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TESTIMONY

Submitted to the Massachusetts Senate and Assembly in support of H.2215/S.1465, “An Act protecting children from harmful diet pills and muscle-building supplements”

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April 26, 2021

Dear Honorable Members of the Massachusetts Senate and House:

I, Dr. Jason Nagata, am a pediatrician at UCSF Benioff Children’s Hospital and a faculty member at the University of California, San Francisco. I would like to share research supporting H.2215/S.1465 and to strongly urge you to vote in favor of this critically important bill.

The U.S. weight-loss and muscle-building supplement industry generates over \$2.5 billion in annual revenue and youth are prominent consumers of these products.^{1,2} We have all seen these products in local pharmacies, grocery stores, and health food stores. What many people don’t know is that weight-loss and muscle-building supplements are not reviewed by the US Food and Drug Administration (FDA) for safety or effectiveness before they enter the market.³ However, research assessing the composition of these supplements have found that many are adulterated with banned substances, prescription drugs, stimulants, steroids, and other toxic ingredients.^{4,5} These additives are often associated with serious and detrimental health consequences.^{4,5}

Rigorous scientific study after study has shown that these types of supplements pose serious health risks to consumers. A recent study found that youth using weight-loss supplements were three times more likely than those using ordinary vitamins to experience severe medical harm, including hospitalization, disability, and even death.⁶ Studies have linked weight loss and muscle-building supplements to organ failure, heart attacks, stroke, and death.⁶⁻¹¹ The CDC estimates that supplement use leads to 23,000 emergency room visits every year, with a quarter due to the weight-loss category alone.¹²

The American Academy of Pediatrics recently issued two reports strongly cautioning against teens using these products for any reason.¹³ Youth who use over-the-counter diet pills are six times more likely to be diagnosed with an eating disorder compared to nonusers.^{2,14} Use of muscle-building supplements has also been linked to eating disorders.¹⁴ Young people who use muscle-building supplements are more likely to subsequently use illegal muscle-building drugs like anabolic steroids¹⁵ and develop problematic alcohol use behaviors.¹⁶ As a pediatrician specializing in adolescent eating disorders, I have cared for countless youth who have used weight

loss or muscle-building supplements, developed eating disorders, become critically ill, and required hospitalization. Hospitalizations for eating disorders have doubled at UCSF with similar trends around the country since the start of the COVID-19 pandemic. Diet pills, weight loss and muscle-building supplements, and eating disorders affect youth of all races, genders, sexual orientations, sizes, and socio-economic backgrounds. Weight loss and muscle-building supplements worsen health inequities and disproportionately affect people of color, low-income households, and those without health insurance.¹⁷⁻²⁰ We need to get these dangerous products out of the hands of our kids.

H.2215/S.1465 gives Massachusetts lawmakers the opportunity to take action now to protect our children. This bill would prevent the sale of weight-loss supplements and over-the-counter diet pills to minors across the state. I urge you to vote in support of H.2215/S.1465. We must act now to protect the children of Massachusetts.

Thank you for your time and leadership on this important issue.

Sincerely,

A handwritten signature in black ink that reads "Jason Nagata". The signature is written in a cursive, flowing style.

