	> 0.20	< 0.01	= 0.0208
<b>c305a&gt;TNT 1<sup>st</sup> run no stimulus (Group II)</b>	24	1.2959	> 0.20	< 0.01	= 0.0163
<b>c305a&gt;TNT 2<sup>nd</sup> run (24h later) odour</b>	23	1.3817	> 0.20	< 0.15	= 0.0335
<b>c305a&gt;TNT 2<sup>nd</sup> run (24h later) no odour</b>	24	1.2504	> 0.20	< 0.05	= 0.0827
<b>mb247&gt;TNT 1<sup>st</sup> run no stimulus (Group I)</b>	21	1.8860	> 0.20	< 0.05	= 0.0588
<b>mb247&gt;TNT 1<sup>st</sup> run no stimulus (Group II)</b>	20	1.4681	> 0.20	> 0.20	= 0.1738
<b>mb247&gt;TNT 2<sup>nd</sup> run (24h later) odour</b>	21	1.8297	> 0.20	< 0.15	= 0.1487
<b>mb247&gt;TNT 2<sup>nd</sup> run (24h later) no odour</b>	20	1.5044	> 0.20	< 0.05	= 0.1704
<b>c739&gt;TNT 1<sup>st</sup> run no stimulus (Group I)</b>	21	1.3990	> 0.20	< 0.05	= 0.1623
<b>c739&gt;TNT 1<sup>st</sup> run no stimulus (Group II)</b>	21	1.1019	< 0.20	< 0.01	= 0.0248
<b>c739&gt;TNT 2<sup>nd</sup> run (24h later) odour</b>	21	1.8746	> 0.20	< 0.10	= 0.1290
<b>c739&gt;TNT 2<sup>nd</sup> run (24h later) no odour</b>	21	1.8949	> 0.20	< 0.10	= 0.1100

Comparison of the paired data of the climbing behaviour of *Drosophila* males by the WILCOXON-MATCHED-PAIRS Test of their first run without odour and their second run paired with odour.

Genotype	N	T	Z	p
CS 2 <sup>nd</sup> run (24 h) + odour vs. CS 1 <sup>st</sup> run - no stimulus (Group I)	24	11.50	3.4906	0.0005
H24>TNT 2 <sup>nd</sup> run (24 h) + odour vs. H24>TNT 1 <sup>st</sup> run - no stimulus (Group I)	27	32.00	3.0680	0.0022
c305a>TNT 2 <sup>nd</sup> run (24 h) + odour vs. c305a>TNT 1 <sup>st</sup> run - no stimulus (Group I)	23	12.00	3.5974	0.0003
mb247>TNT 2 <sup>nd</sup> run (24 h) + odour vs. mb247>TNT 1 <sup>st</sup> run - no stimulus (Group I)	21	56.00	0.2272	0.8203
c739>TNT 2 <sup>nd</sup> run (24 h) + odour vs. c739>TNT 1 <sup>st</sup> run - no stimulus (Group I)	21	60.50	0.3878	0.6982

Comparison of the paired data of the climbing behaviour of *Drosophila* males by the WILCOXON-MATCHED-PAIRS Test of their first run without odour and their second run without odour.

Genotype	N	T	Z	p
CS 1 <sup>st</sup> run - no stimulus (Group II) vs. CS 2 <sup>nd</sup> run (24 h) no odour	23	21.00	2.6273	0.0086
H24>TNT 1 <sup>st</sup> run - no stimulus (Group II) vs. H24>TNT 2 <sup>nd</sup> run (24 h) no odour	22	84.00	0.7840	0.4330
c305a>TNT 1 <sup>st</sup> run - no stimulus (Group II) vs. c305a>TNT 2 <sup>nd</sup> run (24 h) no odour	24	88.00	0.2817	0.7782
mb247>TNT 1 <sup>st</sup> run - no stimulus (Group II) vs. mb247>TNT 2 <sup>nd</sup> run (24 h) no odour	20	48.00	1.3491	0.1773
c739>TNT 1 <sup>st</sup> run - no stimulus (Group II) vs. c739>TNT 2 <sup>nd</sup> run (24 h) no odour	21	35.50	1.3915	0.1641

Comparison of the unpaired data of the climbing behaviour of *Drosophila* males by the MANN-WHITNEY-U-Test (Mann U) of their second run with a food-odour and their second run without an odour.

