

Zwei Standorte, ein Stressmodell - Wie Haltungsbedingungen die Konsequenzen von chronischem psychosozialen Stress in der Maus beeinflussen?

Prof. Dr. Stefan Reber

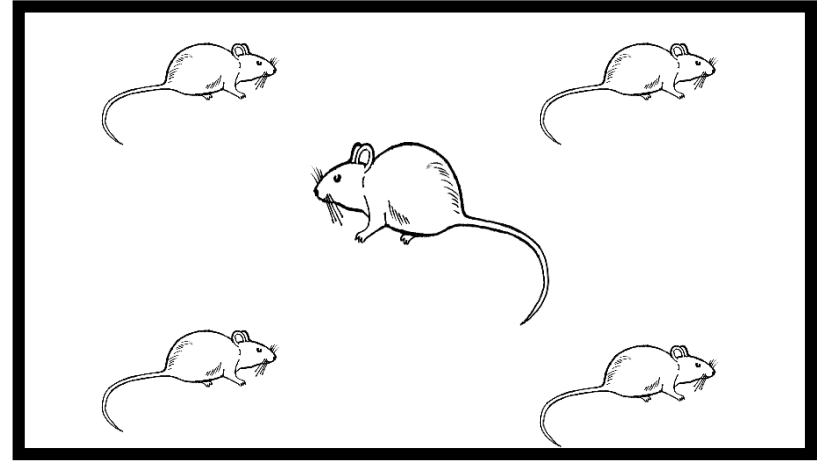
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Die chronisch subordinierte Koloniehaltung

single housed controls
(SHC)



chronic-subordinate colony housing
(CSC)



4 männliche Mäuse

+

großes ♂ (2)

1

8

15

19

4 männliche Mäuse

4 männliche Mäuse

Zeit [Tage]

+

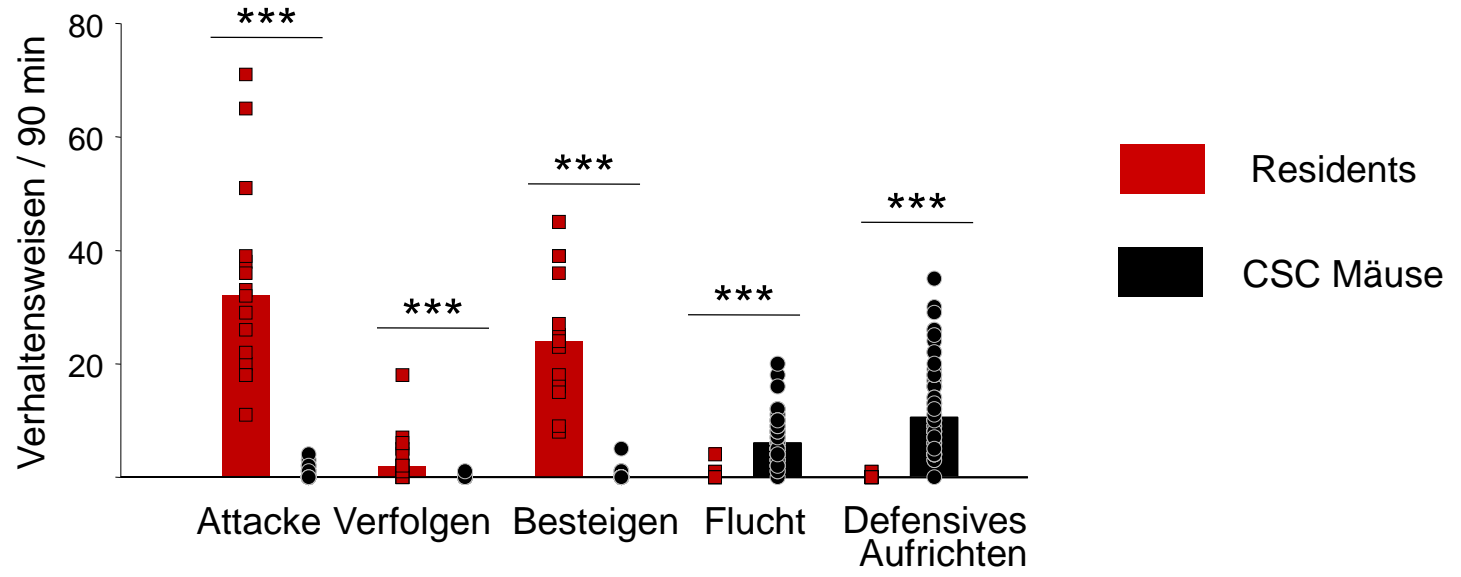
großes ♂ (1)

