
Social and Physical Environmental Enrichment Differentially Affect Growth and Activity of Preadolescent and Adolescent Male Rats

Julia Zaias,¹ Timothy J Queeney,² Jonathan B Kelley,² Elena S Zakharova,² and Sari Izenwasser^{2,*}

Environmental enrichment for laboratory animals is a widely accepted practice for many species, but few studies address the periods of preadolescence and adolescence. Provision of igloos, tunnels, nesting materials, and social or communal housing are commonly used enrichment strategies in rat cages. In the present study, the effects of individual, pair, and trio housing and the presence or absence of physical cage enrichment on the growth rate, food consumption, and locomotor behavior of juvenile male rats through adolescence were examined. The results indicated that social and physical enrichment decreased the growth and feeding rates and locomotor activity of developing rats as compared with rats living in an impoverished environment. The results show that the growth rates are dependent predominantly on environmental enrichment and that social enrichment alone has no effect. These results demonstrate that enrichment can have significant effects on growth and behavior of male rats.

Abbreviations: ANOVA, analysis of variance; PND, postnatal day