Group	U	Z	2*1 sided exact p
CS 2 <sup>nd</sup> run (24 h) + odour vs. CS 2 <sup>nd</sup> run (24 h) +no odour	142.50	2.8411	0.0038
H24>TNT 2 <sup>nd</sup> run (24 h) + odour vs. H24>TNT 2 <sup>nd</sup> run (24 h) +no odour	232.50	1.2965	0.1967
c305a>TNT 2 <sup>nd</sup> run (24 h) + odour vs. c305a>TNT 2 <sup>nd</sup> run (24 h) + no odour	187.50	1.8834	0.0592
mb247>TNT 2 <sup>nd</sup> run (24 h) + odour vs. mb247>TNT 2 <sup>nd</sup> run (24 h) + no odour	207.50	-0.0652	0.9486
c739>TNT 2 <sup>nd</sup> run (24 h) + odour vs. c739>TNT 2 <sup>nd</sup> run (24 h) + no odour	193.00	0.6918	0.5010

**Tab. 8c** refers to data presented in Figure 11c.

p-values of the KOLMOGOROV-SMIRNOV-Test (KS); LILLIFORS-Tests (Lillif) and SHAPIRO-WILK-Test (SW).

Genotype	N	Std.Dev.	p KS	p Lillif	p SW
CS 1 <sup>st</sup> run no stimulus (Group I)	25	0.9363	< 0.10	< 0.01	= 0.0051
CS 1 <sup>st</sup> run no stimulus (Group II)	25	1.2356	< 0.20	< 0.01	= 0.0252
CS 2 <sup>nd</sup> run (24h later) vis. obj.	25	1.1136	> 0.20	< 0.05	= 0.0032
CS 2 <sup>nd</sup> run (24h later) no obj.	25	1.3229	< 0.15	< 0.01	= 0.0670
H24>TNT 1 <sup>st</sup> run no stimulus (Group I)	17	0.9034	< 0.10	< 0.01	= 0.0106
H24>TNT 1 <sup>st</sup> run no stimulus (Group II)	18	0.9003	< 0.05	< 0.01	= 0.0028
H24>TNT 2 <sup>nd</sup> run (24h later) vis. obj.	17	1.0146	> 0.20	< 0.05	= 0.0252
H24>TNT 2 <sup>nd</sup> run (24h later) no obj.	18	0.8264	> 0.20	< 0.01	= 0.0234
NP1131>TNT 1 <sup>st</sup> run no stimulus (Group I)	23	0.9679	> 0.20	< 0.01	= 0.0311
NP1131>TNT 1 <sup>st</sup> run no stimulus (Group II)	23	0.9960	< 0.20	< 0.01	= 0.0278
NP1131>TNT 2 <sup>nd</sup> run (24h later) vis. obj.	23	1.2175	> 0.20	< 0.05	= 0.0524
NP1131>TNT 2 <sup>nd</sup> run (24h later) no obj.	23	1.3644	> 0.20	< 0.15	= 0.3714
mb247>TNT 1 <sup>st</sup> run no stimulus (Group I)	15	0.8619	> 0.20	< 0.01	= 0.0502
mb247>TNT 1 <sup>st</sup> run no stimulus (Group II)	15	1.1255	< 0.20	< 0.01	= 0.0568
mb247>TNT 2 <sup>nd</sup> run (24h later) vis. obj.	15	1.0556	< 0.10	< 0.01	= 0.0149
mb247>TNT 2 <sup>nd</sup> run (24h later) no obj.	15	0.8619	< 0.20	< 0.01	= 0.0028
c739>TNT 1 <sup>st</sup> run no stimulus (Group I)	20	1.5183	> 0.20	< 0.05	= 0.1106
c739>TNT 1 <sup>st</sup> run no stimulus (Group II)	20	1.1821	< 0.20	< 0.01	= 0.0429
c739>TNT 2 <sup>nd</sup> run (24h later) vis. obj.	20	1.5009	> 0.20	< 0.10	= 0.1099
c739>TNT 2 <sup>nd</sup> run (24h later) no obj.	20	1.6376	> 0.20	> 0.20	= 0.5225

Comparison of the paired data of the climbing behaviour of *Drosophila* males by the WILCOXON-MATCHED-PAIRS Test of their first run without visual object and their second run with a visual object.