+

großes ♂ (3)

erstmalig beschrieben in Reber et al., 2007 *Endocrinology*; for review see Reber, 2012 *PNEC*

Die chronisch subordinierte Koloniehaltung



Attacke



Besteigen



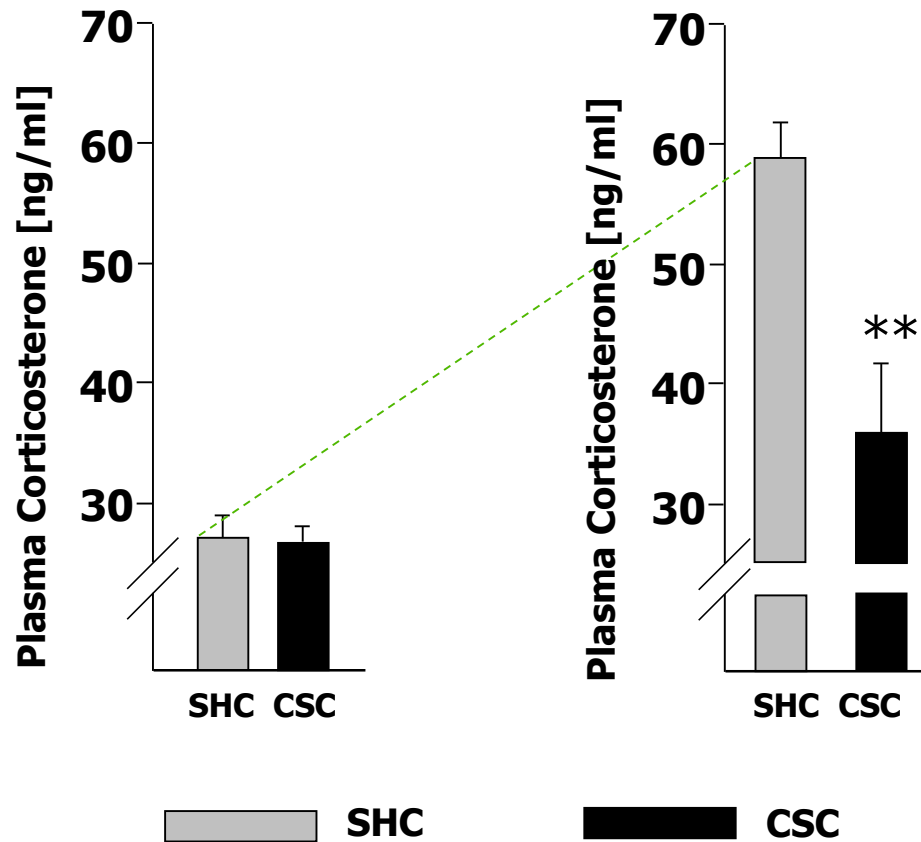
Defensives Aufrichten

Reber et al., 2008 *AnnalsNYASci*

Hypocortizismus wird auf Ebene der Nebennieren induziert --- *in vivo!*

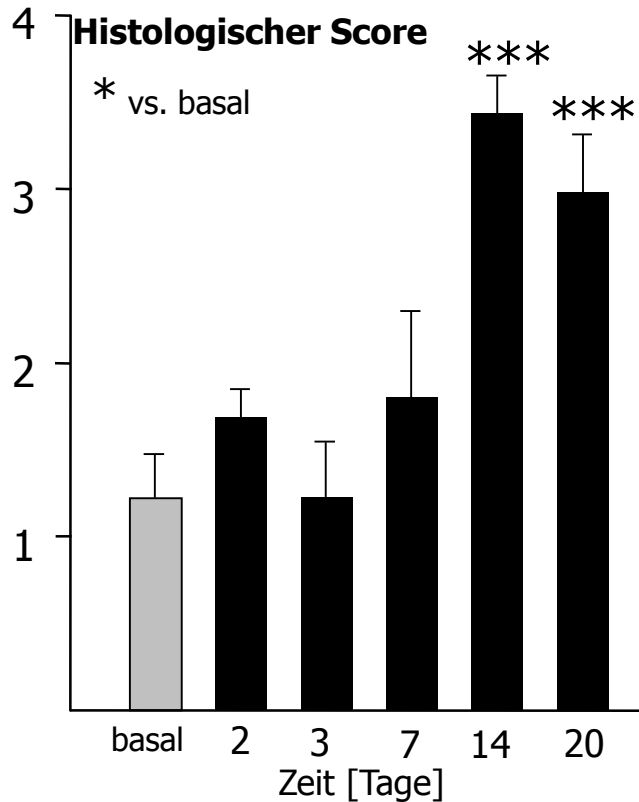
