What Do Dietary Supplements Have to Do With Eating Disorders Prevention?

WHAT IS THE PROBLEM?

Eating disorders are a serious public health problem affecting youth and adults of all races, ages, and genders. In recent years, research has illuminated significant health disparities in eating disorders: girls report more eating disorder symptoms than do boys[1]; sexual minority and transgender youth are likelier to develop eating disorders than their heterosexual and cisgender counterparts[2–4]; youth of color are equally likely as white youth to develop eating disorders but less likely to access treatment.[5,6] Eating disorders are associated with a number of serious health risks including osteoporosis and heart disease.

Eating disorders are diagnosed based on a number of criteria, including the presence of what clinicians call unhealthy weight control behaviors (UWCBs). These behaviors can constitute either a symptom or a risk factor for eating disorders, depending on a person's other behaviors. One UWCB of particular concern is the use of pills or powders to lose weight or build muscle, which are often sold as dietary supplements. ***Although they are sold alongside multivitamins and other supplements largely regarded as safe, these products often contain unlisted, illegal pharmaceutical ingredients that pose serious risks.***[12]

Under the Dietary Supplement Health and Education Act of 1994 (DSHEA), the U.S. Food and Drug Administration (FDA) does not have the authority to require proof of safety or efficacy prior to the sale of these products.[7] While some voluntary certifications exist, there is no guarantee that a supplement contains what the label says it does. ***Supplements sold for weight loss and muscle-building have been found to contain substances including untested designer amphetamine analogues, psychotropic drugs, and the active ingredient from the failed weight-loss drug Meridia, which was pulled from the market in 2010.*** These products have been linked to outbreaks of liver injury,[8] some severe enough to require transplantation,[9] and have even caused several high-profile deaths in recent years.[10,11]

While DSHEA does grant the FDA the power to test products on the market and initiate recalls, this is not an effective means of protecting the public: One recent study found that two-thirds of recalled supplements still contained contaminants six months after the recalls were initiated.[12] Despite the harms these products can cause, the perception of risk associated with them is still low, and the U.S. market is estimated to exceed $40 billion.[13] ***Given the severity and scope of this problem, policy intervention is warranted at the state and local level.***

WHAT CAN WE DO?

States and municipalities have a number of policy tools at their disposal that can reduce the threats these products pose. ***Taxation*** and ***age restrictions*** are two evidence-based public health policy strategies that have been used in a number of contexts to reduce youth access to dangerous products, most notably cigarettes and alcohol.

While studies have found that youth may be particularly influenced by taxation, it is often used as a targeted strategy. In the cases of both alcohol and tobacco, taxation has been found to drive down overall consumption in adults as well as youth.[14–16] Although supplements for weight loss and muscle-building are risky for adults as well as children, adults are better able than children to assess these risks and make informed decisions concerning supplement use.

By contrast, age limits are specific to youth and have been demonstrated to reduce alcohol and tobacco consumption in adolescents when appropriately enforced.[15,17] Like with alcohol and tobacco, supplements for weight loss and muscle-building can be kept behind a pharmacy counter or in a locked display case; this may have the added benefit of bolstering risk perception. By emphasizing the need to protect youth, imposing age restrictions may serve as an attractive opportunity for businesses to demonstrate corporate social responsibility by engaging as partners in the development and implementation of regulations regarding the display and sale of supplements.[18] ***STRIPED encourages policymakers and advocates to pursue age restrictions as an evidence-based, politically feasible strategy.***

WHAT'S HAPPENING IN MA?

A bill has been introduced by Rep. Kay Khan (D-Newton) during the 191st General Court with input from STRIPED. If passed, ***H.1942, An Act Protecting Children From Harmful Diet Pills and Muscle-Building Supplements***, would:

- Restrict the sale of diet pills and supplements sold for weight loss and muscle-building to adults 18 years and over only
- Mandate that such products be kept behind a counter or otherwise inaccessible to minors in order to facilitate enforcement of the age restriction
- Require the placement of signs alerting consumers to the dangers associated with these products
- Direct the Department of Public Health to develop criteria for determining which products are included

Full legislative text and information about the bill's current status can be found at https://malegislature.gov.