Genotype	N	T	Z	p
CS 2 <sup>nd</sup> run (24 h) + vis.obj. vs. CS 1 <sup>st</sup> run - no stimulus (Group I)	25	0.00	4.1069	<10 <sup>-5</sup>
H24>TNT 2 <sup>nd</sup> run (24 h) + vis.obj. vs. H24>TNT 1 <sup>st</sup> run - no stimulus (Group I)	17	0.00	3.4078	0.0007
NP1131>TNT 2 <sup>nd</sup> run (24 h) + vis.obj. vs. NP1131>TNT 1 <sup>st</sup> run - no stimulus (Group I)	23	23.00	3.2151	0.0013
mb247>TNT 2 <sup>nd</sup> run (24 h) + vis.obj. vs. mb247>TNT 1 <sup>st</sup> run - no stimulus (Group I)	15	13.00	1.1255	0.2604
c739>TNT 2 <sup>nd</sup> run (24 h) + vis.obj. vs. c739>TNT 1 <sup>st</sup> run - no stimulus (Group I)	20	42.50	1.3186	0.1873



Comparison of the paired data of the climbing behaviour of *Drosophila* males by the WILCOXON-MATCHED-PAIRS Test of their first run without visual object and their second run also without visual object.

Genotype	N	T	Z	p
CS 1 <sup>st</sup> run - no stimulus (Group II) vs. CS 2 <sup>nd</sup> run (24 h) no vis.obj.	25	73.50	0.5226	0.6013
H24>TNT 1 <sup>st</sup> run - no stimulus (Group II) vs. H24>TNT 2 <sup>nd</sup> run (24 h) no vis.obj.	18	33.00	0.4707	0.6379
c305a>TNT 1 <sup>st</sup> run - no stimulus (Group II) vs. c305a>TNT 2 <sup>nd</sup> run (24 h) no vis.obj.	23	51.00	0.0942	0.9250
mb247>TNT 1 <sup>st</sup> run - no stimulus (Group II) vs. mb247>TNT 2 <sup>nd</sup> run (24 h) no vis.obj.	15	39.00	0.8475	0.3967
c739>TNT 1 <sup>st</sup> run - no stimulus (Group II) vs. c739>TNT 2 <sup>nd</sup> run (24 h) no vis.obj.	20	49.50	0.9566	0.3388

Comparison of the unpaired data of the climbing behaviour of *Drosophila* males by the MANN-WHITNEY-U-Test (Mann U) of their second run with a visual object and their second run without a visual object.

Group	U	Z	2*1 sided exact p
CS 2 <sup>nd</sup> run (24 h) + vis.obj. vs. CS 2 <sup>nd</sup> run (24 h) +no obj.	111.50	3.9000	<10 <sup>-5</sup>
H24>TNT 2 <sup>nd</sup> run (24 h) + vis.obj. vs. H24>TNT 2 <sup>nd</sup> run (24 h) +no obj.	41.00	3.6966	0.0001
c305a>TNT 2 <sup>nd</sup> run (24 h) + vis.obj. vs. c305a>TNT 2 <sup>nd</sup> run (24 h) + no obj.	141.00	2.7132	0.0061
mb247>TNT 2 <sup>nd</sup> run (24 h) + vis.obj. vs. mb247>TNT 2 <sup>nd</sup> run (24 h) + no obj.	94.00	0.7673	0.4610
c739>TNT 2 <sup>nd</sup> run (24 h) + vis.obj. vs. c739>TNT 2 <sup>nd</sup> run (24 h) + no obj.	171.50	-0.7709	0.4450

## Supplementary Table 9 | Statistical analysis for Figure S2.

**Tab. 9a** refers to data presented in Figure S2a.

p-values of the KOLMOGOROV-SMIRNOV-Test (KS); LILLIFORS-Tests (Lillif) and SHAPIRO-WILK-Test (SW).

	N	Std.Dev.	p KS	p Lillif	p SW
<b>Pretest CS</b>	40	0.7910	< 0.01	< 0.01	< 10 <sup>-5</sup>
<b>Test CS Group Stress with sucrose</b>	20	0.9515	> 0.20	< 0.05	= 0.0459
<b>Test CS Group Stress no sucrose</b>	20	1.1910	> 0.20	< 0.05	= 0.0387

Comparison of the unpaired median data by the KRUSKAL-WALLIS-TEST (K-W) of climbing attempts.