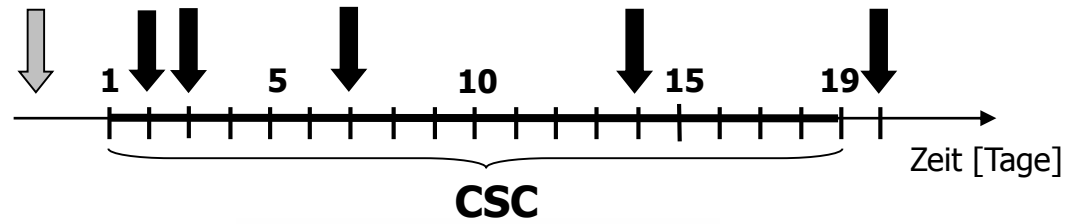
Hell Phase

Dunkel Phase

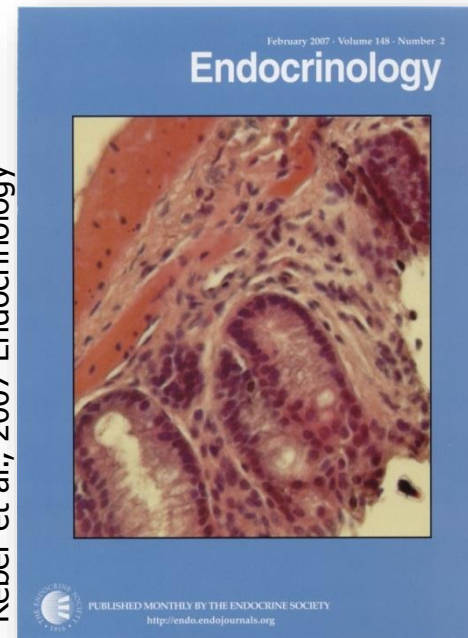


Reber et al., 2007 *Endocrinology*, Fuchsl et al., *PlosOne* resubmitted

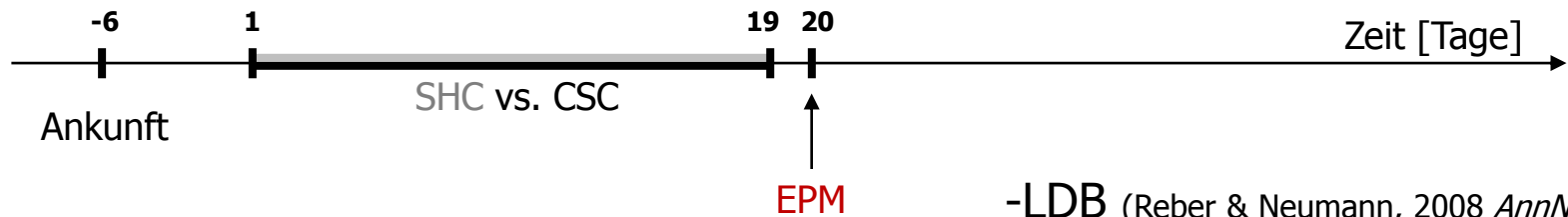
CSC induziert eine spontane Darmentzündung!



Reber et al., 2007 Endocrinology

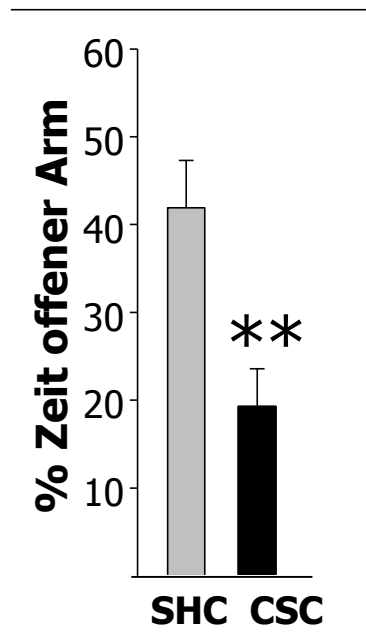


CSC erhöht das Angstverhalten!



