Supplementary Results

**Functional connectivity results:** FC between the bilateral amygdala seed region and whole brain showed significant positive FC with a large cluster including left and right precentral gyrus and anterior cingulate cortex (MNI coordinate x, y, z = 28, 0, -18; k = 35834; p FWE < 0.01) as well as smaller clusters in right frontal pole (MNI coordinate x, y, z = 44, 26, 22; k = 623; p FWE < 0.01), left orbitofrontal cortex (MNI coordinate x, y, z = -14, 36, -20; k = 417; p FWE < 0.01) and frontal operculum (MNI coordinate x, y, z = -36, 26, 6; k = 174; p FWE < 0.01) and right and left inferior occipital (MNI coordinate x, y, z = -56, -58, -4; k = 620; p FWE < 0.01; x, y, z = -50, -66, -2; k = 408; p FWE < 0.01). FC with the amygdala seed region in the locations of the sgvmPFC and dACC ROIs were positive but non-significant (df = 30; t = 0.56; p-unc = 0.29, and df = 30; t = 1.37; p-unc: 0.09, respectively, supplementary Figure 1). Negative FC was identified in clusters in the right superior (MNI coordinate x, y, z = 14, 18, 66; k = 469; p FWE < 0.01) and left middle frontal gyri (MNI coordinate x, y, z = -32, 18, 52; k = 181; p FWE < 0.01).

**[C-11]CURB λk₃ in striatum, medial prefrontal cortex and anterior cingulate cortex relations with amygdala FC:** We investigated whether the [C-11]CURB λk₃ relations with amygdala FC were unique to the amygdalar λk₃. To do this we extracted [C-11]CURB λk₃ in three additional regions: striatum, medial prefrontal cortex and cingulate. Results indicated that [C-11]CURB λk₃ in these regions was strongly

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Correlated with amygdala $\lambda k_3$ (see supplementary Table 1). Regional $\lambda k_3$ correlations with amygdala-sgvmPFC and amygdala-dACC FC were in the same direction as the amygdala $\lambda k_3$ correlations but were generally weaker (Supplemental Table 1).

[C-11]CURB $\lambda k_3$ across FAAH C385 genotype: We previously reported FAAH C385A genotype distinguished $\lambda k_3$ (in a subsample comprised here, $n = 20$). As a follow up to that earlier study, we selected the same 11 ROIs (amygdala, hippocampus, occipital cortex, parietal cortex, medial prefrontal cortex, prefrontal cortex, anterior cingulate cortex, temporal cortex, ventral striatum, dorsal striatum, and thalamus) for the analysis. We tested in the current expanded sample ($n = 31$) whether $\lambda k_3$ differed according to FAAH C385A genotype using a repeated measures ANOVA (genotype: C/C vs. A/A and A/C) x 11 (ROIs) and found a significant effect of genotype, $F(1, 29) = 5.39, p = 0.03$ and no genotype x ROI interaction $F(1, 29) = 0.734, p = 0.40$. 

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**Supplementary Table 1.** Correlations between amygdala-subgenual ventromedial prefrontal cortex (sgvmPFC) and amygdala-dorsal anterior cingulate cortex (dACC) functional connectivity (FC) obtain using the seed to ROI approach and [C-11]CURB λk3 in amygdala, medial prefrontal cortex (mPFC), cingulate, and striatum.

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<tr>
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</table>

* Shown in Fig 1, A and B

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Supplementary Figure 1. Whole brain functional connectivity map of the bilateral amygdala overlaid on mid-sagittal slices in MNI space (x = -6 to 14). **Orange** clusters represent regions positively coupled with the bilateral amygdala; **Light blue** clusters represent regions negatively coupled with the bilateral amygdala (cluster-level FWE corrected p < 0.05). **Dark blue** cluster within the dotted box represents seed-to-voxel derived cluster in ventromedial prefrontal cortex / dorsal anterior cingulate cortex in which [C-11]Curb λk₃ (in amygdala) was negatively correlated with amygdala functional connectivity (x, y, z = 14, 40, 10; cluster level FWE corrected p < 0.05). **Red square** represents the preselected dorsal anterior cingulate cortex (dACC) region of interest as per Dincheva et al¹ and Gärtner et al². [C-11]Curb λk₃ correlated with functional connectivity in this region of interest (q < 0.05). **Yellow square** represents the preselected subgenual ventromedial prefrontal cortex (sgvmPFC) region of interest as per Dincheva et al¹ and Gärtner et al². [C-11]Curb λk₃ correlated with functional connectivity in this region of interest (q < 0.05). Note that the preselected regions of interest and seed-to-voxel clusters are adjacent to amygdala functional connectivity map but do not overlap.
Supplementary Figure 2. Mid-sagittal slices in MNI space (x = -6 to 14) showing seed-to-voxel derived clusters in ventromedial prefrontal cortex (vmPFC) / dorsal anterior cingulate cortex (dACC) where amygdalar [C-11]CURB λk₃ was negatively correlated with amygdala functional connectivity (x, y, z = 14, 40, 10; cluster level FWE corrected p < 0.05) (Blue). The Red square represents the preselected dACC region of interest as per Dincheva et al¹ and Gärtner et al². [C-11]CURB λk₃ correlated with functional connectivity in this region of interest (q < 0.05). The Yellow square represents the preselected subgenual ventromedial prefrontal cortex (sgvmPFC) region of interest as per Dincheva et al¹ and Gärtner et al². [C-11]CURB λk₃ correlated with functional connectivity in this region of interest (q < 0.05). Note that the preselected regions of interest and seed-to-voxel cluster are adjacent but do not overlap.

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**Reference**