Upper row: multiple p-values; lower row: z-values.

	(2)	(3)
K-Wallis-Test: H(2, N=80)=41.2017 p< 10 <sup>-5</sup>		
<b>Pretest (1) CS</b> R: 49.913	~1.0000 0.0452	< 10 <sup>-5</sup> 5.8710
<b>Pretest (2) CS/ group stress with sucrose</b> R: 49.625	--	< 10 <sup>-5</sup> 5.0453
<b>Pretest (3) CS/ group stress no sucrose</b> R: 12.550	--	--

**Tab. 9b** refers to data presented in Figure S2b.

p-values of the KOLMOGOROV-SMIRNOV-Test (KS); LILLIFORS-Tests (Lillif) and SHAPIRO-WILK-Test (SW).

	N	Std.Dev.	p KS	p Lillif	p SW
<b>Pretest Group 1 (CS)</b>	24	0.8165	< 0.10	< 0.01	= 0.0006
<b>Pretest Group 2 (CS)</b>	24	0.8297	< 0.01	< 0.01	= 0.0004
<b>Pretest Group 3 (CS)</b>	24	0.8502	< 0.15	< 0.01	= 0.0011
<b>Test 1 Group 1 (CS &gt; stressed)</b>	23	1.1123	> 0.20	< 0.05	= 0.0040
<b>Test 1 Group 2 (CS &gt; stressed)</b>	24	1.0135	> 0.20	< 0.05	= 0.0385
<b>Test 1 Group 3 (CS &gt; stressed)</b>	24	1.1516	> 0.20	< 0.05	= 0.0479
<b>Test 2 (stressed) Group 1 + Sucrose</b>	23	1.1524	< 0.15	< 0.01	= 0.0163
<b>Test 2 (stressed) Group 2 + H<sub>2</sub>O</b>	24	1.0632	< 0.15	< 0.01	= 0.0163
<b>Test 2 (stressed) Group 3 + Arabinose</b>	24	1.2730	> 0.20	< 0.05	= 0.1280

Comparison of the unpaired median data by the KRUSKAL-WALLIS-TEST (K-W).

Upper row: multiple p-values; lower row: z-values.

	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
K-Wallis-Test: H(8 N= 213)= 150.0822 p< 10 <sup>-5</sup>								
<b>Pretest (1)</b> <b>Group 1 (CS)</b> R: 154.00	~1.0000 0.5258	~1.0000 0.0796	< 10 <sup>-5</sup> 5.7285	< 10 <sup>-5</sup> 5.8349	< 10 <sup>-5</sup> 5.6335	~1.0000 0.2575	< 10 <sup>-5</sup> 6.0024	~1.0000 0.8063
<b>Pretest (2)</b> <b>Group 2 (CS)</b> R: 163.35	--	~1.0000 0.4461	< 10 <sup>-5</sup> 6.2487	< 10 <sup>-5</sup> 6.3607	< 10 <sup>-5</sup> 6.1593	~1.0000 0.7776	< 10 <sup>-5</sup> 6.5281	~1.0000 1.3264
<b>Pretest (3)</b> <b>Group 3 (CS)</b> R: 155.42	--	--	< 10 <sup>-5</sup> 5.8073	< 10 <sup>-5</sup> 5.9145	< 10 <sup>-5</sup> 5.7131	~1.0000 0.3363	< 10 <sup>-5</sup> 6.0820	~1.0000 0.8850
<b>Test 1/Stress (4)</b> <b>Group 1 (CS)</b> R: 50.978	--	--	--	~1.0000 0.0440	~1.0000 0.1553	< 10 <sup>-5</sup> 5.4138	~1.0000 0.2096	< 10 <sup>-5</sup> 4.8707
<b>Test 1/Stress (5)</b> <b>Group 2 (CS)</b> R: 50.188	--	--	--	--	~1.0000 0.2014	< 10 <sup>-5</sup> 5.5150	~1.0000 0.1674	< 10 <sup>-5</sup> 4.9662
<b>Test 1/Stress (6)</b> <b>Group 3 (CS)</b> R: 53.771	--	--	--	--	--	< 10 <sup>-5</sup> 5.3158	~1.0000 0.3689	0.0001 4.7670
<b>Test 2/Stress (7)</b> <b>Group 1 + Sucrose</b> R: 149.37	--	--	--	--	--	--	< 10 <sup>-5</sup> 5.6807	~1.0000 0.5431
<b>Test 2/Stress (8)</b> <b>Group 2 + H<sub>2</sub>O</b> R: 47.208	--	--	--	--	--	--	--	< 10 <sup>-5</sup> 5.1319
<b>Test 2/Stress (9)</b> <b>Group 2 + Arabinose</b> R: 139.50	--	--	--	--	--	--	--	--