- LDB (Reber & Neumann, 2008 *AnnNYAcadSci*)
- OF (Veenema et al., 2008 *Endocrinology*)
- OA (Singewald et al., 2009 *Stress*)
- EPF (Uschold et al., 2012 *PNEC*)

Tag 20



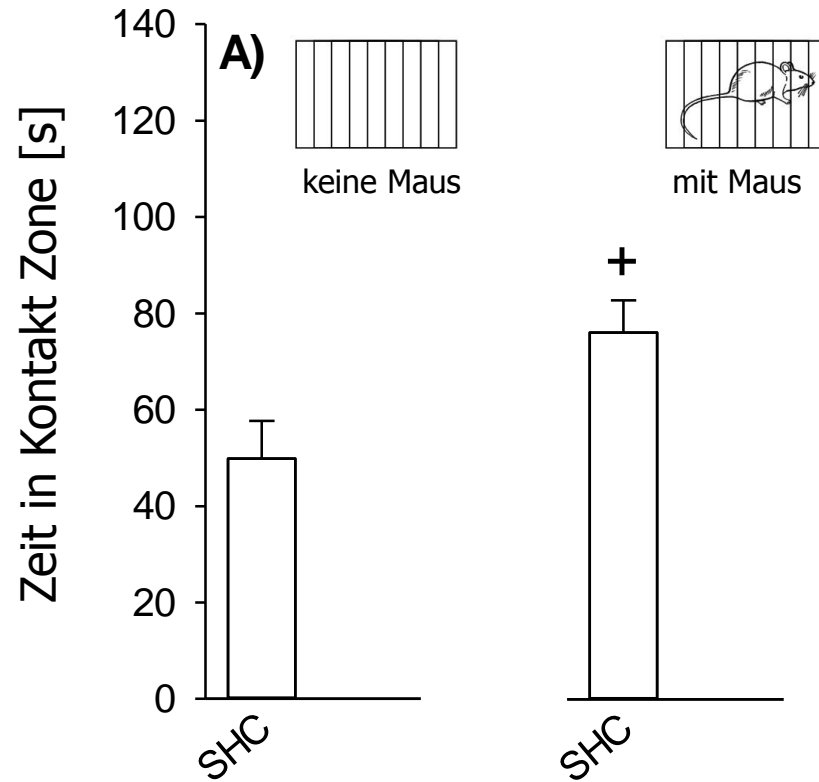
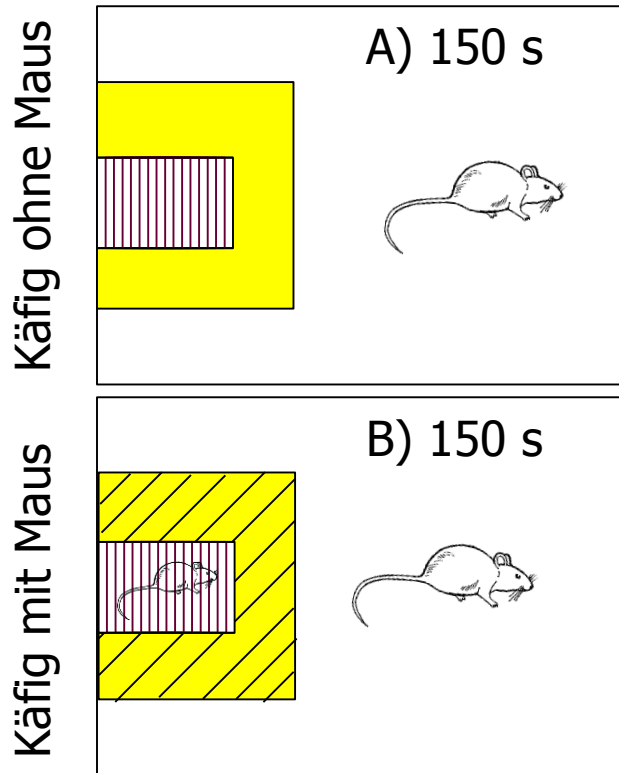
CA Eintritte waren nicht unterschiedlich!



