Abstract
Here we study the effect of acute and chronic physical exercise in a treadmill and of daily stress (because forced exercise involves a degree of stress) during 2 or 8 weeks on different types of memory in male Wistar rats. The memory tests employed were: habituation in an open field, object recognition and spatial learning in the Morris water maze. Daily foot-shock stress enhanced habituation learning after 2 but not after 8 weeks; it hindered both short-term (STM) and long-term memory (LTM) of the recognition task at 2 weeks but only STM after 8 weeks and had no effect on spatial learning after either 2 or 8 weeks. Acute but not chronic exercise also enhanced habituation in the open field and hindered STM and LTM in the recognition task. Chronic exercise enhanced one important measure of spatial learning (latency to escape) but not others. Our findings indicate that some care must be taken when interpreting effects of forced exercise on brain parameters since at least part of them may be due to the stress inherent to the training procedure.

Keywords
Physical activity, stress, earning and memory, forced running.