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Sip carefully

A new line of relaxation drinks containing neurotransmitters and hormones purports to help consumers sleep and reduce stress. Scientists should raise awareness of the potential harms of these drinks and pressure industry and government to increase the regulation of their sale and use.

Feeling sleepy? Stressed? Out of sorts? Luckily for you, a new line of relaxation drinks, with names like IChill, Dreamwater and NeuroDrink, are available next to soft drinks in many convenience store coolers in the US. These drinks, which purport to help you sleep, decrease stress, lose weight, improve cognition and even improve your sex life, contain neurotransmitters, hormones and/or amino acids. However, because relaxation drinks are classified as dietary supplements, rather than as food or drugs, there is no mandatory safety testing or FDA approval before they can be marketed in the US. It is instead assumed that the companies selling these products have conducted all of the necessary safety and efficacy testing before the products go to market (although there is no requirement that they release any information about such tests). Determining the effects of any compound on the CNS has inherent difficulties, and it will likely take years to come to a conclusion about the safety of these relaxation drinks. In the mean time, it is imperative that the public be made aware of the potential risks of dosing themselves with such potent chemicals. As those who are aware of the potential dangers of neuroactive compounds, scientists should help raise awareness about these drinks and call on industry and government to increase regulation.

Even assuming that companies selling relaxation drinks have done due diligence in performing the necessary safety tests, the adverse effects caused by ingredients directly targeting the CNS, including alterations in mood, sleep patterns or decision-making, may not be as easily detectable as, for example, cardiovascular effects. Common ingredients in these drinks include melatonin, GABA and 5-HTP, a serotonin precursor, as well as amino acids such as taurine, *N*-acetyl-cysteine and *L*-theanine, whose individual long-term effects may be hard to determine. Adding to this difficulty is the fact that these ingredients are often present in combination with other potentially mind-altering components, both those found in the drinks and those from other sources, such as alcohol, prescription drugs, tobacco or caffeine. Indeed, in the comparable case of energy drinks, which contain copious amounts of caffeine, as well as amino acids such as taurine, and are also classified as dietary supplements, it was their increasing use with alcohol that caused much alarm in the medical and scientific communities. Common combinations of components of these new relaxation drinks with everyday consumables may also turn out to be harmful. It is therefore unlikely that a single, or even a few, studies would be sufficient to rule out the possibility of harmful effects. Such studies would need to take into account the heterogeneity of the population using the drinks, the potential for effects of long-term use, and the possibility of developmental effects in children, adolescents or even young adults, whose brains are still developing.

Moreover, existing research on the potential benefits and harms of some components of relaxation drinks suggests that they may not always be safe.

Indeed, the FDA issued a warning letter last year to the manufacturers of melatonin-laced brownies, citing safety concerns from the literature, including effects on the autonomic nervous system and visual system and increased expression of symptoms in a sleep disorder. Other components of relaxation drinks, such as *L*-theanine or amino acids such as taurine, may be considered safe for consumption only at some doses by the FDA, but relaxation drinks are not subject to such regulations, nor are they required to disclose the amounts of their ingredients.

Since the FDA began regulating dietary supplements in 1994, the medical and scientific communities have voiced concerns about the apparent leniency of the regulations. Given the limited oversight and safety testing of dietary supplements, there is the possibility that any supplement could be harmful. So why the renewed concern about these new relaxation drinks? As a result of the way relaxation drinks are marketed, consumers are far less likely to consider the potential risks associated with ingesting supplements than they would if they were to take a pill. Furthermore, although some relaxation drinks contain statements warning against use by small children or pregnant women, others do not, and their brightly colored bottles and social media-heavy marketing suggest some may be targeting a youthful audience. Their easy availability in convenience stores also suggests to consumers that they are as harmless as any soft drink.

Until the ingredients of relaxation drinks are known to be safe, steps should be taken to, at the very least, increase public awareness of their potential dangers. Ideally, FDA oversight of relaxation drinks should be increased.

In the absence of increased regulation, however, recent events surrounding energy drinks, which contain high levels of caffeine as well as taurine, can serve as an encouraging illustration of how pressure from the scientific community can lead to action. Spurred by public outrage over deaths caused by mixing energy drinks with alcohol, and in response to pressure from clinicians and scientists (which included pressure from the American Medical Association and a letter to the FDA from concerned scientists), the American Beverage Association recently unveiled voluntary guidelines aimed at improving the labeling of energy drinks (including caffeine content) and discouraging their marketing as sports drinks, mixers for use with alcohol or to children. If the scientific and medical community can put similar pressure on the producers of relaxation drinks, it may well lead to similar voluntary steps being taken by the industry even in the absence of public outcry. Although industry guidelines on labeling and advertising are unlikely to fully resolve the problems associated with unintended or uninformed use of neuroactive supplements, they would be a step in the right direction. It is imperative that we speak up now. ■