Reber et al., 2007 *Endocrinology*, Reber et al., 2008 *Stress*

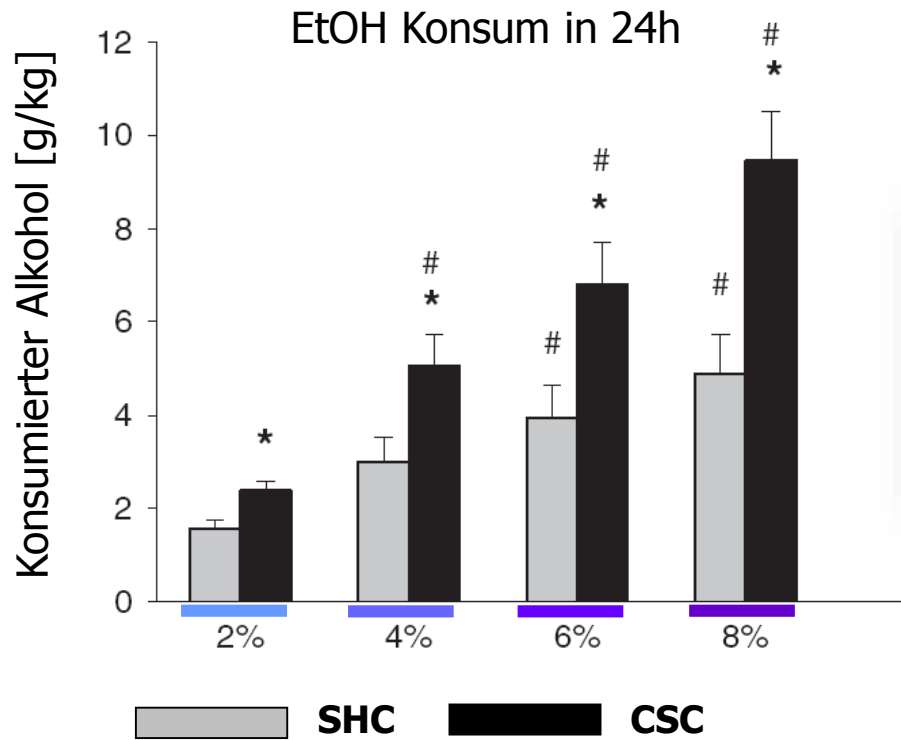
CSC induziert einen Verlust der sozialen Präferenz!

