

## Supplementary information

### Methods

#### Literature search and data extraction

In case studies did not provide standard mean differences (SMD) the results of the studies were calculated to a standardized mean difference (SMD) between the user group and the control group (healthy controls) for the whole striatum and if data was available for each of the striatal sub regions. Individual SMDs were conducted by dividing the difference in mean outcome between groups through the standard deviations (SD) of outcome among participants, which makes comparisons between different experimental conditions on outcome variables possible.

When studies only provided means and SDs separately for the hemispheres, the means and SDs were summarized with an estimated correlation of 0.5 resulting in the following formula:

$$SD\_bilateral\_sum = SD(x + y) = \sqrt{[SD(x)]^2 + [SD(y)]^2 + SD(x) * SD(y)}$$

We also used the formula to combine striatal sub regions into larger striatal regions (e.g. dorsal and ventral striatum into whole striatum; posterior and anterior into whole putamen or caudate).

In case studies only provided standard errors, they were used to calculate SD's using the formula, where n is the sample size of the corresponding group:

$$SD = SE\sqrt{n}$$

When values of interest were not provided, authors from the original articles were contacted and data was requested. Data request were not met, or the data was no longer available for 9 articles [1–9]

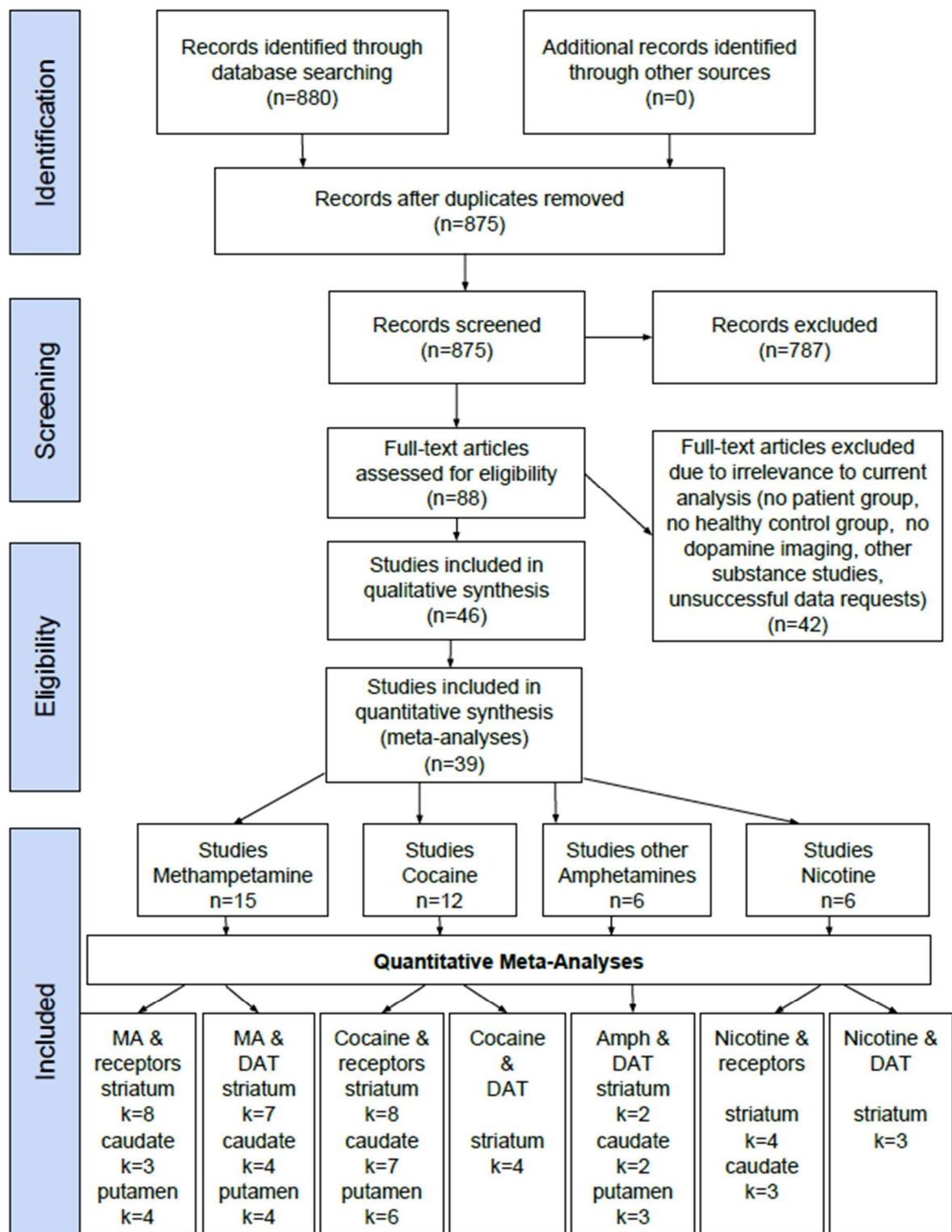


Fig S1. Flowchart literature search

## References

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