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Citations

1. Vig H, Deshmukh R. Weight Loss and Weight Management Diet Market: Global Opportunity Analysis and Industry Forecast, 2021-2027. <https://www.alliedmarketresearch.com/weight-loss-management-diet-market>. Accessed April 6, 2021.
2. Levinson JA, Sarda V, Sonnevile K, Calzo JP, Ambwani S, Bryn Austin S. Diet pill and laxative use for weight control and subsequent incident eating disorder in US young women: 2001-2016. *Am J Public Health*. 2020;110(1):109-111. doi:10.2105/AJPH.2019.305390
3. Ganson KT, Murray SB, Nagata JM. A call for public policy and research to reduce use of appearance and performance enhancing drugs and substances among adolescents. *Lancet Child Adolesc Heal*. 2020;4(1):13-14. doi:10.1016/S2352-4642(19)30345-1
4. Cohen PA, Travis JC, Vanhee C, Ohana D, Venhuis BJ. Nine prohibited stimulants found in sports and weight loss supplements: deterenol, phenpromethamine (Vonedrine), oxilofrine, octodrine, beta-methylphenylethylamine (BMPEA), 1,3-dimethylamylamine (1,3-DMAA), 1,4-dimethylamylamine (1,4-DMAA), 1,3-dimethylbutylamine (1,3-DMBA) and higenamine. *Clin Toxicol*. March 2021:1-7. doi:10.1080/15563650.2021.1894333
5. Cohen PA, Travis JC, Keizers PHJ, Deuster P, Venhuis BJ. Four experimental stimulants found in sports and weight loss supplements: 2-amino-6-methylheptane (octodrine), 1,4-dimethylamylamine (1,4-DMAA), 1,3-dimethylamylamine (1,3-DMAA) and 1,3-dimethylbutylamine (1,3-DMBA). *Clin Toxicol*. 2018;56(6):421-426. doi:10.1080/15563650.2017.1398328
6. Or F, Kim Y, Simms J, Austin SB. Taking Stock of Dietary Supplements' Harmful Effects on Children, Adolescents, and Young Adults. *J Adolesc Heal Off Publ Soc Adolesc Med*. June 2019. doi:10.1016/j.jadohealth.2019.03.005
7. Park SY, Viray M, Johnston D, et al. Notes from the field: Acute hepatitis and liver failure following the use of a dietary supplement intended for weight loss or muscle building - May-October 2013. *Morb Mortal Wkly Rep*. 2013;62(40):817-819. /pmc/articles/PMC4585555/. Accessed April 6, 2021.
8. Navarro VJ, Barnhart H, Bonkovsky HL, et al. Liver injury from herbals and dietary supplements in the U.S. Drug-Induced Liver Injury Network. *Hepatology*. 2014;60(4):1399-1408. doi:10.1002/hep.27317
9. Jakopin Ž. Risks associated with fat burners: A toxicological perspective. *Food Chem Toxicol*. 2019;123:205-224. doi:10.1016/j.fct.2018.10.051
10. Pittler MH, Ernst E. Dietary supplements for body-weight reduction: A systematic review. *Am J Clin Nutr*. 2004;79(4):529-536. doi:10.1093/ajcn/79.4.529
11. Wharton S, Bonder R, Jeffery A, Christensen RAG. The safety and effectiveness of commonly-marketed natural supplements for weight loss in populations with obesity: A critical review of the literature from 2006 to 2016. *Crit Rev Food Sci Nutr*. 2020;60(10):1614-1630. doi:10.1080/10408398.2019.1584873
12. Geller AI, Shehab N, Weidle NJ, et al. Emergency Department Visits for Adverse Events Related to Dietary Supplements. *N Engl J Med*. 2015;373(16):1531-1540. doi:10.1056/nejmsa1504267
13. Golden NH, Schneider M, Wood C, NUTRITION CON, ADOLESCENCE CON, OBESITY SON. Preventing Obesity and Eating Disorders in Adolescents. *Pediatrics*. 2016;138(3):10.1542/peds.2016-1649. Epub 2016 Aug 22. doi:10.1542/peds.2016-1649 [doi]
14. Nagata JM, Peebles R, Hill KB, Gorrell S, Carlson JL. Associations between ergogenic supplement use and eating behaviors among university students. *Eat Disord*. 2020. doi:10.1080/10640266.2020.1712637
15. Nagata JM, Ganson KT, Gorrell S, Mitchison D, Murray SB. Association Between Legal Performance-Enhancing Substances and Use of Anabolic-Androgenic Steroids in Young Adults. *JAMA Pediatr*. May 2020. doi:10.1001/jamapediatrics.2020.0883
16. Ganson KT, Mitchison D, Murray SB, Nagata JM. Legal performance-enhancing substances and substance use problems among young adults. *Pediatrics*. 2020;146(3):e20200409. doi:10.1542/peds.2020-0409
17. Pillitteri JL, Shiffman S, Rohay JM, Harkins AM, Burton SL, Wadden TA. Use of dietary supplements for weight loss in the united states: Results of a national survey. *Obesity*. 2008;16(4):790-796. doi:10.1038/oby.2007.136

18. Cohen PA, Benner C, McCormick D. Use of a pharmaceutically adulterated dietary supplement, Pai You Guo, among Brazilian-born women in the United States. *J Gen Intern Med.* 2012;27(1):51-56. doi:10.1007/s11606-011-1828-0
19. Eisenberg ME, Wall M, Neumark-Sztainer D. Muscle-enhancing behaviors among adolescent girls and boys. *Pediatrics.* 2012;130(6):1019-1026. doi:10.1542/peds.2012-0095 [doi]
20. Nagata JM, Ganson KT, Griffiths S, et al. Prevalence and correlates of muscle-enhancing behaviors among adolescents and young adults in the United States. *Int J Adolesc Med Heal.* 2020.