SPAT = social preference/ avoidance test



Slattery et al., 2012 *PNEC*

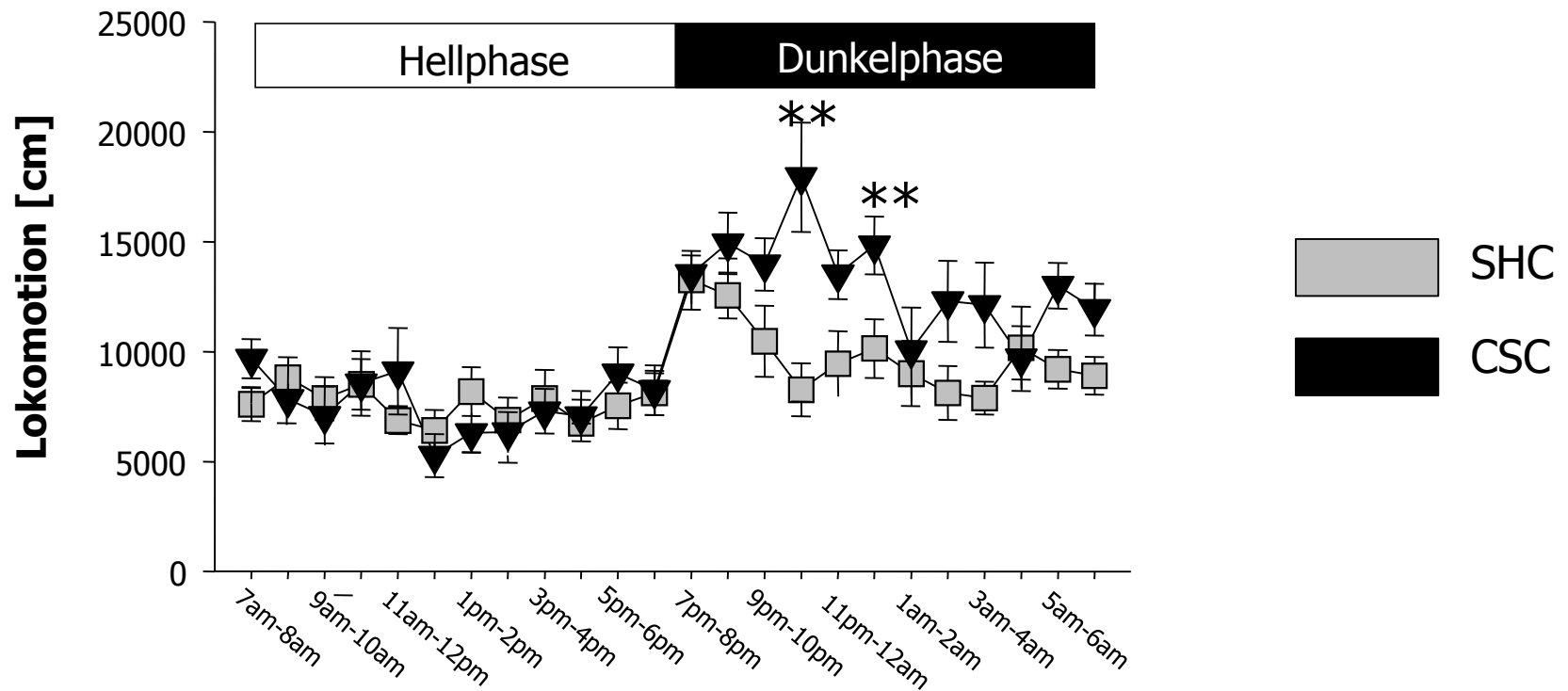
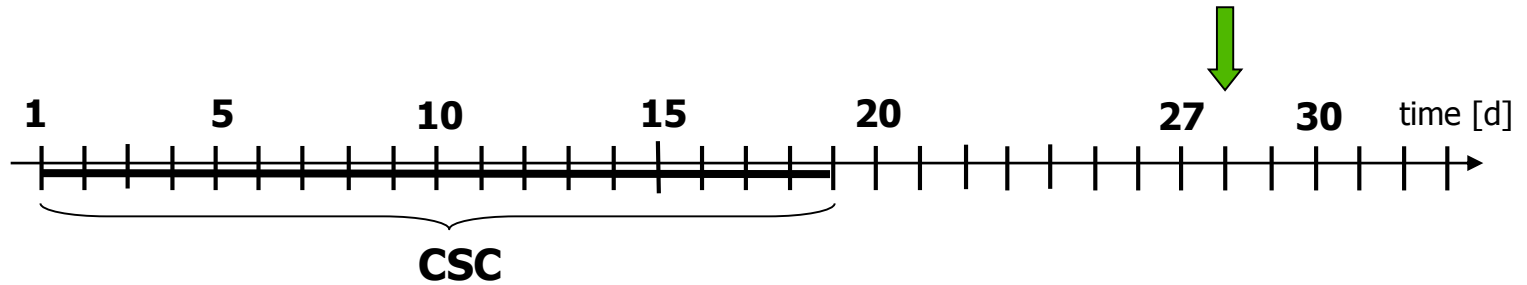
CSC erhöht das Alkoholtrinkverhalten und die Alkoholpräferenz!



Quinin und Saccharin Präferenz waren vergleichbar in CSC und SHC Mäusen.