**Tab. 9c** refers to data presented in Figure S2c.

p-values of the KOLMOGOROV-SMIRNOV-Test (KS); LILLIFORS-Tests (Lillif) and SHAPIRO-WILK-Test (SW).

	N	Std.Dev.	p KS	p Lillif	p SW
<b>Group Sucrose</b>	8	0.4711	> 0.20	< 0.15	= 0.0245
<b>Group H<sub>2</sub>O</b>	8	0.4244	> 0.20	> 0.20	= 0.9998
<b>Group Sucrose + αMTP</b>	11	0.2603	> 0.20	> 0.20	= 0.5193

Comparison of the normally distributed data of the 5HT-quantification in the ellipsoid body by the unpaired T-TEST of *Drosophila* males of the stressed and control group.

Group	t	F	p
<b>Group Sucrose</b> vs. <b>Group H<sub>2</sub>O</b>	-2.2659	1.2318	0.0398
<b>Group Sucrose</b> vs. <b>Group Sucrose + αMTP</b>	2.6996	3.2753	0.0152
<b>Group H<sub>2</sub>O</b> vs. <b>Group Sucrose + αMTP</b>	-0.3413	2.6589	0.7371

**Tab. 9d** refers to data presented in Figure S2d.

p-values of the KOLMOGOROV-SMIRNOV-Test (KS); LILLIFORS-Tests (Lillif) and SHAPIRO-WILK-Test (SW).

	<b>N</b>	<b>Std.Dev.</b>	<b>p KS</b>	<b>p Lillif</b>	<b>p SW</b>
<b>H<sub>2</sub>O</b>	8	0.4815	> 0.20	> 0.20	= 0.4393
<b>Sucrose</b>	8	1.4230	> 0.20	< 0.05	= 0.0230
<b>Sucrose + <math>\alpha</math>MTP</b>	11	0.3387	> 0.20	< 0.15	= 0.2052

Comparison of the unpaired median data by the KRUSKAL-WALLIS-TEST (K-W).

Upper row: multiple p-values; lower row: z-values.

<b>Genotype</b>	<b>(2)</b>	<b>(3)</b>
K-Wallis-Test: H(2 N=27)= 10.5251 p< 0.0052		
<b>H<sub>2</sub>O (1)</b> R: 13.125	0.1219 2.0473	0.9234 0.0199
<b>Sucrose (2)</b> R: 21.250	--	0.0038 3.2229
<b>Sucrose + <math>\alpha</math>MTP (3)</b> R: 9.364	--	--

**Tab. 9e** refers to data presented in Figure S2e.

p-values of the KOLMOGOROV-SMIRNOV-Test (KS); LILLIFORS-Tests (Lillif) and SHAPIRO-WILK-Test (SW).

	<b>N</b>	<b>Std.Dev.</b>	<b>p KS</b>	<b>p Lillif</b>	<b>p SW</b>
<b>GFP intensity in <math>\alpha</math>-lobes Control</b>	12	996194.8	> 0.20	> 0.20	= 0.3615
<b>GFP intensity in <math>\alpha</math> lobes Stressed group</b>	12	750375.7	> 0.20	< 0.10	= 0.1278
<b>GFP Intensity in <math>\beta</math>-lobes Control</b>	12	957297.6	> 0.20	> 0.20	= 0.5101
<b>GFP Intensity in <math>\beta</math>-lobes Stressed group</b>	13	702174.6	> 0.20	< 0.20	= 0.5537
<b>GFP Intensity in the EB Control</b>	12	896035.9	> 0.20	> 0.20	= 0.4320
<b>GFP Intensity in the EB Stressed group</b>	13	960263.4	> 0.20	> 0.20	= 0.2081

Comparison of the normally distributed data by the unpaired T-TEST (K-W) of the GFP Intensity in different brain compartments of the stressed flies and the control group.