-Policy brief prepared by Monica Kriete, MPH

References

1. Stephen EM, Rose JS, Kenney L, Rosselli-Navarra F, Weissman RS. Prevalence and correlates of unhealthy weight control behaviors: findings from the national longitudinal study of adolescent health. *J Eat Disord*. 2014;2:16. doi: 10.1186/2050-2974-2-16.
2. Austin SB, Nelson LA, Birkett MA, Calzo JP, Everett B. Eating Disorder Symptoms and Obesity at the Intersections of Gender, Ethnicity, and Sexual Orientation in US High School Students. doi:10.2105/AJPH.2012.301150.
3. Hadland SE, Austin SB, Goodenow CS, Calzo JP. Weight Misperception and Unhealthy Weight Control Behaviors Among Sexual Minorities in the General Adolescent Population. *J Adolesc Heal*. 2014;54:296-303. doi:10.1016/j.jadohealth.2013.08.021.
4. Diemer EW, Grant JD, Munn-Chernoff MA, Patterson DA, Duncan AE. Gender Identity, Sexual Orientation, and Eatingrelated Pathology in a National Sample of College Students. doi:10.1016/j.jadohealth.2015.03.003.
5. Thompson C, Park S. Barriers to access and utilization of eating disorder treatment among women. *Arch Womens Ment Health*. doi:10.1007/s00737-016-0618-4.
6. Becker AE, Franko DL, Speck A, Herzog DB. Ethnicity and differential access to care for eating disorder symptoms. *Int J Eat Disord*. 2003;33(2):205-212. doi: 10.1002/eat.10129.
7. Cohen PA, Goday A, Swann JP. The Return of Rainbow Diet Pills. *Am J Public Health*. 2012;102(9):1676-1686.
8. Frieden TR, Jaffe HW, Richards CL, Diaz PS. Morbidity and Mortality Weekly Report Centers for Disease Control and Prevention MMWR Editorial and Production Staff. *MMWR*. 2013;1162(62).
9. Stickel F, Kessebohm K, Weimann R, Seitz HK. Review of liver injury associated with dietary supplements. *Liver Int*. 2011;31(5): 595-605. doi:10.1111/j.1478-3231.2010.02439.x.
10. Morris S. Woman died after accidental overdose of highly toxic diet pills. *The Guardian*. https://www.theguardian.com/society/2015/jul/23/woman-diedaccidental-overdose-highly-toxic-dietpills-eloise-parry. Published July 23, 2015.
11. Singer N, Lattman P. A Workout Booster, and a Lawsuit. *The New York Times*. http://www.nytimes.com/2013/02/14/business/death-after-use-of-jack3dshows-gap-in-regulation.html. Published February 14, 2013.
12. Cohen PA, Maller G, DeSouza R, Neal-Kababick J. Presence of banned drugs in dietary supplements following FDA recalls. *J Am Med Assoc*. 2014;312(16): 1691-1693. doi:10.1001/jama.2014.10308.
13. Statista. Dietary supplements market size United States 2024 forecast. Secondary Dietary supplements market size United States2024 forecast 2018. https://www.statista.com/statistics/828481/total-dietary-supplements-market-size-in-the-us/
14. Wagenaar AC, Tobler AL, Komro KA. Effects of Alcohol Tax and Price Policies on Morbidity and Mortality: A Systematic Review. *Am J Public Health*. 2010;100(11): 2270-2278. doi:10.2105/AJPH.2009.186007.
15. Lewit EM, Hyland A, Kerrebrock N, Cummings KMi. Price, Public Policy, and Smoking in Young People. *Tob Control*. 1997;6(6 (suppl)):S17-S24.
16. Townsend J, Roderick P, Cooper J. Cigarette smoking by socioeconomic group, sex, and age: effects of price, income, and health publicity.
17. O'Malley PM, Wagenaar AC. Effects of Minimum Drinking Age Laws on Alcohol Use, Related Behaviors and Traffic Crash Involvement among American Youth: 1976-1987'. *J Stud Alcohol*. 1991;52(5).
18. Kulkarni A, Huerto R, Roberto CA, Austin SB. Leveraging corporate social responsibility to improve consumer safety of dietary supplements sold for weight loss and muscle building. *Transl Behav Med*. 2017;7(1):92-97. doi:10.1007/s13142-016-0434-4.