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Puberty and sleep regulation can influence alcohol use during early adolescence

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While alcohol in the form of a "night cap" may be able to help an individual fall asleep, its pharmacological properties later disrupt the rapid eye movement (REM) and deeper, more restorative stages of sleep. Sleep problems also predict the onset of alcohol abuse in healthy adults and relapse in abstinent alcoholics. A new study of associations among pubertal development, sleep preferences and problems, and alcohol use in early adolescence has found that puberty is related to sleep problems and later bedtimes, which were in turn associated with alcohol use.

Results will be published in the September 2010 issue of *Alcoholism: Clinical & Experimental Research* and are currently available at Early View.

"Pubertal timing has been found to predict adolescent alcohol use, with early maturing adolescents being more likely to drink," explained Sara Pieters, a doctoral student in neuropsychology at the University Nijmegen and corresponding author for the study. "Adolescent alcohol use has also been linked to sleep problems, such as trouble falling asleep, maintaining sleep, and perceived tiredness. This study combines these two separate lines of research by examining the impact of pubertal maturation on the relation between sleep problems and alcohol use."

Comparatively speaking, added Carmen Van Der Zwaluw, a doctoral student in neuropsychology at the University Nijmegen linkages between sleep problems and alcohol use by adolescents have received little scientific attention. "A few studies have shown … that adolescents who

experience sleep problems tend to use more alcohol than those without sleep difficulties," she said. "This has been mainly shown for late adolescents and young adults, but not yet for young adolescents, [however,] adolescent developmental changes such as puberty onset and different circadian rhythms take place [during] early adolescence."

Pieters and her colleagues used data collected from a larger study of 725 children in grades one through six in five participating Dutch schools. For this study, questionnaire data from 431 adolescents (236 girls, 195 boys) aged 11 to 14 years of age were analyzed for associations, if these associations changed vis-à-vis adolescent internalizing and externalizing problems, and if they were influenced by gender.

"Our results indicated that puberty was related to sleep problems and more evening-type tendencies such as favoring later bedtimes, which in turn were positively related to early adolescent alcohol use," said Pieters. "Underlying psychopathology, gender, and educational level did not change these relationships, meaning that these factors are not the explanatory mechanism behind this relation. From this study, it can be concluded that both puberty and sleep regulation are important factors in explaining alcohol use in early adolescence."

"[The finding that] puberty was related to alcohol use, via sleep problems and delayed circadian preference," said Van Der Zwaluw, "means that: [one,] early-maturing adolescents, in terms of puberty, tend to have more 'owl-like' tendencies such as favoring later bedtimes, and experience more sleep problems; [and two,] adolescents who have more owl-like tendencies and who experience more sleep problems also report higher levels of alcohol consumption."

"This study has shown that puberty-dependent sleep regulation is an important aspect of explaining alcohol use in early adolescence," said Pieters. "Our advice to clinicians would be to better screen for sleep

problems when adolescents seem to have other psychosocial or behavioral problems. To parents it is recommended that they monitor their offspring's sleep, keeping in mind that sleep has an effect on so many other health domains, including risky behaviors such as alcohol consumption."

Provided by Alcoholism: Clinical & Experimental Research

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