<b>Group</b>	<b>T</b>	<b>F</b>	<b>p</b>
<b>Stress vs. Control (in <math>\alpha</math>-lobes)</b>	-0.4479	1.7625	0.6586
<b>Stress vs. Control (in <math>\beta</math>-lobes)</b>	-1.6970	1.8587	0.1032
<b>Stress vs. Control (in the EB)</b>	-1.9030	1.1485	0.0696

## Supplementary Table 10 | Statistical analysis for Figure S4.

Tab. 10a refers to data presented in Figure S4a.

p-values of the KOLMOGOROV-SMIRNOV-Test (KS); LILLIFORS-Tests (Lillif) and SHAPIRO-WILK-Test (SW).

	N	Std.Dev.	p KS	p Lillif	p SW
Pretest <i>mb247&gt;&gt;GAL80<sup>ts</sup>&gt;5HT1A<sup>RNAi</sup></i>	21	1.2209	> 0.20	< 0.01	= 0.0683
Pretest <i>mb247&gt;&gt;GAL80<sup>ts</sup>&gt;5HT1A<sup>RNAi</sup></i>	21	0.9284	< 0.20	< 0.01	= 0.0214
Test 1 <i>mb247&gt;&gt;GAL80<sup>ts</sup>&gt;5HT1A<sup>RNAi</sup></i> Stressed Group (18°C)	21	1.0556	< 0.15	< 0.01	= 0.0594
Test 1 <i>mb247&gt;&gt;GAL80<sup>ts</sup>&gt;5HT1A<sup>RNAi</sup></i> Stressed Group (29°C)	21	1.1609	< 0.10	< 0.01	= 0.0216
Test 2 (sucrose) <i>mb247&gt;&gt;GAL80<sup>ts</sup>&gt;5HT1A<sup>RNAi</sup></i> Stressed Group (18°)	20	1.2763	> 0.20	< 0.15	= 0.3753
Test 2 (sucrose) <i>mb247&gt;&gt;GAL80<sup>ts</sup>&gt;5HT1A<sup>RNAi</sup></i> Stressed Group (29°C)	21	1.1106	> 0.20	< 0.05	= 0.1070

Comparison of the unpaired median data by the KRUSKAL-WALLIS-TEST (K-W).

Upper row: multiple p-values; lower row: z-values.

Genotyp	(2)	(3)	(4)	(5)	(6)
K-Wallis-Test: H(5 N=125)= 85.9224 p< 10 <sup>-5</sup>					
Pretest/Stress (1) <i>mb247&gt;&gt;GAL80<sup>ts</sup>&gt;5HT1A<sup>RNAi</sup></i> R: 95.143	~1.0000 0.3237	< 10 <sup>-5</sup> 5.1366	< 10 <sup>-5</sup> 5.6562	~1.0000 0.2997	< 10 <sup>-5</sup> 5.7073
Pretest/Stress (2) <i>mb247&gt;&gt;GAL80<sup>ts</sup>&gt;5HT1A<sup>RNAi</sup></i> R: 91.524	--	< 10 <sup>-5</sup> 4.8129	< 10 <sup>-5</sup> 5.3325	~1.0000 0.0110	< 10 <sup>-5</sup> 5.3836
Test 1/Stress (18°C) (3) <i>mb247&gt;&gt;GAL80<sup>ts</sup>&gt;5HT1A<sup>RNAi</sup></i> R: 37.714	--	--	~1.0000 0.5196	< 10 <sup>-5</sup> 4.7738	~1.0000 0.5707
Test 1/Stress (29°C) (4) <i>mb247&gt;&gt;GAL80<sup>ts</sup>&gt;5HT1A<sup>RNAi</sup></i> R: 31.905	--	--	--	< 10 <sup>-5</sup> 5.2870	~1.0000 0.0511
Test 2/Stress (18°C)(5) <i>mb247&gt;&gt;GAL80<sup>ts</sup>&gt;5HT1A<sup>RNAi</sup></i> R: 91.750	--	--	--	--	< 10 <sup>-5</sup> 5.3375
Test 2/Stress (29°C) (6) <i>mb247&gt;&gt;GAL80<sup>ts</sup>&gt;5HT1A<sup>RNAi</sup></i> R: 31.333	--	--	--	--	--

**Tab. 10b** refers to data presented in Figure S4b

p-values of the KOLMOGOROV-SMIRNOV-Test (KS); LILLIFORS-Tests (Lillif) and SHAPIRO-WILK-Test (SW).

