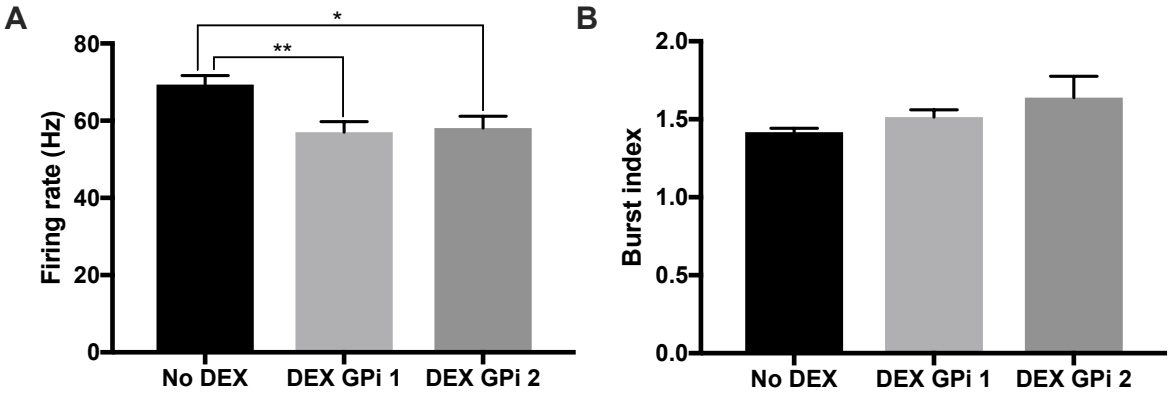
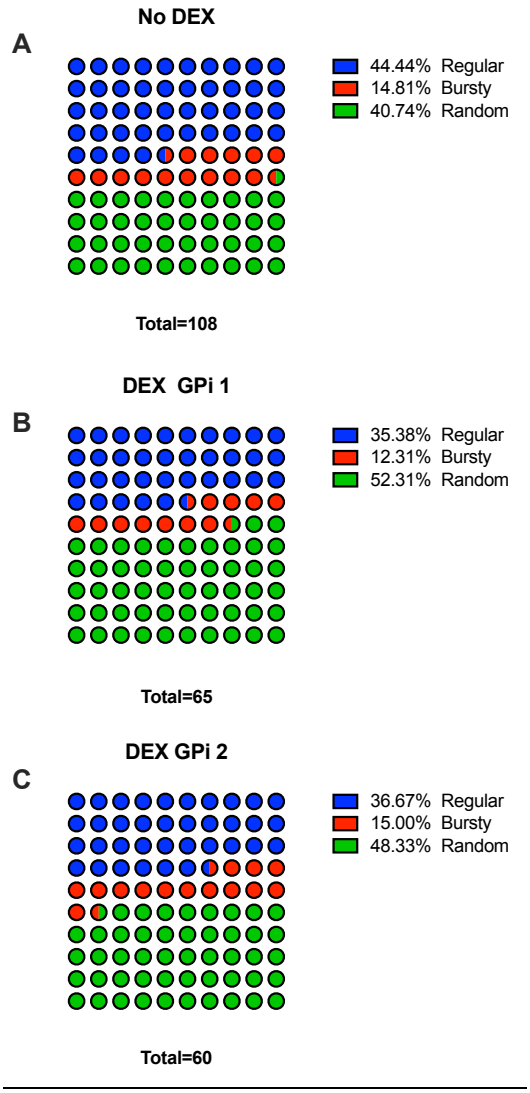


Measure	No DEX		DEX First GPi			DEX Second GPi		
Firing rate	69.53 ± 2.06	N=112	57.06 ± 2.73	N=85	P=0.004	58.07 ± 3.06	N=77	P=0.001
Burst index	1.42 ± 0.03	N=112	1.51 ± 0.05	N=85	P>0.999	1.64 ± 0.14	N=77	P=0.445

Supplementary Figure 1. The Difference in Firing Rates and Burst Index between GPi cells from the First Side of the Brain and the Second.

(A) Comparison of Firing rates recorded from the first GPi and second GPi of patients. Firing rates were similar between both sides of the brain, and were both statistically significant compared to firing rates from the No DEX group. Mean Firing rate from the First and second GPi were not statistically significant from each other (P>0.961). (B) Comparison of mean burst index recorded from the first GPi and second GPi of patients. Mean burst index values from both the first GPi and second GPi were found to be not significantly different from each other, nor were they significantly different from the No DEX group(P>0.999).

P values in the table correspond to differences with the No DEX group for each measure.



Supplementary Figure 2. 10x10 Dot Plots Depicting the Relative Proportion of GPi Firing Patterns From the First and Second Side of the Brain. Each dot corresponds to 1% of the neurons obtained from each group, the total corresponds to the total number of neurons sampled.

(A) Gpi cells from the No DEX group (B) GPi cells from the first side of the brain. C) GPi cells from the second side of the brain. No significant differences were found when comparing the proportion of cells from each side of the brain (P=0.333), nor when comparing the pattern of cells from each side of the brain with the No DEX group (P=0.870 & P=0.585 for the first and second GPi, respectively)