



## LETTERS

## DIETARY SUPPLEMENTS

# Potent and untested drugs sold as “dietary supplements”

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A new challenge to public health has recently emerged from potent and untested drugs being sold under the guise of “dietary” supplements.<sup>1-4</sup> Fuelled by growing demand for products promising a better body, enhanced performance, and increased wellbeing, this trend highlights creative marketing strategies used in the illicit supply of drugs.

Nine supplements suspected of containing drugs were analysed as part of an investigation for the television programme *Spotlight* (broadcasted 31 March 2015 by BBC Northern Ireland). The supplements were bought from high street shops and from an e-commerce site (box). Products were sold as “fat burners” or “pro-hormones,” with packaging often blatantly listing chemical names of drugs.

Ostarine, found in product 4, is a selective androgen receptor modulator that is being tested as a medicine, but has not been authorised for marketing. The stimulant 1,3-dimethylamylamine (DMAA) was found in products 1 and 2, and 1,3-dimethylbutylamine (DMBA) was found in products 3 and 8. DMAA was recently identified in “dietary supplements” and has been associated with adverse events, including acute myocardial infarction, strokes, and deaths.<sup>4</sup> Since regulators removed DMAA from the market, an analogue DMBA has appeared as a replacement.<sup>3</sup> Products 6, 7, and 9 contained

anabolic steroids, some of which have been associated with hepatotoxicity.<sup>2</sup> Although advertised as legal pro-hormones they are controlled drugs in the UK.

These findings illustrate market developments, which now include dietary supplements containing medicines, “legal highs,” and controlled drugs. Many experienced users are aware of this marketing strategy. However, young and inexperienced people may be unknowingly exposing themselves to potent drugs. Clinicians should ask patients about the use of supplements and report suspected adverse events to medicine agencies.

Competing interests: None declared.

Full response at: [www.bmj.com/content/348/bmj.g1476/rr](http://www.bmj.com/content/348/bmj.g1476/rr).

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**Content of nine dietary supplements bought on the high street and internet**

Product 1. Strip Ts\*: Caffeine, 1,3-dimethylamylamine (DMAA), synephrine

Product 2. Strip Ts\*: Caffeine, (DMAA), synephrine

Product 3. Angel Dust: Caffeine, 1,3-dimethylbutylamine (DMBA)

Product 4. Ostapure: Ostarine

Product 5. Hemo Rage: Caffeine, synephrine

Product 6. SD Extreme: methasterone

Product 7. Metha-Quad Extreme: Methylstenbolone, methasterone, 13-ethyl-3 methoxy-gona-2,5(10)-dien-17-one

Product 8. Mutant Noxx Mass Power Blend: Caffeine, DMBA

Product 9. M1T Hulk XT: Methyl-1-testosterone

\*Same product bought from two different shops.