# SWIM STRESS-INDUCED ANXIETY

*Key-words: Anxiety, Stress, Anxiolytics,*

The elevated-plus-maze test measures anxiety-related behavior in rodents A Previous exposure to a swim stress induces an anxiogenic-like effect measured in the elevated-plus-maze test (Chaki et al., J Pharmacol Exp Ther. 313:831-839, 2005).

The model of swim stress-induced anxiety in the elevated-plus-maze allows to determine the potential effects of compound for reducing stress-induced anxiety. Experiments are conducted in adult Sprague-Dawley rats. Chlordiazepoxide is used as reference compound.

**Principle of the test** – The anxiety-related behavior is measured by the decrease in the time spent in the open arms of an elevated-plus-maze. A reduction of this anxiety-related behavior by a compound indicates an anxiolytic property.

**Method** – Sprague-Dawley rats are subjected to a swim stress for 3 min. Ten minutes after, the rat is placed for a 5 min-session on the elevated plus-maze test. The percentage of time spent in the open arms is measured. A decrease in the percentage of time spent in the open arms of the elevated-plus-maze indicates an anxious state.

**Example: effect of chlordiazepoxide.**

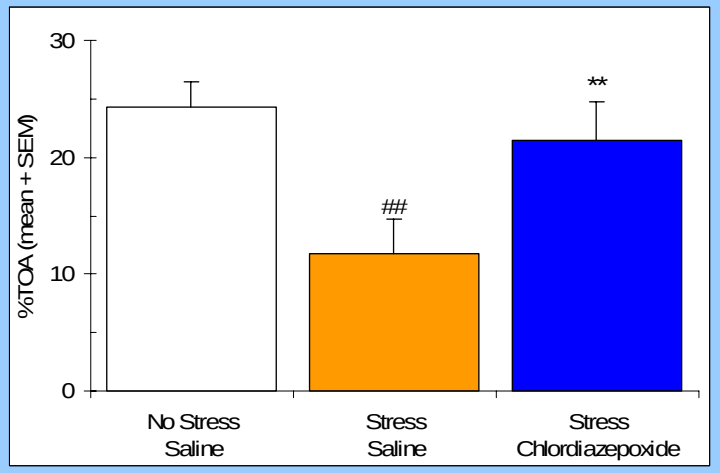
Animals are injected with either saline or chlordiazepoxide (5 mg/kg) 30 min before elevated-plus-maze test.

*No Stress:* group not subjected to forced swimming stress before elevated-plus-maze.

*Stress:* group subjected to forced swimming stress before elevated-plus-maze.

**Swim stress induces a decrease in the percentage of time spent in open arms (%TOA).**

**This anxiety-related response is reduced by chlordiazepoxide.**




*Difference vs. control group: (*) 0.05< p< 0.10; *** p< 0.001.*
*Difference T2 vs. T1: ## p< 0.01; ### p< 0.001*

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