**Codebook**

*Study\_ID*

Unique identifier for each study

*First\_author*

First author of study

*Year\_published*

Year study was published

*Experiment\_ID*

Unique identifier for each individual experiment (i.e., if multiple experiments within the same study)

*ES\_ID*

Unique identifier for dat\_effect2$Type\_EE\_exposure each effect size

*Common\_species*

Common species name

*Strain*

Strain of study species

*Sex*

1 = female, 2 = males, 3 = mixed, 4 = not clear

*Housing*

1 = single housed, 2 = paired, 3 = group housed single sex, 4 = group housed mixed sex, 5 = other (e.g., when isolation is used as a form of stress), 6 = not clear

*Notes\_housing*

Any notes regarding the housing

*Age\_EE\_exposure*

The age at which the individuals were exposed to environmental enrichment

1 = prenatal, 2 = early postnatal (PND < 21), 3 = adolescent (PND 21 – 60), 4 = adult (PND > 60), 5 = unclear

Note: if the age covered two categories, we recorded the category that animals were exposed in the longest

*Notes\_age\_EE\_exposure*

Any notes regarding the age animals were during environmental enrichment

*Age\_stress\_exposure*

The age at which the individuals were exposed to stress

1 = prenatal, 2 = early postnatal (PND < 21), 3 = adolescent (PND 21 – 60), 4 = adult (PND > 60), 5 = unclear

Note: if the age covered two categories, we recorded the category that animals were exposed in the longest

*Notes\_age\_stress\_exposure*

Any notes regarding the age animals were during stress

*Age\_assay*

The age at which the individuals were assayed for learning or memory

1= early postnatal (PND < 21), 2 = adolescent (PND 21 – 60), 3 = adult (PND > 60), 4 = unclear

Note: if the age covered two categories, we recorded the most common category

*Notes\_age\_assay*

Any notes regarding how old the animals were when assayed

*Type\_EE\_exposure*

The type of environmental enrichment manipulation (not including social/biotic forms of enrichment)

1 = nesting material, 2 = objects, 3 = complexity of cage (i.e., multilevel cages), 4 = wheel/treadmill, 5 = combination, 6 = other, 7 = unclear

*Type\_EE\_details*

Details/notes regarding the EE manipulation

*EE\_exercise*

Does the form of enrichment include exercise through adding a running wheel or treadmill?

1 = yes, 2 = no, 3 =unclear

*EE\_social*

Does EE also include a manipulation of social environment (i.e., inceased number of individuals in EE relative to control)?

1 = yes, 2 = no, 3= unclear

*Type\_stress\_exposure*

The type of stress manipulation

1 = density, 2 = scent cues (i.e., from predators or competitors), 3 = shock, 4 = exertion (i.e., forces swim, forced exercise), 5 = restraint, 6 = maternal separation, 7 = circadian rhythm disruptions, 8 = noise, 9 = other, 10 = combination, 11 = unclear

*Type\_stress\_details*

Details/ notes regarding the stress manipulation

*Stress\_duration*

1 = acute (short term stress, one-off or <7 days), 2 = chronic (long term/exposure every day for ≥ 7 days with only short intervals between/if any), 3 = intermittent (i.e., on alternating days so there is time for recovery), 4 = unclear/other

*Notes\_stress\_duration*

Any notes regarding the duration of stress

*Exposure\_order*

The order in which individuals were exposed to stress and environmental enrichment

1 = stress followed by enrichment, 2 = enrichment followed by stress, 3 = concurrently, 4 = unclear/other

*Learning\_vs\_memory*

Is the assay broadly measuring learning or memory?

1 = learning (i.e., conditioning etc), 2 = memory (i.e., is learning stable after a period of time such as when measuring ‘extinction’), 3 = other (i.e., habituation)

*Type\_assay*

The type of learning/memory response (note that all memory requires prior learning)

1 = habituation, 2 = conditioning, 3 = recognition, 4 = unclear

*Type\_reinforcement*

The type of reinforcement used in conditioning

1 = appetitive (i.e., a reward by food or drink), 2 = aversive (punishment – this includes Morris water maze, shocks and falls), 3 = not applicable (i.e., no reward or aversive context was used – this includes novel object/location recognition and habituation), 4 = unclear

*Response\_assay\_name*

Name of assay

*Response\_details*

Details of what data was collected from the assay such as latency to perform tasks, the number of arm branches entered etc.

*Response\_unit*

The unit the response was measured in

*Response\_notes*

Any notes regarding the response such as if the response was an average across multiple measures or if it was the last day of habituation etc

*Response\_direction*

Does a higher response mean that the individuals are better at learning or memory?

1 = yes, 2 = no, 3 = unclear

*Data\_location*

Where was the data (i.e., mean, SD) found in the paper

*Original\_names*

List what the original treatment names used in the manuscript were

*CC\_n*

Sample size of EE and stress control (i.e., unmanipulated individuals)

*CC\_mean*

Mean of EE and stress control (i.e., unmanipulated individuals)

*CC\_SD*

Standard deviation of EE and stress control (i.e., unmanipulated individuals)

*CC\_SE*

Standard error of EE and stress control (i.e., unmanipulated individuals)

*EC\_n*

Sample size of EE and stress control

*EC\_mean*

Mean of EE and stress control

*EC\_SD*

Standard deviation of EE and stress control

*EC\_SE*

Standard error of EE and stress control

*CS\_n*

Sample size of EE control and stress

*CS\_mean*

Mean of EE control and stress

*CS\_SD*

Standard deviation of EE control and stress

*CS\_SE*

Standard error of EE control and stress

*ES\_n*

Sample size of EE and stress

*ES\_mean*

Mean of EE and stress

*ES\_SD*

Standard deviation of EE and stress

*ES\_SE*

Standard error of EE and stress

*Original\_names*

What were the original names of the treatments used in the study

*ROB\_blinding*

Risk of bias assessment: were the authors blind to the treatments during the learning/memory assays?

1 = yes, 2 = no, 3 = unclear/does not state

*ROB\_randomisation*

Were individual animals randomly allocated to treatments?

1 = yes, 2 = no, 3 = unclear/does not state

*Contact­\_author*

Do we need to contact the author for missing data?

*General\_comments*

Any general comments regarding the study/data including what to contact authors about