	N	Std.Dev.	p KS	p Lillif	p SW
<b>Pretest</b> <i>mb247&gt;&gt;GAL80<sup>ts</sup>&gt;5HT1B<sup>RNAi</sup></i>	18	0.7048	< 0.10	< 0.01	= 0.0056
<b>Pretest</b> <i>mb247&gt;&gt;GAL80<sup>ts</sup>&gt;5HT1B<sup>RNAi</sup></i>	18	0.8498	< 0.10	< 0.01	= 0.0159
<b>Test 1</b> <i>mb247&gt;&gt;GAL80<sup>ts</sup>&gt;5HT1B<sup>RNAi</sup></i> <b>Stressed Group (18°C)</b>	18	1.1827	< 0.15	< 0.01	= 0.0865
<b>Test 1</b> <i>mb247&gt;&gt;GAL80<sup>ts</sup>&gt;5HT1B<sup>RNAi</sup></i> <b>Stressed Group (29°C)</b>	18	0.9785	> 0.20	< 0.05	= 0.0267
<b>Test 2 (sucrose)</b> <i>mb247&gt;&gt;GAL80<sup>ts</sup>&gt;5HT1B<sup>RNAi</sup></i> <b>Stressed Group (18°)</b>	17	0.8703	< 0.15	< 0.01	= 0.0139
<b>Test 2 (sucrose)</b> <i>mb247&gt;&gt;GAL80<sup>ts</sup>&gt;5HT1B<sup>RNAi</sup></i> <b>Stressed Group (29°C)</b>	17	1.1726	> 0.20	< 0.05	= 0.0997

Comparison of the unpaired median data by the KRUSKAL-WALLIS-TEST (K-W).

Upper row: multiple p-values; lower row: z-values.

Genotyp	(2)	(3)	(4)	(5)	(6)
K-Wallis-Test: H(5 N=106)= 39.0988 p< 10 <sup>-5</sup>					
<b>Pretest/Stress (1)</b> <i>mb247&gt;&gt;GAL80<sup>ts</sup>&gt;5HT1B<sup>RNAi</sup></i> R: 60.972	~1.0000 0.5584	0.0001 4.5131	~1.0000 0.0379	~1.0000 0.0313	~1.0000 0.8032
<b>Pretest/Stress (2)</b> <i>mb247&gt;&gt;GAL80<sup>ts</sup>&gt;5HT1B<sup>RNAi</sup></i> R: 55.250	--	0.0011 3.9548	~1.0000 0.5963	~1.0000 0.5191	~1.0000 1.3536
<b>Test 1/Stress (18°C) (3)</b> <i>mb247&gt;&gt;GAL80<sup>ts</sup>&gt;5HT1B<sup>RNAi</sup></i> R: 14.722	--	--	0.0001 4.5511	0.0002 4.4169	< 10 <sup>-5</sup> 5.2514
<b>Test 1/Stress (29°) (4)</b> <i>mb247&gt;&gt;GAL80<sup>ts</sup>&gt;5HT1B<sup>RNAi</sup></i> R: 61.361	--	--	--	~1.0000 0.0687	~1.0000 0.7658
<b>Test 2/Stress (18°C)(5)</b> <i>mb247&gt;&gt;GAL80<sup>ts</sup>&gt;5HT1B<sup>RNAi</sup></i> R: 60.647	--	--	--	--	~1.0000 0.8228
<b>Test 2/Stress (29°C) (6)</b> <i>mb247&gt;&gt;GAL80<sup>ts</sup>&gt;5HT1B<sup>RNAi</sup></i> R: 69.324	--	--	--	--	--

## Supplementary References

- S1. Sweeney, S. T., Broadie, K., Keane, J., Niemann, H. & O'Kane, C. J. Targeted expression of tetanus toxin light chain in *Drosophila* specifically eliminates synaptic transmission and causes behavioral defects. *Neuron* **14**, 341-351 (1995).
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