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**“DETERMINANTS OF ALCOHOLISM: BRIDGING THE GAP BETWEEN
EPIDEMIOLOGICAL AND BASIC RESEARCH”**

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as 4-hydroxynonenal) and central and systemic ethanol metabolism (acetaldehyde), but also products of biogenic amines degradation, including DOPAL (3,4-dihydroxyphenylacetaldehyde), dopamine (DA) first metabolite. The mitochondrial ALDH2 isoform is the best described due to its role in ethanol metabolism. Less known is a new body of research suggesting that ALDH2 dysfunction may contribute to a variety of human conditions including aging, neurodegenerative diseases and cancer. In this line, benomyl (a fungicide that directly inhibits ALDH2) and rotenone (a botanical insecticide that prevents NAD⁺ re oxidation in the mitochondrial complex I) have been associated with the environmental etiology of Parkinson disease. On the basis of these antecedents, in the present study we sought to describe the potential neurotoxicity of the exposure to the indirect ALDH inhibitor rotenone on the model organism *Caenorhabditis elegans*. Thus, wild type N2 worms were maintained in agar plates in the presence of food (OP50 *E. coli*) and synchronized to obtain adult animals. They were subsequently exposed to rotenone at 0, 2, 4, 6, 8 and 10 μ M concentrations to perform a doseresponse curve to evaluate potential lethality of this insecticide. They were also evaluated in their size to determine potential detrimental effects in normal growing conditions. The results demonstrated that the doses selected did not evidence any effect in the worm's survival, although a reduction in size was observed with the higher doses evaluated. Current experiments are focused on the study of the basal slowing response, a behavior dependent on the DA system integrity, to later determine DA functionality in available DA and ALDH transgenic strains. Overall, we propose the present approach as a useful tool to modulate ALDH functionality, which may have important implications, not only in the field of neurodegenerative diseases but also in the deep understanding of ethanol metabolism as a potential target of the drug addictive effects.

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OMEGA-3 BUT NOT OMEGA 6 MITIGATES BEHAVIORAL IMPAIRMENTS INDUCED BY BINGE ETHANOL EXPOSURE IN RAT NEONATES

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Maternal alcohol consumption during pregnancy may cause neurocognitive and behavioral disorders that can persist until adulthood. Epidemiological data has revealed an alarming increase in the frequency of alcohol intake in pregnant women. Nutritional variables may also have an impact on the behavioral alterations occasioned by alcohol during development. Moreover, omega-3, a polyunsaturated fatty acid necessary for normal brain development, is deficient in ethanol-treated animals. Although studies have shown that omega-3 supplementation after prenatal ethanol (EtOH) treatment improves some disorders, there are no reports about acute treatment with omega-3 in binge alcohol neurotoxic models during postnatal development. The goal of this study was to determine whether an administration of omega-3, after an acute ethanol dose in neonates, would be able to attenuate alcohol effects in offspring. Male/ female rats were administered ethanol (2.5 g/kg s.c. at 0 and 2 h) or saline on postnatal day (PND) 7, with a single dose of omega-3 (720 mg/kg), or omega-6, 15 min after the last alcohol injection. It has been found that EtOH-treated animals showed hyperlocomotion and anxiety-like behavior on PND 14. Administration of omega-3 after EtOH treatment reduced hyperlocomotion and the anxiety-like behaviors on PND 14. On the other hand, animals treated with omega-6 did not reduce those EtOH effects. In conclusion, acute ethanol exposure induced neurobehavioral

alterations that persisted in the offspring and omega 3 mitigates those effects but not omega 6. These data are relevant considering that omega-3 treatment may have therapeutic effects through mitigating some of ethanol's damaging consequences.

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PROTECTIVE BEHAVIORAL STRATEGIES AND ALCOHOL USE IN ARGENTINEAN COLLEGE STUDENTS: DIFFERENCES BETWEEN THE ACADEMIC SEASON AND THE SUMMER BREAK.

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Introduction: Protective behavioral strategies (PBS) reduce or minimize the negative consequences of alcohol drinking. PBS hold promise as intervention targets to reduce alcohol use and its negative consequences and, therefore, there has been an increasing interest in assessing determinants of this variable. It has been reported that women use more PBS than men and that certain contexts/seasons (e.g., Spring break vs. the regular academic season) are associated with greater use of PBS. The great majority research assessing these effects, however, comes from U.S., and very little is known about PBS determinants in South America. **Aim:** This work examined seasonal variations in the use of protective behavioral strategies (PBS) and alcohol outcomes in two distinct times of the academic calendar: 1-the spring academic semester and 2-summer break. We examined -both within each time and prospectively- the relationship between the use of PBS and alcohol outcomes. **Method:** A sample of 223 college students reported -via two online surveys -- use of PBS, alcohol use and alcohol-related negative consequences. **Results.** The use of PBS (notably, the dimension “manner of drinking”) was negatively associated with alcohol outcomes, particularly in women and during spring. The frequency of use (in women only) and the weekly volume of alcohol ingested were greater during the summer. Women, but not men, reported greater use of PBS and fewer negative consequences during the summer break than at the academic season. **Conclusions.** The use of certain PBS may be associated, particularly in women, with lower alcohol consumption and alcohol-related negative consequences.

ELSA COHORT 2014: HEAVY EPISODIC DRINKING TRAJECTORIES AMONG ARGENTINEAN COLLEGE STUDENTS

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Introduction: Heavy episodic drinking (i.e., the ingestion 4/5 standard alcohol drinks in one drinking session for women and men, respectively) is prevalent in college students. In Argentina, there is a need to progress from cross-sectional to longitudinal studies to better understand changes in alcohol use during the college