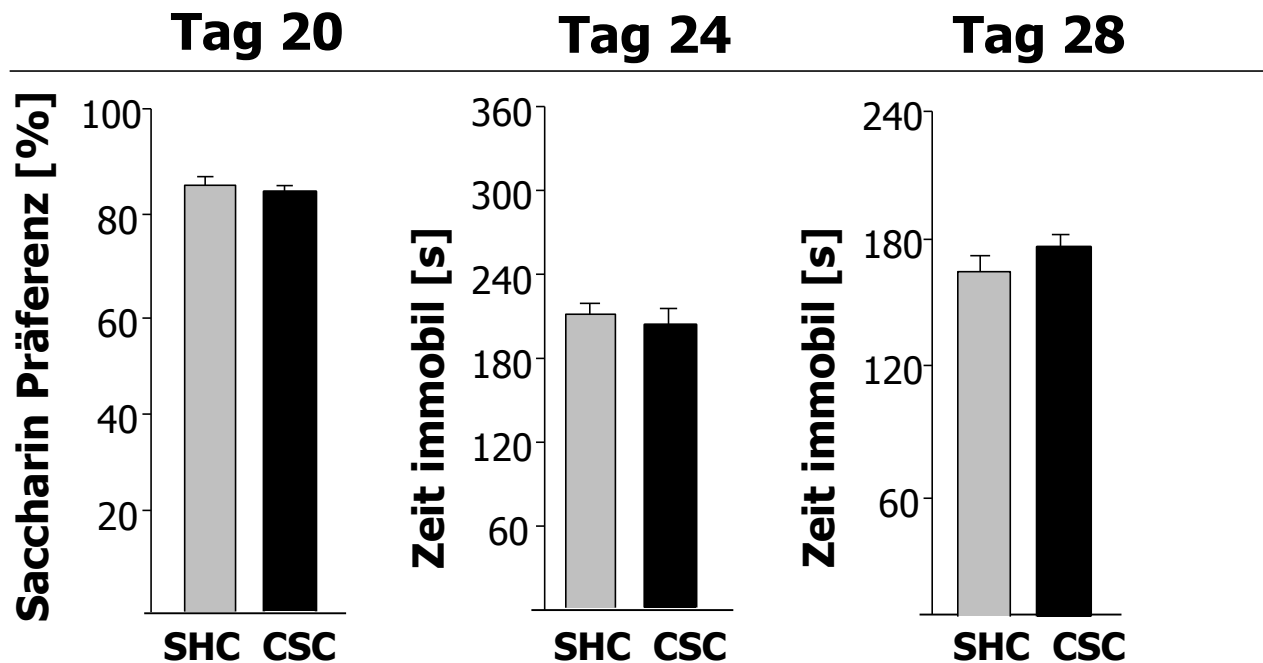
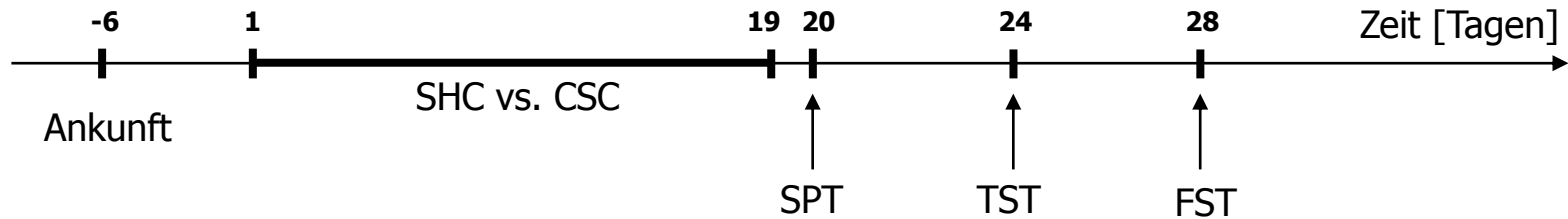
Peters et al., 2012 *Addiction Biology*

CSC induziert Hyperaktivität



Slattery et al., 2012 *PNEC*

CSC induziert kein depressionsähnliches Verhalten



Slattery et al., 2012 *PNEC*

Die chronisch subordinierte Koloniehaltung

	VS.		Chronic psychosocial stress induced by CSC causes:
pituitary weight plasma morning ACTH adrenal weight plasma morning CORT plasma evening CORT <i>in vitro</i> adrenal ACTH sensitivity	↑ ↑↑ ↑↑↑ ↔ ↓ ↓↓	hypocorticism	decreased GC signalling
<i>in vitro</i> GC sensitivity of LPS-stimulated splenocytes <i>in vitro</i> GC sensitivity of anti-CD3-stimulated Th2 LN cells	↓↓ ↓↓↓	GC resistance	
anxiety-related behaviour (EPM, LDB, EPF, OF, SPAT, OA) social preference (SPAT) depressive-like behaviour (FST, TST, SPT) home cage locomotion EtOH preference & intake	↑ ↓ ↔ ↑ ↑↑		affective disorders
inflammatory state of the colon severity of DSS-induced colitis inflammatory state of the liver risk for colorectal cancer	↑ ↑↑ ↑↑↑ ↑↑↑↑		somatic disorders

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inflammatory state of the colon # of isolated mesenteric lymph node cells (mLNC) IFN-γ secretion from mesLNC (antiCD3) inflammatory score of the colon	↑ ↑ ↑ ↑		somatic disorders